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June 5, 2002

Mr. Joseph Jones
Bureau of Eastern Remedial Action
Division of Environmental Remediation
New York State Department of
Environmental Conservation
625 Broadway
Albany, NY 12233

Re: Site Numbers 1-30-009 and 1-30-053A
Third Quarter 2001 Progress Report

File: 643.001

Dear Mr. Jones:

Enclosed please find three copies of the First Quarter 2002 Progress Report for the subject sites.

Should you have any questions regarding the enclosed, please feel free to contact Charlie Nehrig at 516-609-1052. Thank you.

Very truly yours,

BARTON & LOGUIDICE, P. C.

Andrew J. Barber
Senior Managing Environmental Scientist

AJB/mfg

cc: G. Anders Carlson, Ph.D., NYSDOH, Albany, NY (2 copies)
Robert Becherer, NYSDEC, Region 1, Stony Brook, NY (1 copy)
John F. Byrne, Esq., NYSDEC-DEE, Tarrytown, NY (1 copy)
James Harrington, NYSDEC, Albany, NY (1 copy)
Charlie Nehrig, Photocircuits (1 copy)
Louis Stans, Photocircuits (1 copy)
Mark Pennington, Esq., Morgan, Lewis & Bockius (1 copy)

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FIRST QUARTER 2002
PROGRESS REPORT

PHOTOCIRCUITS AND FORMER PASS & SEYMOUR SITES
31 & 45 SEA CLIFF AVENUE

SITE NUMBERS 1-30-009 AND 1-30-053A

Prepared for:
Photocircuits Corporation
31 Sea Cliff Avenue
Glen Cove, New York 11542

Prepared by:
Barton and Loguidice, P.C.
2 Corporate Plaza
264 Washington Avenue Extension
Albany, New York 12203

April, 2002

1.0 Introduction

This First Quarter 2002 Progress Report (1Q02) is being submitted pursuant to the 1997 Order on Consent between Photocircuits Corporation and the New York State Department of Environmental Conservation (NYSDEC).

During the First Quarter of 2002, the following was accomplished:

- Groundwater samples were collected from monitoring wells located on both the 31 and 45A Sea Cliff Avenue sites during the period of January 8-10.
- A second injection of edible oil substrate was performed at the 31 Sea Cliff Avenue site during the period of February 25 to March 3.
- Based on results from the January sampling event, Photocircuits proposed extending the Soil Vapor Extraction (SVE) and Air Sparging (AS) system at the 45A Sea Cliff Avenue site; SVE wells and AS points were installed on the east side of Building 7 in preparation for extension of the system.

2.0 Discussion of Results

2.1 SVE System at 31 Sea Cliff Avenue

The SVE system at the 31 Sea Cliff Avenue site was installed as an Interim Remedial Measure (IRM), and started operation in April 2000. The SVE system, equipped with the CatOx/scrubber for extracted vapor treatment, was restarted on July 21, 2000 and was operated continuously until August 2001; system operation was interrupted only for a few brief periods for maintenance activities and in March to mid-May, 2001 because of high water-table conditions.

As discussed in the 2Q01 report, the results of vapor sample analyses and the photoionization detector (PID) readings demonstrate that contaminant mass removal versus time has clearly become asymptotic. We conclude that we have demonstrated that there is little or no residual contamination in the unsaturated zone, and that further contaminant removal from the unsaturated zone is infeasible. The SVE system will be decommissioned in the near future.

2.2 Bioremediation Pilot Test

The bioremediation pilot test was started during the week of August 28, 2000 when Terra Systems conducted the injection of a nutrient solution (substrate) into the subsurface at the 31 Sea Cliff Avenue site. Following the injection, groundwater samples were collected from the following monitoring wells/points: MW-7, MW-14, SMP-1, DMP-1, SMP-3, DMP-3, SMP-4 and DMP-4. These wells/points were sampled again on October 18-19, December 20, 2000, March 27-28, 2001and July 11-12, 2001; the March and July sampling events included several wells located along Sea Cliff Avenue (MW-8, MW-9, MW-12 and MW-13) along with the wells sampled during the previous events. Another sampling event was conducted January 8-10, 2002; the results of this sampling event are attached to this report.

A status report on the pilot test (including the data from the samples collected in January 2002) was prepared by Terra Systems and is included as Appendix A to this report. The main conclusion of the report are as follows

- The addition of the edible oil substrate has enhanced the extent and rate of chlorinated solvent biodegradation at the site; degradation rates as high as 394 ug/L of total volatile organic compounds (VOCs) have been observed in areas of higher concentration.

- A first order degradation half life of 301 days was calculated for the average total VOC concentration within the pilot cell area; this degradation rate suggests that 90% of the total VOC mass within the pilot test cell will be removed within 30 months.

- The edible oil substrate was adequately distributed during the August 2000 injection, and monitoring data suggests that the substrate has been consumed as a result of biological utilization.

- Bioremediation will be the primary treatment technology for contaminant destruction at the site.

By letter dated October 25, 2001, NYSDEC authorized an additional injection of substrate that had been recommended by Photocircuits; this work was conducted during the period of February 25 to March 3, 2002. The injection system consisted of 7 one-inch diameter wells installed to 60 feet below land surface (bls), and 5 one-inch wells installed to 55 feet bls. Eight of the wells were spaced 7.5 feet apart in a line. Two additional wells were placed on either side of the line (see attached figure). Each of the wells had 20 feet of PVC blank riser and either 35 or 40 feet of PVC screen (0.02 slot). The wells were installed using the Geoprobe™ direct-push method.

Injection well installation began on February 25, 2002 using a Geoprobe™ Model 5400 mounted on a small track vehicle. After the installation of well IW-15, the driller was unable to advance the 2-1/2 inch drill rod beyond 15 feet bls in two additional borings.

A heavier truck mounted Geoprobe™ Model 5400 was brought on site on February 26, 2002. Four attempts were made on February 26th to install additional wells with the 2-1/2 inch drill rods. Refusal was encountered at 15 feet bls on two holes and 24 feet bls on two holes. A large truck mounted Geoprobe™ Model 6600 was brought in on February 27, 2002. Refusal was encountered at 35 feet bls in the first borehole using the 2-1/2 inch drill rod. A pilot hole was then advanced with a 1-1/2 inch drill rod; the pilot hole was then enlarged with the 2-1/2 inch drill rod. The remaining 10 wells were installed using this technique.

The substrate package for this injection event was designed for an estimated 5 year supply of substrate. The actual and design volumes are summarized in the following table. The emulsion was prepared by passing the slow release substrate package, quick release substrate package, and bromide tracer through a high shear mixer. Four 550-gallon stainless steel tanks were used to store the emulsion prior to injection.

	ACTUAL	DESIGN
Slow release substrate package	8545 lbs.	15,704 lbs.
Quick release substrate package	42 lbs.	78 lbs.
Bromide tracer	4.2 lbs.	7.7 lbs.

Due to the heterogeneity of the site, only about 54% of the intended amount of slow release substrate package could be injected. The following table summarizes the quantity (in gallons) of fluid injected into each of the wells on a daily basis.

Well #	2/26/02	2/27/02	2/28/02	3/1/02	3/2/02	3/3/02	Total
IW-8					58	65	123
IW-9			278		13	42	333
IW-10					103	34	137
IW-11				155		32	187
IW-12					13	52	65
IW-13				615	57	17	689
IW-14			473	182	83	102	840
IW-15	504	20		47	73	29	673
IW-16			465	501	67	27	1060
IW-17				205	29	35	269
IW-18				129	126	28	283
IW-19			45	264	61	29	399
Total	504	20	1261	2098	683	492	5058

As indicated in the above table, the injection rates decreased dramatically on March 2nd and 3rd. Although difficult to confirm, it appears that the emulsion was spread throughout the pilot area based on the following observations:

- Appearance of emulsion in monitoring wells MW-7 and MW-14.
- A standpipe was placed on well MW-14; emulsion was allowed to rise approximately 2 feet above ground surface in the standpipe before stopping the injection in injection well IW-15.
- Emulsion began leaking around cracks in the concrete pads throughout virtually the entire pilot area.
- After a period of time, emulsion came out of injection well I-16 as it was being injected into injection well I-10.
- Emulsion began leaking around the SVE wells between injection wells I-12 and I-17.

In addition to the observations just described, the following observations and conclusions are a result of the reinjection activities:

- The heterogeneity of the formation makes it difficult to predict which areas will accept large quantities of fluids.
- The low pressure injection technique did not require chase water to be injected into the formation to push the emulsion away from the injection point at this site.
- The hydraulic conductivity of the area is lower than anticipated which directly affects the total amount of fluid that can be injected.
- The viscosity of the emulsion is within an acceptable range.

An attempt will be made in April to inject the remainder of the substrate that could not be injected during the event just described.

2.3 IRM at 45 Sea Cliff Avenue

As discussed in the 4Q 2000 report, SVE/AS equipment was procured and delivered to the site. The SVE/AS system consists of a 10 horsepower (hp) regenerative blower and 5 hp compressor, along with electrical controls, filters, moisture separators, and valves; the system is contained within an insulated trailer, which has been located just outside of Building 7. Following delivery, the system components were connected to the piping networks for the AS and SVE wells. Two 1200 lb activated carbon adsorbers were attached in series to the blower outlet to treat recovered vapors. The SVE system was started on November 1, 2000; because the initial contaminant concentrations were relatively high, the AS portion of the system was not started. The AS component of this system was started on March 28, 2001. The system was down from April 20-24 due to an electrical problem. The system was down most of June and July due to equipment overheating; the system was re-started on July 30 and shut down on September 20.

Monitoring data was presented in the 2Q01 report, including data from sampling of individual SVE wells (March 2001) and sampling of total SVE system effluent over time. Prior to the start of the AS component, the relationship of total contaminant mass removal versus time was clearly becoming asymptotic. The start of the AS component increased contaminant mass recovery somewhat (see the April 2001 sample results).

However, the results of the May vapor sample indicate that mass removal versus time relationship became asymptotic. We concluded at that time that we demonstrated that there is little or no residual contamination at that location, and that further contaminant removal is infeasible.

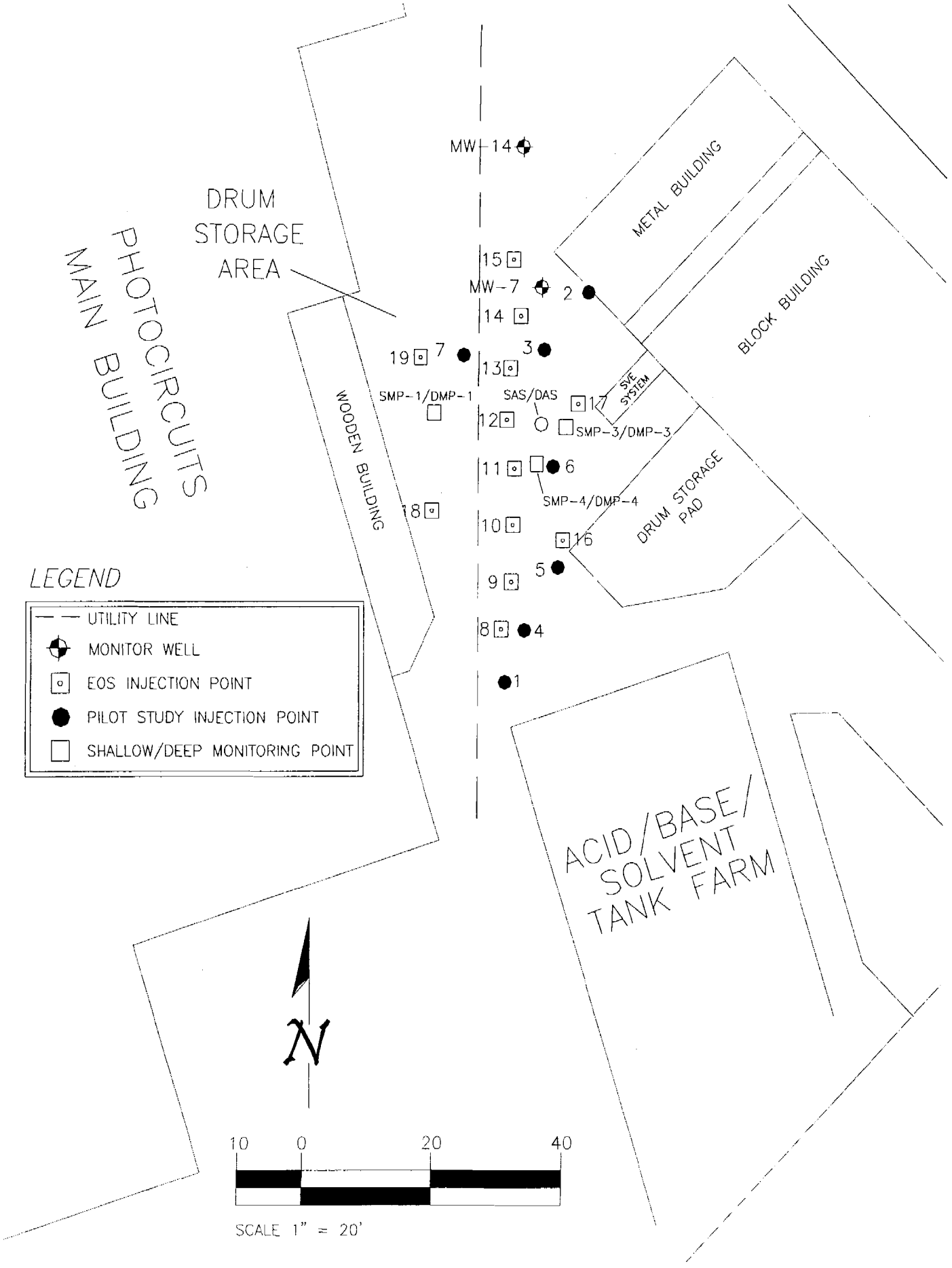
Monitoring wells located on the 45A Sea Cliff Avenue site (MW-1S, MW-2S, MW-3S and MW-4S) and near the 45A Sea Cliff Avenue site (MW-9, MW-10 and MW-11) were sampled in January 2002, and the results are attached. Based on results from the January sampling event, Photocircuits proposed extending the SVE/AS system at the 45A Sea Cliff Avenue site from the west side to the east side of Building 7. The basis for the extension of the system and the proposed piping and equipment layout were provided in the February 13 letter to NYSDEC. The SVE wells and AS points were installed at the proposed locations on the east side of Building 7 in late February, in preparation for the extension of the system. After field evaluation, it was decided that it would be more efficient to move the aboveground portions of the system (equipment trailer, carbon vessels) to the east side of Building 7 rather than to extend their operation by piping from the west side to the east side of Building 7, as originally proposed. Electrical service has been provided to the new location and the aboveground portions of the system will be moved in April for reconnection and startup.

2.4 Hydraulic Control along Sea Cliff Avenue

A meeting was held with NYSDEC on October 11, 2001 to discuss the progress of the bioremediation pilot test. Although there was substantial disagreement between Photocircuits and the NYSDEC over the progress of the bioremediation pilot test and the need for groundwater remediation, Photocircuits agreed to review available options for containment of groundwater along the northern boundary of the Photocircuits site (31 Sea Cliff Avenue). Photocircuits conducted the review of remedial options, and by letter dated October 26, 2001, Photocircuits presented the results of the review. The recommended approach for the conditions at the Photocircuits site is the use of hydraulic control. Photocircuits submitted a work plan for the performance of pumping tests necessary for the design of a hydraulic control system on November 13, 2001; following receipt of verbal comments from NYSDEC, Photocircuits submitted a revised work plan on December 7, 2001. Approval for implementation of the work plan was received from NYSDEC by letter dated December 19, 2001. The pumping tests were performed in January and the remedial design report was submitted to NYSDEC on April 11, 2002.

3.0 Schedule

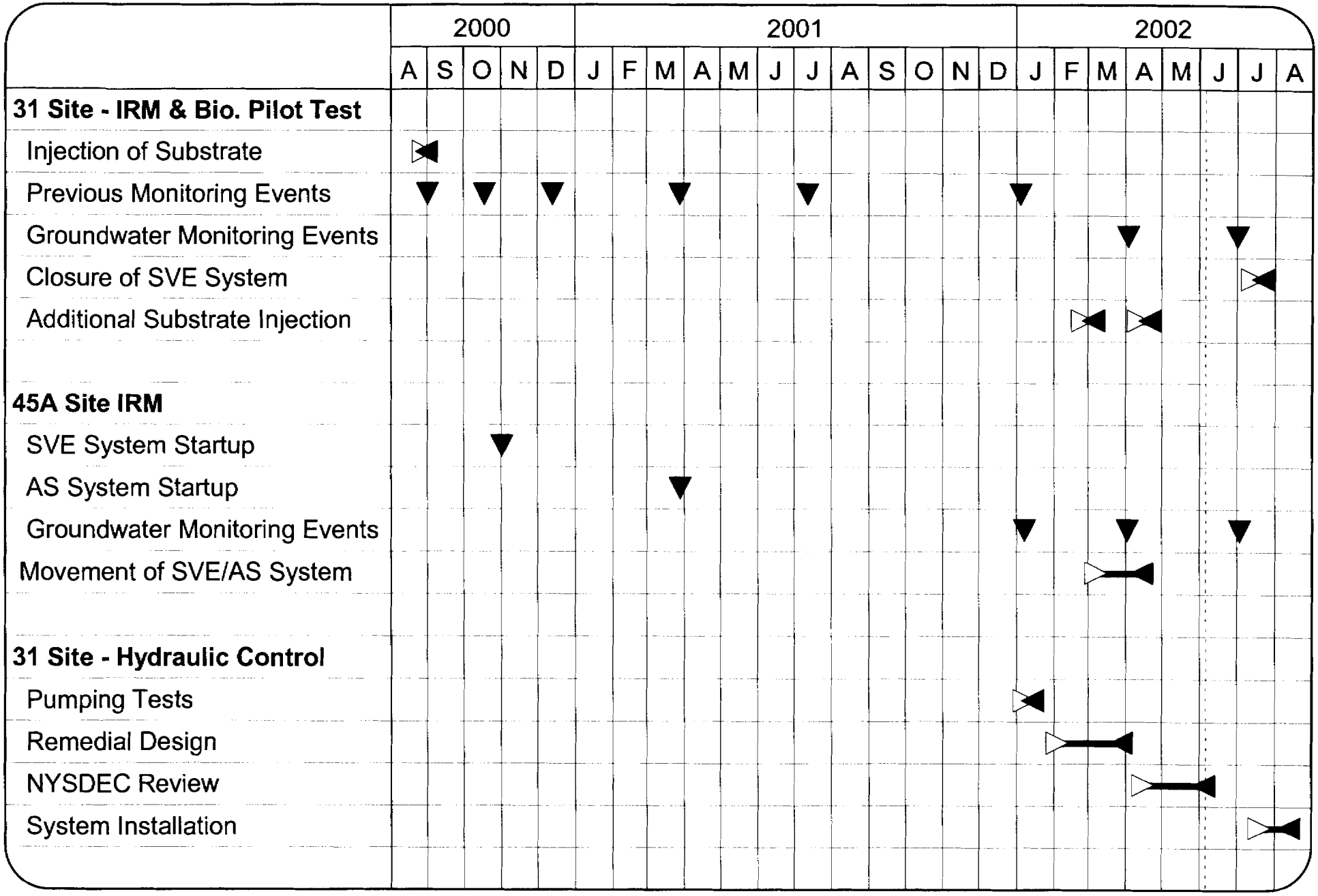
The planned schedule of activities for the next few months is attached.


MW-14
DRUM STORAGE AREA
PHOTOCIRCUITS MAIN BUILDING
METAL BUILDING
BLOCK BUILDING
15
MW-7
2
14
19
7
3
13
SMP-1/DMP-1
SAS/DAS
17
SVE SYSTEM
12
SMP-3/DMP-3
WOODEN BUILDING
11
6
SMP-4/DMP-4
18
DRUM STORAGE PAD
10
16
5
9
8
4
1
LEGEND
UTILITY LINE
MONITOR WELL
EOS INJECTION POINT
PILOT STUDY INJECTION POINT
SHALLOW/DEEP MONITORING POINT
ACID/BASE/ SOLVENT TANK FARM
N
10
0
20
40
SCALE 1" = 20'

Photocircuits - Updated Schedule of Remedial Activities

31 & 45 Sea Cliff Avenue Sites

6/5/02



Terra Systems
INCORPORATED

April 12, 2002

Charlie Nehrig
Photocircuits Corporation
31 Sea Cliff Avenue
Glen Cove, NY 11542

RE: Light Hydrocarbon Gases Analyses for Photocircuits Samples from 4/2-3/2002

Dear Charlie:

Attached are the analytical results for the light hydrocarbon gases - methane, acetylene, ethene, and ethane from the latest round of samples from the Photocircuits anaerobic bioremediation pilot. The samples were collected on April 2-3, 2002. Samples were not received from wells MW-7, MW-14, and SMP-4. Light hydrocarbon gases analyses were conducted in Terra Systems, Inc.'s laboratory according to a modification of US EPA SW 846 Method 8021B protocols. Acetylene was also detected in two samples at low concentrations. Acetylene can be produced from the reaction of TCE with ferrous sulfide.

Sincerely,
TERRA SYSTEMS, INC.
Michael D Lee PhD

Michael D. Lee, Ph.D.
Vice-President

cc: Andy Barber

1035 Philadelphia Pike, Suite E • Wilmington, Delaware 19809 • (302) 798-9553
Fax (302) 798-9554 • www.terrasystems.net

Terra Systems
INCORPORATED

Date: April 12, 2002

Light Hydrocarbon Gases Analyses

Client: Photocircuits Corporation
31 Sea Cliff Avenue
Glen Cove, NY 11542

Well: SMP-1
Date Sampled: 4/2/02
Matrix: Liquid

Analyte	Method Detection Limit	Concentration	Units	Qualifiers
Methane	0.7	2110	µg/L	
Acetylene	1.2	7.4	µg/L	
Ethene	1.3	800	µg/L	
Ethane	1.3	<1.3	µg/L	U

Well: DMP-1
Date Sampled: 4/2/02
Matrix: Liquid

Analyte	Method Detection Limit	Concentration	Units	Qualifiers
Methane	0.7	160	µg/L	
Acetylene	1.2	<1.2	µg/L	U
Ethene	1.3	160	µg/L	
Ethane	1.3	<1.3	µg/L	

Well: SMP-3
Date Sampled: 4/2/02
Matrix: Liquid

Analyte	Method Detection Limit	Concentration	Units	Qualifiers
Methane	0.7	2000	µg/L	
Acetylene	1.2	5.4	µg/L	
Ethene	1.3	220	µg/L	
Ethane	1.3	36	µg/L	

Well: DMP-3
Date Sampled: 4/2/02
Matrix: Liquid

Analyte	Method Detection Limit	Concentration	Units	Qualifiers
Methane	0.7	3850	µg/L	
Acetylene	1.2	<1.2	µg/L	U
Ethene	1.3	220	µg/L	
Ethane	1.3	16	µg/L	

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Well: DMP-4
Date Sampled: 4/2/02
Matrix: Liquid

Analyte	Method Detection Limit	Concentration	Units	Qualifiers
Methane	0.7	240	µg/L	
Acetylene	1.2	<1.2	µg/L	U
Ethene	1.3	150	µg/L	
Ethane	1.3	<1.3	µg/L	U

Well: MW-8
Date Sampled: 4/3/02
Matrix: Liquid

Analyte	Method Detection Limit	Concentration	Units	Qualifiers
Methane	0.7	<0.7	µg/L	U
Acetylene	1.2	<1.2	µg/L	U
Ethene	1.3	<1.2	µg/L	U
Ethane	1.3	<1.2	µg/L	U

Well: MW-12
Date Sampled: 4/3/02
Matrix: Liquid

Analyte	Method Detection Limit	Concentration	Units	Qualifiers
Methane	0.7	1670	µg/L	
Acetylene	1.2	<1.3	µg/L	U
Ethene	1.3	130	µg/L	
Ethane	1.3	11	µg/L	

Well: MW-13
Date Sampled: 4/3/02
Matrix: Liquid

Analyte	Method Detection Limit	Concentration	Units	Qualifiers
Methane	0.7	110	µg/L	
Acetylene	1.2	<1.2	µg/L	U
Ethene	1.3	<1.3	µg/L	U
Ethane	1.3	8.7	µg/L	

Terra Systems
INCORPORATED

Well: Trip Blank
Date Sampled: 4/3/02
Matrix: Liquid

Analyte	Method Detection Limit	Concentration	Units	Qualifiers
Methane	0.7	<0.7	µg/L	U
Acetylene	1.2	<1.2	µg/L	U
Ethene	1.3	<1.3	µg/L	U
Ethane	1.3	<1.3	µg/L	U

Qualifiers:
U Compound not detected
J Compound detected, but below method detection limits

Analyses were conducted according to a modification of EPA SW 846 Method 8021B by heating the samples in a Tekmar 7000/7050 Headspace autosampler for ten minutes and transferring a portion of the headspace to a Hewlett Packard 5890 Series II gas chromatograph equipped with a splitter going into two columns; a 30 m Supelco VOCOL 0.32 µM capillary column to separate and quantify the chlorinated compounds using an Electrolytic Conductivity Detector; and a 30 m Supelco PLOT 1006 0.32 µm capillary column to separate and quantify the light hydrocarbon gases (methane, acetylene, ethene, and ethane) using a flame ionization detector.

TERRA SYSTEMS, INC.

Michael D. Lee, Ph.D.
Laboratory Manager

Terra Systems
INCORPORATED

JANUARY 2002
STATUS REPORT
PHOTOCIRCUITS ACCELERATED ANAEROBIC BIOREMEDIATION PILOT

PREPARED FOR:

PHOTOCIRCUITS CORPORATION
31 SEA CLIFF AVENUE
GLEN COVE, NY 11542

PREPARED BY:

TERRA SYSTEMS, INC.
1035 PHILADELPHIA PIKE
SUITE E
WILMINGTON DE 19809

APRIL 12, 2002

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TABLE OF CONTENTS

FIGURES

TABLES

1.0 EXECUTIVE SUMMARY

In August 2000, Photocircuits Corporation initiated a pilot study at its 31 Sea Cliff Ave. property to treat chlorinated volatile organic compounds (VOC) using in situ anaerobic bioremediation. The site is characterized by VOC contamination of a sandy, silt, and gravel aquifer. Monitoring data indicate that some biodegradation of these contaminants was occurring at the site prior to the start of the pilot study. The two primary objectives of this pilot study are to 1) evaluate the use of substrate injection to enhance in situ anaerobic biological degradation of chlorinated VOCs in the study area and 2) obtain operating and performance data to optimize the design and operation of a full-scale system. During the operational period of this pilot study, there is no emphasis on reducing any contaminants to a specific regulatory level.

The study area, which encompasses a triangular area roughly 92 feet wide, 157 feet long, and 60 feet deep, underlies the former drum storage area of the Photocircuits Corporation facility. Prior to the start of the pilot test, total chlorinated contaminant concentrations in wells within the pilot area ranged from 457 to 539,000 µg/L. The bioremediation system consisted of six injection points in a line spaced about 15 to 20 feet apart. An edible oil substrate (EOS) package was designed to provide a slow release food grade carbon source over a period in excess of twelve months. The substrate concentrations were selected based on previous experience. VOC and substrate concentrations have been monitored six times over a 16 month period at eight wells spaced throughout the treatment area. VOC and substrate concentrations have also been monitored at four wells downgradient of the treatment area to determine if the substrate has migrated outside of the area and if the substrate amendment has affected these wells.

The system has been operating since August 31, 2000. Substrate monitoring data indicated that substrate was delivered throughout the treatment area with the highest substrate levels found in well MW-14. The emulsion moved into this well from several of the injection points and displaced much of the contaminated groundwater within this well. Contaminant levels have increased in MW-14 and MW-7. Desorption of contaminants adsorbed to the soil due to enhanced biological activity may be contributing to the increased contaminant concentrations in MW-14 and MW-7. Contaminants that partitioned into the injected oil may also be released. Where substrate levels were above 50 mg/L, significant declines in total VOC concentrations (13-95%) were generally observed. Degradation rates for the total VOCs (9/1/01 concentration minus 1/8/02 divided by 495 days) were as high as 394 µg/L-day (well SMP-3) in higher concentration areas with greater than 100,000 µg/L total volatiles. In areas with lower concentrations, total VOC degradation rates were lower, in the range of 2.8 (DMP-4) to 24 µg/L-day (DMP-1). There was no evidence of significant degradation product build-up in any other monitoring wells. Total contaminant concentrations within the pilot cell have fallen by 66% since September 2000.

A second injection of EOS is recommended to increase the availability of substrate throughout the contaminated zone.

2.0 INTRODUCTION

The enclosed report describes the field pilot study of *in situ* anaerobic bioremediation of a chlorinated solvent plume at the Photocircuits Corporation's 31 Sea Cliff Avenue, Glen Cove, NY facility. The study, which was initiated on August 31, 2000, has the following objectives:

- Determine if the addition of a food grade carbon source will enhance the extent and rate of chlorinated solvent biodegradation at the site.
- Determine the rate of chlorinated solvent biodegradation to estimate the time frame required for contaminant removal.
- Determine if the food grade carbon source can be adequately distributed in the formation such that the microorganisms can utilize it.
- Determine what role bioremediation technology has in the overall remediation strategy for the site.

There have been six groundwater sampling events during the course of the study. As of January 2002, the average total volatile contaminant concentrations within the pilot have decreased by 66%.

During the treatment period of 16 months, we have successfully demonstrated that the addition of a food grade carbon source will enhance the extent and rate of chlorinated solvent biodegradation at this site as indicated by the following observations:

- Total contaminant concentrations have decreased by an average 66%.
- The parent compound 1,1,1-trichloroethane has decreased by an average of 81%
- Two monitoring wells (MW-7 and MW-14) have increased in total volatile concentrations since September 1, 2000 by 652 to 4,529%. However, when viewed over the last 13 years, the total VOC concentrations in MW-7 have decreased 95%. Since 11/1/99, total VOC concentrations have decreased by 44% in MW-14.

It is difficult to determine the total contaminant mass present at this site because of the limited number of soil samples and limited definition of the vertical distribution of this contamination. The total contaminant mass was estimated to be approximately 1,195 pounds based upon the average soil concentrations found in the 1996 or earlier soil borings and a contaminated volume of 361,100 ft^3 (a triangular area 92 feet by 157 feet with a contaminated interval below the water table from 10 to 60 feet below ground surface).

Please note that the goal of this study has been to gather sufficient data to determine the rate and extent of chlorinated solvent biodegradation. If the study area could be isolated such that the contaminant mass did not receive any additional contaminants, Terra Systems, Inc. estimates that based upon the current degradation rates that approximately 90% of the total contaminant mass can be removed in 30 months. Although an acceptable remediation end point has not been defined for this site, the data suggests that this reduction will be environmentally acceptable since it significantly reduces the probability that chlorinated solvents will migrate off-site.

3.0 BACKGROUND

The Photocircuits Corporation's 31 Sea Cliff Avenue facility, Glen Cove, New York is located on the north shore of Long Island. The plant site is bordered on the north by a light industrial area, to the south and east are arterial roads, and to the west by railroad tracks. The site is generally flat and is covered by manufacturing buildings and parking lots.

3.1 Site Geology/Hydrology

Based on analysis of soil borings and details of well construction at the Photocircuits site, the surficial deposit below the facility is primarily composed of interbedded sand, silt, gravel, and clay layers.

3.2 Nature and Extent of Contamination

The groundwater at the facility has been impacted by chlorinated ethene and chlorinated ethane compounds from various sources. Prior to the start of the pilot test, total volatile organic contaminant concentrations (TVOC) in groundwater ranged from 457 to 539,000 µg/L. Generally, the contamination extends to approximately 90 below ground surface (bgs) with the highest concentrations in the 20 to 50 ft. bgs zone.

3.3 Rationale for Use of Technology

Photocircuits Corporation has been conducting a technology review to determine which remediation technology or technology treatment train will be most appropriate for this facility. Conventional pump-and-treat technologies have been excluded from this review since these technologies have limited applications for aquifer and groundwater restoration (Beeman et al 1993). Other technologies considered have been discussed in other reports submitted to the NYDEC.

Many of the currently utilized cleanup methods for chlorinated solvents employ physical processes that tend to transfer the compounds to another medium. Biological decomposition is one approach that has the potential for destroying hazardous chemicals so that they are rendered harmless for all time.

Semprini et al (1992) outlined the processes affecting movement and fate of halogenated aliphatics as:

1. Advection, the miscible transport in aqueous solution under the influence of the hydraulic potential gradient;
2. Dispersion, the mixing and spreading of concentration fronts, that arises largely from differential rates of movement along the myriad individual flow paths through the porous medium;
3. Sorption, the partitioning of a compound between the moving solution and the stationary solid phase;

4. Immiscible transport, the migration of slightly soluble chemicals as a separate liquid phase, often driven downward by density difference in the case of halogenated aliphatics; and
5. Diffusional transport, the slow migration of solute molecules into the matrix rock or dead-end pores under the influence of a concentration driving force.

Given the heterogeneity of the site and the lack of definitive knowledge of the amount of chlorinated solvents in the impacted area, a technology that can remove a significant amount of the solvents and continue to treat the remaining material is required. While physical technologies such as "pump-and-treat" systems can generally contain a contaminant plume and remove a limited amount of material, it has not been conclusively demonstrated that these technologies can remove a significant amount of the solvents. The USEPA (1996) has stated that

> "The general failure of the pump-and-treat approach was identified as its inability to achieve restoration (i.e., reduction of contaminants to levels required by health-based standards) in 5 to 10 years, as anticipated in the design phase of projects. Although a variety of factors contributed to this shortcoming, tailing and rebound (Section 4) represented the major barrier to achieving remediation goals."

Chemical technologies such as chemical oxidation have promise for removal of a significant portion of the contamination but have not been demonstrated to provide treatment for all of the solvents. For example, 1,1,1-Trichloroethane is resistant to potassium permanganate treatment (ITRC 2000). The chemical oxidants react rapidly with the contaminants and reduced minerals in the soil and do not provide a continuing impact on the contaminants.

As part of the technology review program, Photocircuits Corporation engaged Terra Systems, Inc. (TSI) to conduct an anaerobic bioremediation field pilot study at the facility. The study, which encompasses a triangular area roughly 92 feet wide and 157 long that had been used for drum storage, commenced in August-September, 2000. Eight monitoring points (MW-14, MW-7, SMP-1, DMP-1, SMP-3, DMP-3, SMP-4, and DMP-4) are being utilized to track the progress of the pilot study. Beginning in March 2001, groundwater samples were also collected from 4 additional wells (MW-8, MW-9, MW-12, and MW-13) to determine if any of the injected substrate had migrated away from the study area. It should be noted that these wells are not expected to be impacted by the bioremediation study. The locations of these wells are shown in Figure 1 with the exception of MW-9 that is further to the west.

Historical data indicates that anaerobic biodegradation is occurring at the site as evidenced by the presence of daughter products from the breakdown of tetrachloroethene (PCE) and trichloroethene (TCE) including cis-1,2-dichloroethene (cDCE), vinyl chloride (VC), and ethene. Acetylene can be produced by the abiotic reaction of PCE or TCE with ferrous sulfide (Butler and Hayes 2000). 1,1,1-Trichloroethane (1TCA) breaks down to 1,1-dichloroethene (1DCE), trans-1,2-dichloroethene (tDCE), 1,1-dichloroethane (1DCA), chloroethane (CA), and ethane. However, VC and ethene can also be generated from the breakdown of the 1TCA, 1DCA, and 1DCE. Based on a review of the site historical data, it appears that the biological degradation process is limited by the availability of organic carbon.

3.4 Technology Description

Anaerobic bioremediation, also referred to as reductive dechlorination, of chlorinated solvents is a well documented process that converts chlorinated ethenes and ethanes to innocuous gases.

The following technology description is from a report entitled "Cost and Performance Report – In Situ Anaerobic Bioremediation Pinellas Northeast Site Largo, Florida" prepared for the U.S. Department of Energy by Sandia National Laboratories and Hazardous Waste Remedial Actions Program.

Bacteria metabolize soluble organic and inorganic compounds to provide energy for the growth and maintenance of bacterial cells. The complex organic molecules that bacteria consume are converted to new cells and various simpler compounds, such as carbon dioxide, that are released back into the environment. This process is referred to as biodegradation. Biodegradation has been used very cost effectively for more than a century in public and industrial wastewater treatment systems. Since bacteria occur naturally in both soil and ground water environments, bioremediation technologies attempt to stimulate the activity of these naturally occurring (or introduced bacteria) to degrade contaminants in a cost-effective manner. Bioremediation is being considered more often as the processes that control the biological degradation of contaminants in soil and ground water become better understood.

In order to produce new bacterial cells, bacteria require carbon, nitrogen, phosphorus, and energy sources, as well as a number of trace minerals. Electrons are released by the biochemical reactions that metabolize complex organic compounds for energy. Biological systems capture this biochemical energy through a series of electron transfer (redox) reactions. The bacteria that are most commonly used in bioremediation systems use organic compounds as their source of carbon and energy; these carbon compounds are referred to as electron donors. Bacterial respiration requires that some chemical compound is available to act as a terminal electron acceptor. Common electron acceptors used by bacteria include oxygen, nitrate, sulfate, Fe^{3+}, and carbon dioxide.

Recently, a class of anaerobic bacteria has been identified that uses halogenated organic compounds as their electron acceptors. The chlorinated VOCs present in the soil and ground water at the Northeast site are among the halogenated organic compounds that can be used in this manner. Halogenated compounds have a high oxidation state; and when a halogen (e.g. chlorine) is chemically replaced by hydrogen, the oxidation state of the chemical is reduced. This process is referred to as reductive dehalogenation, and it forms the basis of the anaerobic process used by the in situ bacteria at the Northeast site. Under anaerobic conditions, chlorinated compounds can be degraded via reductive dehalogenation reactions to successively lower chlorinated degradation products, and finally to compounds of significantly lower toxicity. This process is illustrated for TCE below.

TCE $\rightarrow$ DCE $\rightarrow$ VC $\rightarrow$ ethene, ethane
step 1 step 2 step 3

Biological activity is frequently limited by the availability of a single growth factor (e.g. electron acceptor, electron donor, nitrogen, etc.) and supplying the proper growth factor can often

stimulate bacterial growth and biodegradation rates. For in situ bioremediation applications, nutrients or electron acceptors are often injected into the contaminated area to enhance the existing microbial degradation processes. Effectively delivering nutrients requires that factors such as site permeability and geochemistry be considered. Each class of contaminant varies in its susceptibility to biodegradation and factors such as aquifer oxidation-reduction potential, microbial ecology, and contaminant toxicity will affect the success of bioremediation at a site. The effective application of in situ bioremediation therefore depends upon careful consideration of the geologic and hydrologic properties at the site and on the type and concentration of contaminants to be treated.

Evaluations of the monitoring data from the Northeast Site suggested that microbial dechlorination is occurring naturally. DCE and vinyl chloride (VC) are degradation products of TCE that were measured in high concentrations but were not contaminants originally disposed of at the site, which suggests that a population of dechlorinating microorganisms is relatively active at Pinellas.

The report continues on to outline the technology advantages and disadvantages which are listed below:

Technology Advantages

- Contaminants are treated in situ with little waste generation
- Contaminant degradation can be relatively fast
- Bioremediation is capable of reducing contaminants to very low levels
- The process stimulates a microbial population that can continue to feed off the dissolved phase of a continuing source after nutrient injection ceases, and
- Often provides a low overall remediation cost relative to other technologies.

Technology Disadvantages

- Contaminant degradation enhancement is dependent on adequate nutrient delivery to all areas of contamination before the nutrients are directly metabolized, which often is primarily a function of site hydrogeology and the appropriate mixing of nutrients, contaminants, and active microbes,
- Site conditions (e.g. soil and ground water chemistry, reductive processes, etc.) must be conducive to the stimulation of biological activity to be effective,
- Bioremediation will not directly degrade contaminants occurring in an immiscible phase,
- High concentrations of contaminants often are toxic to microorganisms,
- Bioremediation may be difficult to optimize at sites with multiple contaminants of concern,
- Incomplete biodegradation of contaminants can lead to the generation of degradation products that are just as toxic or even more so than the parent contaminants, and
- Regulatory concerns over chemical injections into aquifers.

4.0 MATERIALS AND METHODS

4.1 Study Area

The study area encompasses a triangular area roughly 92 feet by 157 feet with a contaminated interval of 50 feet (from the water table at 10 feet to 60 feet) underlies the former drum storage area of the Photocircuits Corporation 31 Sea Cliff Ave, Glen Cove, NY facility. Eight monitoring points (MW-14, MW-7, SMP-1, DMP-1, SMP-3, DMP-3, SMP-4, and DMP-4) are being utilized to track the progress of the pilot study. Beginning in March 2001 groundwater samples were also collected from 4 additional wells (MW-8, MW-9, MW-12, and MW-13) to determine if the injected substrate had migrated away from the study area. It should be noted that these wells are not expected to be impacted by the bioremediation study.

4.2 Technical Challenges

The key technical challenges for this study are:

a. ability to move a carbon source throughout the contaminated area;
b. estimation of quantity of chlorinated compounds
c. determination of minimum level of TOC required to optimize reductive dechlorination

4.3 Key Design Criteria

The in situ anaerobic bioremediation pilot system was designed for two main objectives;

- develop a nutrient delivery system capable of providing a mixture of nutrients to the subsurface within the heterogeneous aquifer, such that the nutrients will be delivered to all levels in the treatment area within an approximately 24 month operating period, and
- deliver a sufficient quantity of substrate to the treatment area to last for approximately 24 months.

4.4 Treatment System Schematic and Operation

Figure 2 is a schematic of the pilot anaerobic biotreatment system showing the injection locations and the monitoring wells. In this system, the nutrients were distributed throughout the vertical extent of the treatment area by a Geoprobe® rig at the beginning of the pilot. The Geoprobe® pushed a drivepoint to about 50 feet bgs. The drill rod was pulled back two feet to inject the fluids under pressure with a Rupe pump. The rod was then withdrawn four feet and additional fluid was injected. This process continued until about 22 ft bgs. Approximately 3,500 gallons of soybean oil emulsion containing soybean oil, soybean lecithin, and tap water treated to remove chlorine was injected into five points. Forty gallons of soybean oil was injected at an additional point. In addition to pressure injection of the emulsion followed by injection of chase water to disperse the nutrients, natural groundwater flow has dispersed the substrate.

4.5 Operating Parameters

The major operating parameters needed to assess the performance and cost of the bioremediation system were considered to be substrate concentrations and substrate longevity.

4.6 Materials

The test area was injected with emulsified soybean oil in August 29 to September 1, 2000. The key objective of the pilot study is to determine if the addition of a food grade carbon source will enhance the extent and rate of chlorinated solvent biodegradation at the site. TSI formulated an emulsion containing soybean oil, lecithin (a soybean derivative that acts as an emulsifier), and water to provide required organic carbon. The soybean oil is broken down into smaller organic molecules and hydrogen that are then used by the dechlorinating bacteria.

5.0 RESULTS

The bioremediation pilot study at the Photocircuits Corporation site is being conducted to assess the applicability of substrate injection to accelerate the degradation of the chlorinated contaminants of concern and to identify optimal operating parameters. These data will be used to determine the expected costs and performance of a full-scale system at the site.

5.1 Demonstration Objectives and Approach

The objectives of the pilot in situ bioremediation project are as follows:

- Determine if the addition of a food grade carbon source will enhance the extent and rate of chlorinated solvent biodegradation at the site.
- Determine the rate of chlorinated solvent biodegradation to estimate the time frame required for contaminant removal.
- Determine if the food grade carbon source can be adequately distributed in the formation such that the microorganisms can utilize it.
- Determine what role bioremediation technology has in the overall cleanup strategy for the site.

5.2 Performance Evaluation Criteria

The performance criteria considered in evaluating this in situ anaerobic bioremediation system included:

- Substrate transport and utilization in the remediation study area,
- Contaminant degradation rates and the reduction in mass of the contaminants,
- Fate of chlorinated solvent degradation compounds, and
- Levels to which contaminants can be reduced.

The evaluation data were collected by a monitoring program of six field sampling events over a 16 month period.

5.3 Organization of Data

The analytical data from the pilot collected from each of the six sampling events are summarized in the following five tables.

- Table 1 presents the volatile organic data (VOCs), final biodegradation byproducts (ethene and ethane), important electron acceptors (total iron, sulfate, nitrate, and methane), and electron donor as represented by total organic carbon (TOC).

- Table 2 converts the concentrations of the chlorinated ethenes and chlorinated ethanes to micromolar units so that one unit of PCE is equivalent to one unit of TCE, cDCE, VC, and ethene. Similarly one unit of 1TCA is equivalent to one unit of 1DCE, tDCE, 1DCA, CA, or ethane.

- Table 3 summarizes the changes between the samples collected immediately after the oil emulsion injection and the samples collected sixteen months later for wells MW-14, MW-7, SMP-1, DMP-1, SMP-3, DMP-3, SMP-4, and DMP-4. Positive changes indicate that the concentrations of the analyte have decreased. A negative change indicates that the concentrations have increased. In a number of cases, the contaminants were not detected in the initial samples collected after emulsion injection or in the samples collected after sixteen months. In these cases, the percent change was calculated using the analyte detection limit and the percent changes are designated as greater than (>) or less than (<) the calculated change.

- Table 4 summarizes the changes between the samples collected on 3/28/01 and the samples collected on 1/9-12/02 for wells MW-8, MW-9, MW-12, and MW-13. As noted previously, it is not anticipated that these wells will be impacted during the study period.

- Table 5 summarizes the changes in the chloroethenes, chloroethanes, electron acceptors, and electron donor for all wells from the beginning of the pilot in August-September 2000 to January 2002.

5.4 Project To Date Results

The following table summarizes the status of the key performance measures for this project as of January, 2002. Details are described in subsequent sections..

Performance Measures	Values/Results
Treatment Volume: Soil Ground Water Treated:	 Approximately 70' X 90' X 60', 378,000 ft^3 Approximately 706,565 gallons
System substrate transport effectiveness:	Demonstrated distribution throughout pilot area
Substrate effectiveness:	Enhanced dechlorination
Substrate viability	Lasted for more than one year
Total volatile contaminant degradation rates; > 100 mg/L concentration levels 1 – 100 mg/L concentration levels	 394 µg/L-day 2.8 to 24 µg/L-day
Reduction of total contaminants of concern:	Achieved reductions of 13% to 95% except in MW-14 and MW-7
Chlorinated solvent degradation product production	General decline in all contaminants with some temporary increases in degradation products, followed by reduction of the degradation products themselves by biological degradation
Waste generated	None
Achievable contaminant reduction levels:	Estimated 90% within 30 months

5.4.1 Chlorinated Ethene Results

In the original group of monitoring wells, cis-1,2-DCE and VC were the predominant chlorinated ethenes with little of the parent compounds, PCE or TCE, being detected except for TCE in

SMP-1 in December 2000 through January 2002. Concentrations greater than 1,000 ug/L of chlorinated ethenes were initially only detected in SMP-1 and DMP-3. TCE concentrations have increased in SMP-1 and to a lesser extent in MW-7. The increases may be a result of dissolution of PCE or TCE from a source zone and subsequent biodegradation or an inadequate supply of substrate. There were increases in cDCE and/or VC concentrations in MW-14, MW-7, SMP-1, DMP-1, and SMP-3 from 3/28/01 to 1/8/02. cDCE and VC concentrations have declined between 7/11/01 and 1/8/02 in wells MW-7, DMP-1, SMP-3, and DMP-3. We expect that the VC will decrease as it is converted to ethene. Because cDCE was not detected in SMP-1 in March 2001, but was found in July 2001, we suspect an analytical error in the sample from March 2001. Low levels of acetylene, an abiotic degradation product from the reaction of PCE or TCE with ferrous sulfide, were detected in wells MW-14 and SMP-3.

As previously discussed, the goal of the process is to convert PCE into ethene because the ethene is considered to be environmentally acceptable. Ethene has not been associated with long-term toxicological problems and is a natural occurring plant hormone (Sims et al 1991). Unfortunately, given the field conditions, it is difficult to conduct a material balance. Ethene may be converted to carbon dioxide, ethane, or another product. Ethene may also be transported away with the groundwater, or production of ethene may have slowed due to some limitation on the microbial population including lack of substrate, insufficient nutrients, or lower concentrations of the parent compounds.

Ethene concentrations in January 2002 increased in wells MW-14, MW-7, SMP-3, and SMP-4 from the initial levels observed on 8/31/00-9/1/00. Ethene concentrations for the other four wells of the original group were lower than measured initially. The continued presence of ethene in all of the wells in the pilot area shows that complete dechlorination of the chlorinated ethenes is occurring. Ethene increased in MW-12 and has not been detected in the other supplemental wells.

The addition of soybean oil emulsion has resulted in an increase in intermediate and final daughter products from the chlorinated ethenes in pilot area wells MW-14, MW-7, SMP-3, SMP-4, and MW-12. Wells DMP-1 and SMP-4 showed decreases in the parent or daughter products. Well SMP-1 has recently shown an increase in TCE and cDCE presumably as substrate has become limiting. Both VC and ethene concentrations are down in DMP-3. Well DMP-4 has ethene only.

In the supplemental group of monitoring wells sampled in March 2001, July 2001, and January 2002, three of the four wells had parent compounds PCE and/or TCE (MW-8, MW-12, and MW-13). Concentrations greater than 1,000 ug/L of chlorinated ethenes were detected in MW-12 only. Increases in the cDCE, VC, and ethene concentrations were noted in MW-12 concurrent with the reduction in the TCE concentrations. The very low levels of TCE in MW-8 have fallen by 46%. PCE, TCE, cDCE, and VC concentrations have increased in MW-13.

5.4.2 Chlorinated Ethane Results

The analytical data for the pilot test to date provides evidence for biodegradation of the chlorinated ethanes. Wells DMP-1, SMP-3, DMP-3, and SMP-4 had the highest initial

concentrations of total chlorinated ethanes with greater than 1,000 µg/L. 1TCA was the primary chlorinated ethane contaminant in wells SMP-3 and DMP-3. Reduced products such as 1,1-dichloroethane, chloroethane, and ethane predominated in wells MW-14, MW-7, SMP-1, DMP-1, SMP-4, and DMP-4.

Well SMP-3 has shown a 92% (178,000 µg/L to 14,500 µg/L) reduction in the 1TCA concentrations. Between 77% reduction (38,200 to 8,860 µg/L) and 57% (5,230 to 2,260 µg/L) reductions in the 1DCA concentrations were observed in SMP-3 and DMP-3 respectively. CA concentrations have declined by 97% in DMP-1 (3,290 to 97 µg/L). Based upon these results and laboratory studies currently underway with an anaerobic culture derived from the Photocircuits groundwater, we believe that direct utilization of 1TCA and 1DCA may be occurring rather than a reductive dechlorination reaction where daughter products are produced and degraded. Acetic acid has been reported as a byproduct of 1TCA degradation (Lee and Davis 2001). Alternatively, sulfides generated from the reduction of sulfate may be reacting abiotically with the 1TCA and 1DCA (Gander et al. 2001).

Well SMP-4 has shown decreases in the 1TCA, 1DCA, 1DCE, CA, and ethane concentrations over the sixteen months following injection of the oil emulsion. However, there was a rebound in concentrations of these compounds between December 2000 and January 2002. Higher concentrations of 1TCA and some daughter products were also observed in January 2002 for wells MW-14, MW-7, SMP-1, and DMP-1 than had been observed in September 2000. The release of VOCs adsorbed into the oil may be one explanation for these increases. A second potential explanation is the establishment of a concentration gradient that facilitates desorption from contaminated surfaces as a result of microbial stimulation.

Relatively low levels of 1TCA and daughter products were found in MW-12 and MW-13, which were first monitored for this program in March 2001. No chlorinated ethanes were found in MW-8 or MW-9. 1DCA, CA, and ethane concentrations have increased in MW-12, but tDCE, 2DCA, and 1DCE concentrations have fallen slightly. In MW-13, 1TCA concentrations have decreased slightly, but 1DCA, tDCE, and 1DCE concentrations have increased. The substrate injections have had little impact on the downgradient wells.

5.4.3 Other Organic Compounds Results

Several other organic compounds were detected in the groundwater including 1,2-dichloroethane, acetone, methylene chloride, 2-butanone, toluene, benzene, p-ethyltoluene, 1,3,5-trimethylbenzene, 2-chlorotoluene, 4-chlorotoluene 1,2,4-trimethylbenzene, naphthalene, o-xylene, n-propylbenzene, and methyl tert butyl ether (MTBE). Over the sixteen months of the pilot operation to date, acetone concentrations decreased by >99% in DMP-1, but increased in MW-14. Methylene chloride decreased in many wells with declines by as much as >96 percent in SMP-1, >97% in DMP-1, 96% in SMP-3, and >96% in DMP-3. Methylene chloride can also be anaerobically degraded. Toluene concentrations have declined in six wells, but increased in two wells (MW-14 and SMP-1). Toluene can be also degraded anaerobically. The addition of soybean oil may have little effect on its biodegradation of toluene as dechlorinators are probably not involved in the biotransformation of toluene. 2-Chlorotoluene concentrations declined in wells SMP-4 and DMP-4, but increased in MW-7 and DMP-1. 2-Chlorotoluene may be

biodegraded to toluene and potentially further under anaerobic conditions. MTBE was first detected at 9.0 µg/L in SMP-3 in July 2001. MTBE was found at levels up to 125 µg/L in DMP-3, SMP-1, SMP-3, and DMP-4 in January 2002. MTBE has not reached any of the downgradient wells. A plume of MTBE appears to be moving onto the Photocircuits site from somewhere upgradient as MTBE was not detected in analyses from September 2000 until July 2001.

Few of the other contaminants were found in the downgradient wells. 2-Chlorotoluene and 4-chlorotoluene have increased in MW-12 by 584% and 471% between 3/28/01 and 1/9/02. A low level of o-xylene was found in MW-12 in January 2002. Acetone, benzene, and 2-chlorotoluene were detected in MW-13 and have increased slightly.

5.4.4 Sum of VOAs

The sum of the concentrations of all of the contaminants in each well was calculated excluding the final degradation endproduct gases, ethene and ethane. The sum of the VOAs has declined by up to 95% in DMP-1 with large decreases in SMP-3 (89%) and DMP-4 (51%). More moderate declines were observed in SMP-4 (23%), SMP-1 (13%), DMP-3 (22%), and SMP-4 (28%). The sum of VOAs has increased by 4529% in MW-14 as the contaminated groundwater displaced during injection came back into the well and potentially as VOCs adsorbed into the oil were released. Increases in the sum of VOAs were also observed to a lesser degree in MW-7 (-33). The overall average of the sum of the volatiles has declined by 66% over the course of the pilot.

A first order degradation half-life of 301 days was calculated for the average total volatile contaminants within the pilot cell. Based upon this degradation rate, 90 percent of the total contaminants should be removed within 30 months.

The total volatiles in the downgradient wells outside of the influence of the substrate injection have fallen in MW-8, but increased in MW-12 and MW-13.

5.4.5 Substrate Distribution

The total organic carbon concentrations in January 2002 ranged from 1.67 mg/L in MW-7 to 2,630 mg/L in MW-14. Well MW-14 has had free-floating soybean oil in previous sampling events, but none was noted in the January 2002 sampling event. TOC levels were below 50 mg/L in January 2002 in the remaining wells. A substrate level of 50 mg/L TOC should provide sufficient carbon to support dechlorination and other electron accepting processes such as methanogenesis and sulfate-reduction. TOC levels have declined from the beginning of the pilot in wells MW-14 (89%), MW-7 (96%), SMP-1 (74%), DMP-1 (97%), SMP-3 (88%), DMP-3 (70%), SMP-4 (90%), and DMP-4 (58%). Additional substrate injection in the pilot area is warranted.

No detectable levels of TOC were found in the downgradient wells analyzed for this parameter in January 2002.

5.4.6 Electron Acceptor Results

As the microbes breakdown the emulsion, sulfate would be depleted and the concentrations of iron and methane would increase. Nitrate-nitrogen was present in January 2002 at low concentrations of <0.13 to 0.085 mg/L. and is a minor electron acceptor. The predominant electron acceptor in the groundwater in January 2002 was sulfate with concentrations that ranged from 146 mg/L in DMP-4 to 1,640 mg/L in SMP-3. Sulfate concentrations have declined from the initial concentrations in September 2000 in wells MW-14 (92%), DMP-1 (96% from 23,500 to 1,200 mg/L) as would be expected with consumption of the oil emulsion. However, sulfate levels have increased in MW-7, SMP-1, SMP-3, DMP-3, SMP-4, and DMP-4 over the course of the pilot. There does not appear to be sufficient substrate available to remove the sulfate. Total iron concentrations within the pilot in January 2002 ranged from 5.39 mg/L in SMP-3 to 279 mg/L in MW-14, which indicated that iron is also an important electron acceptor. Total iron concentrations have increased in two of the eight wells in the pilot area. The drop in dissolved iron concentrations in the other wells may be due to precipitation of the ferrous iron with sulfide produced from the utilization of sulfate. During the most recent sampling event in January 2002, methane was detected in all wells with methanogenic conditions (>1,000 µg/L) in MW-14, MW-7, SMP-1, SMP-3, DMP-3, and SMP-4. Methane concentrations have increased in six wells in the pilot area between September 2000 to January 2001.

Well MW-8 appears to be under aerobic conditions based upon the presence of nitrate and sulfate, and the low levels of iron and methane. This well is largely uncontaminated. While MW-9 has little organic contamination, it appears to have been impacted by the biodegradation processes upgradient as it has elevated iron and methane levels. Well MW-12 is under methanogenic conditions based upon the elevated methane levels. Iron and sulfate are also high in MW-12. Methane concentrations are lower in MW-13 and there is little iron. Nitrate and sulfate are present suggesting that this well is under nitrate-reducing conditions.

6.0 DISCUSSION

Previous studies have demonstrated the anaerobic dechlorination of PCE using aquifer solids and water in the laboratory (Parsons et al. 1985, Scholz-Muramatsu et al. 1995, and DiStefano et al. 1991). Previous field studies have also demonstrated the anaerobic dechlorination of PCE (Beeman et al. 1994, Ellis et al. 2000). Therefore, microbial reductive dehalogenation is a potential remedial mechanism for halogenated compounds in groundwater aquifers.

The objective of the technology is to convert PCE into ethene. The produced ethene is considered to be environmentally acceptable, because ethene has not been associated with long-term toxicological problems and is a natural occurring plant hormone (Sims et al. 1991). Furthermore, ethene is known to further biodegrade to carbon dioxide under aerobic environmental conditions (Beeman et al 1994).

VC has been thought to persist in anaerobic environments and to be more toxic to bacteria than the parent compounds (Barrio-Lage et al. 1991). However, subsequent work has clearly established that VC is biodegraded to ethene and ethane. The pattern of increase and disappearance of DCE and VC is suggestive of microbial succession.

Conditions continue to be favorable for accelerated anaerobic biodegradation of the chlorinated solvents at the Photocircuits site based upon the following positive results from the pilot to date including:

- decreases in the parent compound concentrations observed in many wells, particularly the large drops in the 1TCA and 1DCA concentrations in wells SMP-3 and DMP-3
- increases in the daughter products including final products ethene and ethane in many of the wells.
- good distribution of substrate and its consumption
- prevalence of reducing conditions based upon the removal of sulfate and the production of dissolved iron and methane

As a result of the high utilization of the substrate in the area of wells SMP-3, DMP-3, SMP-4, and DMP-4, we recommend that additional emulsified oil be injected into the pilot area. We also recommend that the monitoring program be modified to include one sampling event immediately after substrate injection and one sampling event three months later. Based upon the positive results we have seen in the zone from 10 to 50 feet below ground surface, we believe that this technology should also be applicable to the intermediate and deeper zones.

7.0 CONCLUSIONS

Although the pilot study is an on-going program, there is now sufficient data to facilitate a comparison of the project to date results with the project's objectives. The following summary presents the project objectives in bold with the results.

Determine if the addition of a food grade carbon source will enhance the extent and rate of chlorinated solvent biodegradation at the site.

The overall average of the sum of the volatiles has declined by 66% over the course of 16 months. Increases in intermediate and final daughter products from the chlorinated ethenes and ethanes have been observed in all of the primary monitoring wells.

Degradation rates for the total VOCs are as high as 394 ug/L per day in higher concentration areas. In areas with lower total volatile concentrations, degradation rates range from 2.8 to 24 ug/L per day.

Determine the rate of chlorinated solvent biodegradation to estimate the time frame required for contaminant removal.

A first order degradation half-life of 301 days was calculated for the average total volatile contaminants within the pilot cell. Based upon this degradation rate, 90% of the total contaminants should be removed within 30 months.

Determine if the food grade carbon source can be adequately distributed in the formation such that the microorganisms can utilize it.

Total organic carbon (TOC) levels in excess of 50 mg/L were established in all eight of the primary monitoring wells in the study area. The TOC levels after system start up ranged from 39 mg/L to 23,500 mg/L. TOC levels have declined from the beginning of the pilot in wells MW-14 (89%), MW-7 (96%), SMP-1 (74%), DMP-1 (97%), SMP-3 (88%), DMP-3 (70%), SMP-4 (90%), and DMP-4 (58%). Although it is not possible to do a mass balance because of site conditions, evidence of primary contaminant reduction combined with increases in intermediate and final daughter products strongly suggests that the TOC decreases are a result of biological utilization.

Determine what role bioremediation has in the overall remediation strategy for the site.

Based on the results to date, it appears that bioremediation can cost effectively destroy the contaminants in an acceptable time frame. As a consequence, it appears that bioremediation will be the primary treatment technology for contaminant destruction at this site.

The one unexplained observation is the increase in contaminant concentrations in MW-14 and MW-7. There are several potential reasons for the increased concentrations: 1) desorption of contaminants adsorbed to the soil due to enhanced biological activity may be contributing to the

increase; or 2) contaminated groundwater displaced during the injection process could be moving back into the well. We are working to understand this phenomenon.

A second injection of EOS is recommended to increase the availability of substrate throughout the contaminated zone.

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8.0 REFERENCES

Barrio-Lage, G. A., F. Z. Parsons, R. M. Narbaitz, P. A. Lorenzo, and H. E. Archer. 1990. Enhanced anaerobic biodegradation of vinyl chloride in ground water. *Environ. Toxicol. Chem.* 9:403-415.

Beeman, R. E., S. H. Shoemaker, J. E. Howell, E. A. Salazar, and J. R. Buttram. 1994. A field evaluation of in situ microbial reductive dehalogenation by the biotransformation of chlorinated ethenes. In R. E. Hinchee, A. Leeson, L. Semprini, and S. K. Ong, ed., *Bioremediation of Chlorinated and Polycyclic Aromatic Hydrocarbon Compounds*, Lewis Publishers, Boca Raton, FL. pp. 14-27.

Butler, E. C. and K. F. Hayes. 2000. Kinetics of the transformation of halogenated aliphatic compounds by iron sulfide. *Environ. Sci. Technol.* 34(3):422-429.

DiStefano, T. D., J. M. Gossett, and S. H. Zinder. 1991. Reductive dehalogenation of high concentrations of tetrachloroethene to ethene by an anaerobic enrichment culture in the absence of methanogenesis. *Appl. Environ. Microbiol.* 57(8):2287-2292.

Ellis, D. E., E. J. Lutz, J. M. Odom, R. J. Buchanan, M. D. Lee, C. L. Bartlett, M. R. Harkness, K. A. DeWeerd. 2000. Bioaugmentation for accelerated in situ anaerobic bioremediation. *Environmental Science and Technology*34(11):2254-2260.

Gander, J. W. G. F. Parkin, and M. M. Scherer. 2001. Geomicrobiological interactions among iron sulfide minerals and methanogenic consortia. In Situ and On-Site Bioremediation Poster Abstracts. Sixth International Symposium, June 4-7, 2001. San Diego, CA. Section C8.

Interstate Technology and Regulatory Cooperation Work Group (ITRC). 2001. *Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminated Soil and Groundwater.* Prepared by the In Situ Chemical Oxidation Work Group, June.

Lee, M. D. and J. W. Davis. 2000. Natural remediation of chlorinated organic compounds. In Swindoll, M., R. G. Stahl, Jr. and S. J. Ells, editors. *Natural Remediation of Environmental Contaminants: Its Role in Ecological Risk Assessment and Risk Management.* SETAC Press, Pensacola FL. p. 199-245.

Parsons, F., G. B. Lage, and R. Rice. 1985. Biotransformation of chlorinated organic solvents in static microcosms. *Environ. Toxicol. Chem.* 4:739-742.

Scholz-Muramatsu, A. Neumann, M. Meβmer, E. Moore, and G. Diekert. 1995. Isolation and characterization of *Dehalospirillum multivorans* gen., sp. nov., a tetrachloroethene-utilizing, strictly anaerobic bacterium. *Arch. Microbiol.* 163:48-56.

Semprini, L., Grbic-Galic, D., McCarty, P.L, and Roberts, P.V., 1992. Methodologies for Evaluating In-situ Bioremediation of Chlorinated Solvents. EPA/600/R-92/042.

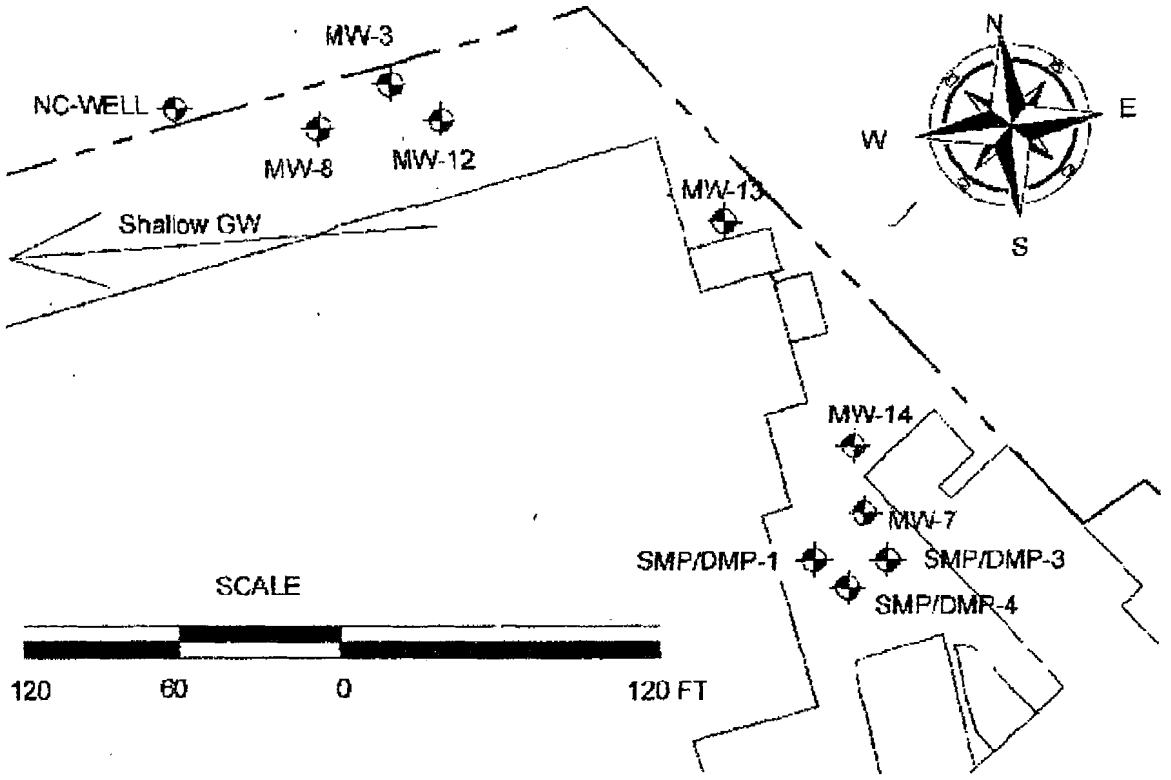
Sims, J. L., J. M. Suflita, and H. R. Russell. 1991. *Reductive Dehalogenation of Organic Contaminants in Soils and Ground Water.* EPA/540/4-90/054. Superfund Technology Support Center for Ground Water, U. S. EPA, Ada, OK.

U.S. Department of Energy. 1998. Cost and Performance Report - In Situ Anaerobic Bioremediation, Pinellas Northeast Site, Largo, Florida. Innovative Treatment Remediation Demonstration. April 1998. Sandia National Laboratories, Albuquerque, NW and Hazardous Waste Remedial Actions Program, Oak Ridge, TN. 33 p.

United States Environmental Protection Agency. 1996. "Pump-and-Treat Ground-Water Remediation, A Guide for Decision Makers and Practitioners", EPA/625/R-95/005, July, 1996, p.2.

FIGURES

Figure 1. Site Map Showing Monitoring Wells



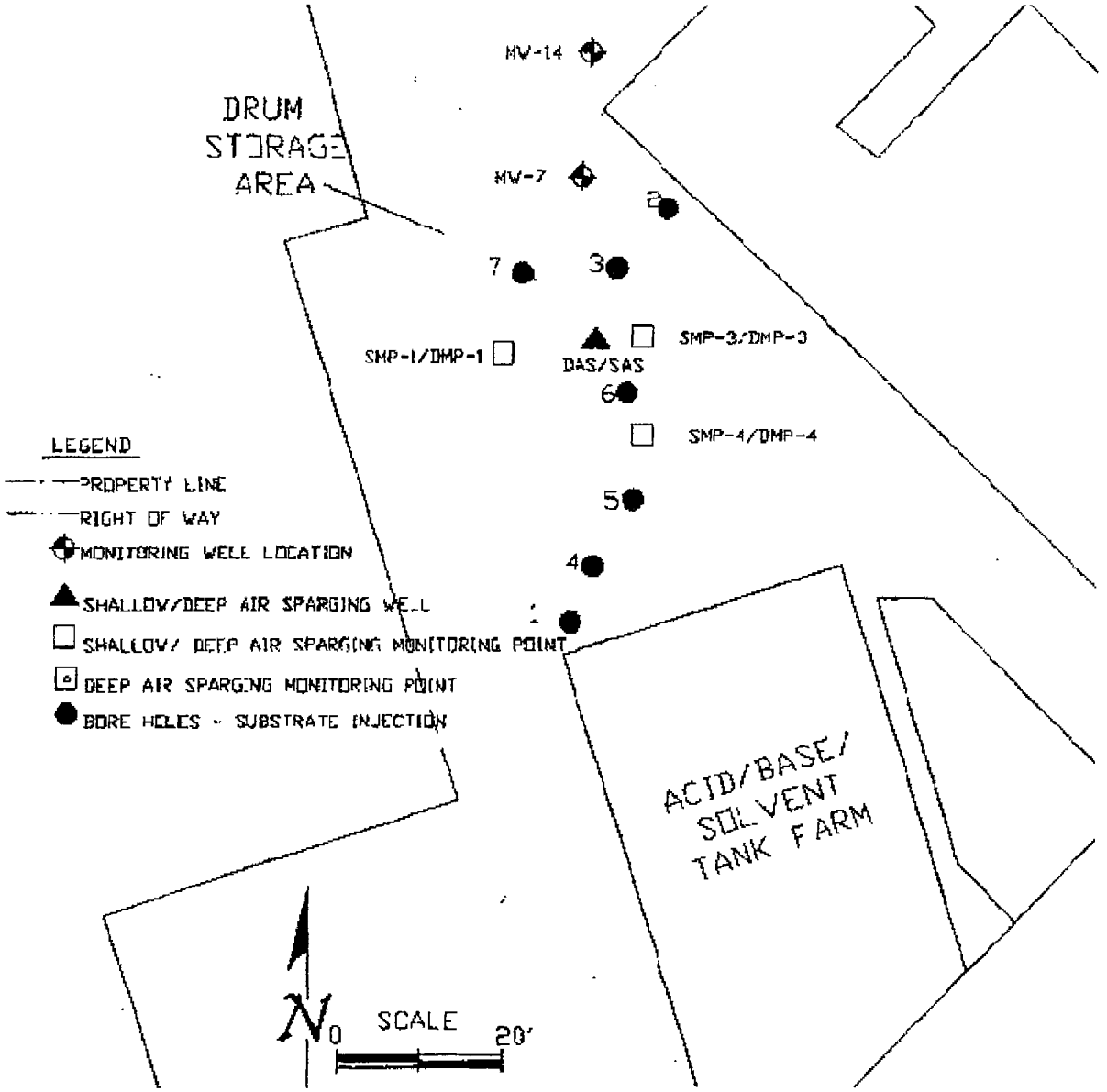


Figure 2. Site Map Showing Injection Points and Monitoring Wells Within Cell

TABLES

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		MW-14						MW-7						SMP-1					
Date		8/31/00	10/19/00	12/20/00	3/28/01	7/11/01	1/8/02	8/31/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02	8/31/00	10/18/00	12/20/00	3/27/01	7/11/01	1/3/02
Days		0	49	111	209	314	495	0	49	111	208	314	495	0	48	111	208	314	495
Tetrachloroethene	µg/L		<1.4	<0.40	<5.5	<4.0	<2.4	<0.40	<0.56	<0.40	<2.2	<0.20	<0.12	<16	<0.40	<22	<5.5	<2.0	<6.0
Trichloroethene	µg/L	<0.85	<1.35	<0.85	<10	<3.4	<3.4	<0.85	19.3	<0.85	<4	16	2.7	<34	79	860	1530	25.3	4410
cis-1,2-Dichloroethene	µg/L	<0.95	<1.7	<0.95	<15	<2.8	<3.6	47.3	283	355	149	187	8.3	24900	37500	30100	<0.27	12300	18000
Vinyl Chloride	µg/L	<1.75	10.6	<1.75	114	145	173	39.3	67.1	139	60	63.9	10.5	4710	5990	5090	4770	4230	3490
Ethene	µg/L	43	47	60	65	130	90	63	170	110	33	94	110	930	2400	1140	900	1890	650
Acetylene	µg/L						5.7						<1.2						<11
1,1,1-Trichloroethane	µg/L	14.4	<1.7	8.9	994	2040	1520	<0.55	<0.62	<0.55	<4	<0.16	<0.14	<22	<0.55	<34	356	158	<7.0
1,1-Dichloroethane	µg/L	126	216	293	9230	18800	14100	122	214	268	135	207	193	506	486	628	708	536	456
trans-1,2-Dichloroethene	µg/L	<1.35	<1.40	<1.35	<11	<2.8	<5.8	<1.35	<0.56	<1.35	<4.4	2.6	2.1	<54	69.9	<40	132	34.5	68.5
1,2-Dichloroethane	µg/L	<0.80	<0.95	<0.80	<10	34.2	<3.2	<0.80	<0.38	<0.80	<4	<0.13	3.7	<32	<0.80	<17	<10	<1.3	<8.0
1,1-Dichloroethene	µg/L	<1.05	6.3	<1.05	443	751	542	<1.05	<0.96	<1.05	<3.6	1.9	<0.22	<42	64.3	<27	184	55.1	143
Chloroethane	µg/L	15.6	<1.25	<1.65	132	298	501	258	181	201	160	269	390	<72	71.6	<53	<15	<1.8	<33.5
Ethane	µg/L	52	69	48	34	66	49	<6	130	81	34	71	68	<6	<6	<25	<25	<25	<12
Acetone	µg/L	97.8	170	126	<74	551	986	<9.45	52.2	<9.45	<29.6	18.5	<2.3	<378	<9.45	<166	<74	<14.4	<115
Methylene Chloride	µg/L	15.1	<1.50	<1.0	220	156	134	12.8	6.0	<1	51.6	3.9	8.0	482	43.1	<56	<20.5	11.9	<18.5
2-Butanone	µg/L	124	75.3	<5.1	<125	863	344	<5.1	<1.64	<5.1	<50	<6.25	17.2	<204	<5.1	<68	<125	<62.5	<860
Toluene	µg/L	3.0	<0.80	<0.80	<7.5	32.4	25	6.2	8.4	8.3	<3	8.6	0.95	<32	61.1	<19	126	51.4	55
Benzene	µg/L	<0.70	<0.70	<0.70	<5	<2.6	<3.4	4.0	3.5	<0.7	<2	2.8	6.5	<28	4.40	<34	<5	<1.3	<8.5
p-Ethyltoluene	µg/L	<1.2	<1.05	<1.2	<8	<4.4	<4.8	<1.2	<0.68	<1.2	<3.2	<0.22	<0.24	<48	<1.2	<20	<8	11.3	<12
1,3,5-Trimethylbenzene	µg/L	<0.60	<1.50	<0..60	<17	<2.2	<2.4	<0.60	<0.60	<0.6	<6.8	<0.11	<0.12	<24	<0.60	<20	<17	<1.1	<6.0
2-Chlorotoluene	µg/L	<0.85	<1.35	<0.85	<10.5	<3.2	<4.2	<0.85	5.2	<0.85	<4.2	6.3	8.4	<34	16.3	<25	<10.5	47.3	<10.5
1,2,4-Trimethylbenzene	µg/L	<0.65	<1.25	<0.65	<11	<4.4	<2.6	<0.65	<0.50	<0.65	<4.4	1.2	0.93	<26	<0.65	<0.65	<11	15.7	<6.5
Naphthalene	µg/L	<1.35	<0.90	<1.35	<9.5	<8.2	<5.4	<1.35	<0.36	<1.35	<3.8	1.2	<0.27	<54	<1.35	<16	<9.5	21.2	<13.5
o-Xylene	µg/L	<0.40	<1.35	<0.40	<8	<3.2	<3.2	<0.40	<0.54	<0.4	<3.2	1.1	<0.16	<16	<0.40	<18	<8	11.4	<8.0
n-Propylbenzene	µg/L	<0.70	<1.40	<0.70	<10.5	<6.2	<2.8	<0.70	<0.56	<0.7	<4.2	<0.31	<0.14	<28	<0.70	<17	<10.5	<3.1	<7.0
Methyl T-Butyl Ether	µg/L	<1.25	<1.15	<1.25	<14	<1.6	<3.6	<1.25	<0.46	<1.25	<5.6	<0.080	<0.18	<50	<1.25	<25	<14	<0.80	117
Sum VOAs (w/o Gases)	µg/L	396	478	428	11133	23671	18325	490	840	971	556	791	652	30598	44386	36678	7806	17509	26740
Methane	µg/L	44	58	380	1800	6400	8050	660	1900	760	1050	5930	5050	3400	6200	2500	2060	3400	1100
Iron, Total	mg/L	55.2	13.2	69	197	188	279	2.22	1.84	3.93	6.72	8.78	13.1	19.8	11.6	15.1	11.1	29.9	16.4
Sulfate	mg/L	5470	779	32.6	307	1270	441	104	117	264	203	68.9	949	236	360	443	813	905	732
Nitrate-Nitrogen	mg/L		0.15	0.17	<0.025	<0.0015	<0.13		<0.015	0.023	0.029	0.017	0.085		0.054	0.071	12.3	0.016	<0.13
Total Organic Carbon	mg/L	23500	868	1990	2590	3530	2630	38.8	53.1	60	72.9	58.5	1.67	91.7	83.4	88	59.7	45.9	23.8

Terra Systems

Table 1 continued. Photocircuits Anaerobic Pilot Analytical Summary

Date		8/31/00	10/18/00	12/20/00	3/27/01	7/11/01	1/8/02	9/1/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02	9/1/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02
Days		0	48	111	208	314	495	0	49	111	208	314	495	0	49	111	208	314	495
Tetrachloroethene		<0.40	<0.080	<0.40	<5.5	<1.0	<0.60	<80	<80	<8	13.7	12.2	<6.0	<16	60.5	<4.0	<1.1	72.3	34
Trichloroethene	µg/L	<0.85	<0.17	<0.85	<10	4.5	<0.85	<170	<170	<17	<0.2	<1.7	<8.5	<34	<13.5	<8.5	<2	8.6	<8.5
cis-1,2-Dichloroethene	µg/L	50.4	1.70	17.4	73.5	38.4	<0.90	<190	<190	<19	2.3	16.4	<9.0	<38	<17	<9.5	<3	14.9	<9.0
Vinyl Chloride	µg/L	188	3.5	40	125	42.7	<4.25	<350	<350	<35	38.8	98.8	<42.5	1040	928	818	145	785	654
Ethene	µg/L	560	1080	920	690	110	93	84	98	39	18	110	180	430	450	310	290	490	360
Acetylene	µg/L						<1.2						2.1						<1.2
1,1,1-Trichloroethane	µg/L	<0.55	<0.11	<0.55	193	28.1	<0.70	178000	235000	32600	33700	13100	14500	19700	14300	23400	793	24000	19500
1,1-Dichloroethane	µg/L	91.8	17.6	357	1130	1320	423	38200	47800	4770	<0.5	17600	8860	5230	4860	4200	764	3250	2260
trans-1,2-Dichloroethene	µg/L	<1.35	<0.27	<1.35	<11	<0.70	<1.4	<270	<270	<27	<0.22	<1.4	<14	<54	<14	<13.5	<2.2	<1.4	<14
1,2-Dichloroethane	µg/L	<0.80	<0.16	<0.80	<10	14.9	<0.80	<160	<160	<16	6	20.6	<8.0	<32	<9.5	<8.0	<2	25.4	<8.0
1,1-Dichloroethene	µg/L	<1.05	<0.21	<1.05	<9	<0.70	<1.10	<210	<210	<21	<0.27	164	146	156	<24	<10.5	<1.8	168	<11
Chloroethane	µg/L	3290	43.4	232	159	193	97	<330	<330	<33	76.6	411	346	5370	6970	3760	729	6630	2260
Ethane	µg/L	<6	<6	<50	<100	<50	0.8	39	45	41	23	29	17	5.7	9.4	44	12	8.2	8.6
Acetone	µg/L	8670	139	557	<74	1150	<11.5	<1890	<1890	<189	3690	536	<115	<378	<65	<94.5	<14.8	<14.4	<115
Methylene Chloride	µg/L	68.3	1.40	22.4	191	32.8	<01.85	2400	<200	<20	14.6	122	89	436	149	<10	31.8	58.7	<18.5
2-Butanone	µg/L	<5.1	<1.02	5.1	<125	<31.3	<86	<1020	<1020	<102	<2.5	<62.5	<860	<204	<41	<51	<25	<62.5	<860
Toluene	µg/L	36.5	2.80	24.1	40.5	9.1	<0.70	<160	<160	<16	31.7	96.5	54.5	232	134	103	15.7	140	108
Benzene	µg/L	<0.70	<0.14	5.5	<5	<0.65	<0.85	<140	<140	<14	<0.1	20.6	<8.5	<28	<7.0	<7.0	<1	<1.3	<8.5
p-Ethyltoluene	µg/L	2.9	<0.24	<1.2	<8	<1.1	<1.2	<240	<240	<24	<0.16	<2.2	<12	<48	<17	<12	<1.6	9.9	<12
1,3,5-Trimethylbenzene	µg/L	2.8	<0.12	<0.60	<17	<0.55	<0.60	<120	<120	<12	0.63	<1.1	<6.0	<24	<15	<6	<3.4	<1.1	<6.0
2-Chlorotoluene	µg/L	23.7	<0.17	18.2	<10.5	33.7	79.7	<170	<170	<17	5.1	<1.6	<10.5	<34	<13.5	<8.5	<2.1	51.5	<10.5
1,2,4-Trimethylbenzene	µg/L	8.4	0.77	8.4	<11	4.8	4.7	<130	<130	<13	<0.22	<2.2	<6.5	<26	<12.5	<6.5	<2.2	17	<6.5
Naphthalene	µg/L	3.1	<0.27	<1.35	<9.5	<2.05	<1.35	<270	<270	<27	<0.19	<4.1	<13.5	<54	<9.0	<13.5	<1.9	<4.1	<13.5
o-Xylene	µg/L	<0.40	<0.080	<0.40	<8	<0.80	<0.80	<80	<80	<8	<0.	<1.4	<8.0	<16	<13.5	<4.0	<1.6	<1.6	<8.0
n-Propylbenzene	µg/L	<0.70	<0.14	16.9	<10.5	<1.55	<0.70	<140	<140	<14	<0.21	<3.1	<7.0	<28	<14.0	<7.0	<2.1	<3.1	<7.0
Methyl T-Butyl Ether	µg/L	<1.25	<0.25	<1.25	<14	<0.40	<0.90	<250	<250	<25	<0.28	9.0	117	<50	<11.5	<12.5	<2.8	<0.80	125
Sum VOAs (w/o Gases)	µg/L	12436	210	1304	1912	2872	604	218600	282800	37370	37579	32207	24113	32164	27402	32281	2479	35231	24941
Methane	µg/L	8200	23000	10300	4660	730	330	100	140	44	36	500	1020	390	890	800	930	870	1400
Iron, Total	µg/L	88.5	4.45	3.1	21.7	8.65	15.9	50.6	5.91	69.6	3.92	32.5	5.39	60.4	66.8	74.3	20.8	77.5	39.0
Sulfate	mg/L	29600	37.7	179	715	1420	1200	286	392	154	53.7	1050	1640	124	186	137	94.6	173	188
Nitrate-Nitrogen	mg/L		0.20	0.024	0.05	0.019	<0.13		<0.015	0.53	0.037	<0.015	<0.13		0.93	0.35	0.073	0.0030	<0.13
Total Organic Carbon	mg/L	299	224	137	132	54.5	8.14	294	432	22.7	48.1	176	34.4	98.2	88.6	104	27.8	51.8	29.6

Terra Systems

Table 1 continued. Photocircuits Anaerobic Pilot Analytical Summary

Well		SMP-4						DMP-4						MW-8			MW-9		
Date		9/1/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02	9/1/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02	3/28/01	7/12/01	1/8/02	3/28/01	7/12/01	1/8/02
Days		0	48	110	207	313	494	0	48	110	207	313	494	0	314	494	0	314	494
Tetrachloroethene	µg/L	13.2	<5.6	<0.80	<5.5	9.3	32	<0.40	<0.080	<0.080	<0.11	<2.0	<1.2	<0.11	<0.20	<0.12	<0.11	<0.20	<0.24
Trichloroethene	µg/L	<0.85	<5.4	<1.7	<10	<1.7	<3.4	<0.85	<1.70	<0.17	<0.20	<1.7	<1.7	1.8	1.7	0.97	<0.20	<0.17	<0.16
cis-1,2-Dichloroethene	µg/L	143	<6.8	<1.9	<15	10.8	<3.6	<0.95	<1.90	<0.19	<0.30	<1.4	<1.8	<0.30	1.2	<0.18	<0.30	<0.14	<0.21
Vinyl Chloride	µg/L	175	34.6	37.6	72.5	111	126	<1.75	<3.50	<0.35	2.9	<0.70	<8.5	<0.25	<0.070	<0.85	<0.25	<0.070	<0.10
Ethene	µg/L	220	190	220	170	160	340	250	260	220	160	<6	230	<6	<6	<1.3	<6	<6	
Acetylene	µg/L						<1.2						<1.2			<1.2			
1,1,1-Trichloroethane	µg/L	3150	246	997	3100	2610	2700	56.3	130	<0.11	15.3	18.4	<1.4	<0.20	<0.16	<0.14	<0.20	<0.16	<0.22
1,1-Dichloroethane	µg/L	4070	1740	1180	2230	3270	2890	29.7	20.1	<0.14	50.1	30.0	16.3	<0.14	<0.12	<0.25	<0.14	<0.12	<0.22
trans-1,2-Dichloroethene	µg/L	<1.35	<5.6	<2.7	<11	<1.4	<5.6	<1.35	<2.70	<0.27	3.4	<1.4	<2.8	<0.22	<0.14	<0.28	<0.22	<0.14	<0.20
1,2-Dichloroethane	µg/L	26.2	<3.8	<1.6	<10	19.7	<3.2	<0.80	<1.60	<0.16	8.7	<1.3	<1.6	<0.20	<0.13	<0.16	<0.20	<0.13	<0.23
1,1-Dichloroethene	µg/L	105	<9.6	<2.1	<9	48.2	130	<1.05	<2.10	<0.21	<0.18	<1.4	<2.2	<0.18	<0.14	<0.22	<0.18	<0.14	<0.30
Chloroethane	µg/L	1220	827	3000	1590	945	776	2420	2580	3300	3680	2680	1210	<0.30	<0.18	<0.67	<0.3	<0.18	<0.61
Ethane	µg/L	<6	<6	39	<10	<10	2.4	<6	<6	37	<6	<6	2.4	<6	<6	<1.3	<6	<6	
Acetone	µg/L	<9.4	<26	<18.9	<74	<14.4	<46	<9.45	<18.9	<1.89	58.4	<14.4	<23	<1.48	<1.44	<2.3	<1.48	<1.44	<3.12
Methylene Chloride	µg/L	295	123	<2	278	127	66.8	22.8	16.6	3.9	19.8	20.8	8.4	<0.41	<0.15	<0.37	<0.41	<0.15	<0.54
2-Butanone	µg/L	<5.1	<16.4	<10.2	<125	<62.5	<344	<5.1	<10.2	<1.02	<2.5	<62.5	<172	<2.5	<6.25	<17.2	<2.5	<6.25	<5.0
Toluene	µg/L	116	37.6	25.5	<7.5	48.2	69.6	11	7.5	3.1	6.1	<1.4	6.9	<0.15	<0.14	<0.14	<0.15	<0.14	<0.14
Benzene	µg/L	<0.70	<2.8	<1.4	<5	<1.3	<3.4	<0.70	<1.40	<0.14	<0.10	<1.3	<1.7	<0.10	<0.13	<0.17	<0.10	<0.13	<0.16
p-Ethyltoluene	µg/L	4.8	<6.8	<2.4	<8	<2.2	<4.8	3.7	<2.40	<0.24	1.2	<2.2	<2.4	<0.16	<0.22	<0.24	<0.16	<0.22	<0.24
1,3,5-Trimethylbenzene	µg/L	3.2	<6.0	<1.2	<17	<1.1	<2.4	9.2	<1.20	2.5	3.4	<1.1	<1.2	<0.34	<0.11	<0.12	<0.34	<0.11	<0.20
2-Chlorotoluene	µg/L	45.5	<5.4	<1.7	<10.5	21.4	<4.2	64.5	44.5	17.1	31.6	31.9	34.2	<0.21	<0.16	<0.21	<0.21	<0.16	<0.27
1,2,4-Trimethylbenzene	µg/L	8.6	<5.0	<1.3	<11	<2.2	<2.6	18.3	15.9	5.3	<0.22	9.2	9.0	<0.22	<0.22	<0.13	<0.22	<0.22	<0.17
Naphthalene	µg/L	<1.35	<3.6	<2.7	<9.5	<4.1	<5.4	4.3	<2.70	<0.27	1.6	<4.1	<2.7	<0.19	<0.41	<0.27	<0.19	<0.41	<0.14
o-Xylene	µg/L	<0.40	<5.4	<0.8	<8	<1.6	<3.2	4.8	<0.80	<0.008	5.0	<1.6	<1.6	<0.16	<0.16	<0.16	<0.16	<0.16	<0.20
n-Propylbenzene	µg/L	<0.70	<5.6	<1.4	<10.5	<3.1	<2.8	44.3	<1.40	<0.14	<0.21	<3.1	<1.4	<0.21	<0.31	<0.14	<0.21	<0.31	<0.21
Methyl T-Butyl Ether	µg/L	<1.25	<4.6	<2.5	<14	<0.80	<3.6	<1.25	<2.4	<0.25	<0.28	<0.80	21.9	<0.28	<0.080	<0.18	<0.28	<0.080	<0.34
Sum VOAs (w/o Gases)	µg/L	9376	3008	5240	7271	7221	6790	2689	2815	3332	3888	2790	1307	1.8	2.9	1.0	0.0	0.0	0.0
Methane	µg/L	450	470	1100	3650	1800	2600	180	210	190	300	<6	250	<6	61	9.1	300	940	
Iron, Total	mg/L	76.2	38.9	47.1	54.5	41.2	17.8	48.2	39.2	42.5	85.4	116	31.6	0.023	0.088	<0.096	10.4	21.9	
Sulfate	mg/L	933	470	435	1700	1910	1630	133	171	98.5	209	323	146	22.6	23.4	27.4	4.43	23.1	
Nitrate-Nitrogen	mg/L		<0.015	0.31	0.19	0.037	<0.13		0.22	0.31	0.17	<0.015	<0.13	6.1	5.63	6.93	<0.025	<0.015	
Total Organic Carbon	mg/L	73.6	60.4	<0.94	34.6	46.5	31.0	43.7	52.4	50.9	34.6	35.7	7.1	4.97	<0.94	<0.94	7.98	6.79	

Table 1 continued. Photocircuits Anaerobic Pilot Analytical Summary

Well		MW-12			MW-13		
Date		3/28/01	7/12/01	1/9/02	3/28/01	7/12/01	1/10/02
Days		0	106	287	0	106	288
Tetrachloroethene	µg/L	<0.11	<0.20	<0.24	82.8	120	216
Trichloroethene	µg/L	122	0.93	16.5	85.9	114	216
cis-1,2-Dichloroethene	µg/L	1280	18.2	430	784	897	1950
Vinyl Chloride	µg/L	244	5.7	298	38.6	58.6	112
Ethene	µg/L	6.7	69	180	<6	<6	1.6
Acetylene	µg/L						<1.2
1,1,1-Trichloroethane	µg/L	<0.20	<0.16	<0.22	40	36.7	32.2
1,1-Dichloroethane	µg/L	72.2	3.7	329	323	351	476
trans-1,2-Dichloroethene	µg/L	7.3	<0.14	5.6	3.6	4.7	11.9
1,2-Dichloroethane	µg/L	2.9	<0.13	1.4	2.6	2.3	2.8
1,1-Dichloroethene	µg/L	8.4	<0.14	2.3	60.6	60.4	75.5
Chloroethane	µg/L	<0.30	<0.18	6.1	<0.30	<0.18	<0.61
Ethane	µg/L	<6	13	22	5.8	6.7	23
Acetone	µg/L	<1.48	<1.44	<3.12	<1.48	<1.44	18.7
Methylene Chloride	µg/L	<0.41	<0.15	<0.54	<0.41	<0.15	<0.54
2-Butanone	µg/L	<2.5	<6.25	<5.0	<2.5	<6.25	<5.0
Toluene	µg/L	0.97	<0.14	5.6	<0.15	<0.14	<0.14
Benzene	µg/L	5.3	<0.13	5.4	7.1	7.1	8.0
p-Ethyltoluene	µg/L	<0.16	<0.22	<0.24	<0.16	<0.22	<0.24
1,3,5-Trimethylbenzene	µg/L	<0.34	<0.11	<0.20	<0.34	<0.11	<0.20
2-Chlorotoluene	µg/L	393	26.9	2690	16.3	43.2	76.4
4-Chlorotoluene	µg/L	14.5	<0.17	82.8			
1,2,4-Trimethylbenzene	µg/L	<0.22	<0.22	<0.17	<0.22	<0.22	<0.17
Naphthalene	µg/L	<0.19	<0.41	<0.14	<0.19	<0.41	<0.14
o-Xylene	µg/L	<0.16	<0.16	2.3	<0.16	<0.16	<0.20
n-Propylbenzene	µg/L	<0.21	<0.31	<0.21	<0.21	<0.31	<0.21
Methyl t-Butyl Ether	µg/L	<0.28	<0.080	<0.34	<0.28	<0.080	<0.34
Sum VOAs (w/o Gases)	µg/L	2151	55	3875	1445	1695	3196
Methane	mg/L	420	1800	2170	12	21	250
Iron, Total	mg/L	7.29	55.6	61.0	0.54	0.48	0.93
Sulfate	mg/L	417	824	418	597	579	648
Nitrate-Nitrogen	mg/L	<0.025	0.070	0.005	3.95	4.68	3.54
Total Organic Carbon	mg/L	33.3	36.6	<0.94	9.52	13.3	<0.94

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Table 2. Photocircuits Anaerobic Pilot Chlorinated Solvents in Micromolar Concentrations

Contaminant	Well	MW-14						MW-7					
Date		8/31/00	10/19/00	12/20/00	3/28/01	7/11/01	1/8/02	8/31/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02
Tetrachloroethene	µM		<0.0084	<0.0024	<0.033	<0.024	<0.014	<0.0024	<0.0034	<0.0024	<0.013	<0.0012	<0.00072
Trichloroethene	µM	<0.0065	<0.010	<0.0065	<0.076	<0.026	<0.026	<0.0065	0.15	<0.0065	<0.030	0.12	0.021
cis-1,2-Dichloroethene	µM	<0.0098	<0.018	<0.0098	<0.15	<0.029	<0.037	0.49	2.9	3.7	1.5	1.9	0.086
Vinyl Chloride	µM	<0.028	0.17	<0.028	1.8	2.3	2.8	0.63	1.1	2.2	1.0	1.0	0.17
Ethene	µM	1.5	1.7	2.1	2.3	4.6	3.2	2.3	6.1	3.9	1.2	3.4	3.9
Acetylene	µM						0.22						<0.046
1,1,1-Trichloroethane	µM	0.11	<0.013	0.067	7.5	15.3	11.4	<0.0041	<0.046	<0.0041	<0.030	<0.0012	<0.0010
1,1-Dichloroethane	µM	1.3	2.2	3.0	93.2	189.9	142.4	1.2	2.2	2.7	1.4	2.1	1.9
trans-1,2-Dichloroethene	µM	<0.014	<0.014	<0.014	<0.11	<0.021	<0.060	<0.014	<0.0058	<0.014	<0.045	0.027	0.022
1,2-Dichloroethane	µM	<0.0081	<0.0096	<0.0081	<0.10	0.35	<0.032	<0.0081	<0.0038	<0.0081	<0.040	<0.0013	0.037
1,1-Dichloroethene	µM	<0.011	0.065	<0.011	4.6	7.8	5.6	<0.011	<0.0099	<0.011	<0.037	0.020	<0.0023
Chloroethane	µM	0.24	<0.019	<0.026	2.0	4.6	7.8	4.0	2.8	3.1	2.5	4.2	6.0
Ethane	µM	1.7	2.3	1.6	1.1	2.2	1.6	<0.20	4.3	2.7	1.1	2.4	2.3

Contaminant	Well	SMP-1						DMP-1					
Date		8/31/00	10/18/00	12/20/00	3/27/01	7/11/01	1/8/02	8/31/00	10/18/00	12/20/00	3/27/01	7/11/01	1/8/02
Tetrachloroethene	µM	<0.096	<0.0024	<0.13	<0.033	<0.012	<0.036	<0.0024	<0.00048	<0.0024	<0.033	<0.0060	<0.0036
Trichloroethene	µM	<0.026	0.60	6.5	11.6	0.19	33.6	<0.0065	<0.0018	<0.0065	<0.076	0.034	<0.0065
cis-1,2-Dichloroethene	µM	257	387	310.63	<0.0028	127	186	0.52	0.018	0.179567	0.76	0.40	<0.0093
Vinyl Chloride	µM	75	96	81	76	68	56	3.0	0.056	0.640	2.0	0.68	<0.068
Ethene	µM	33	86	41	32	68	23	20	39	33	25	3.9	3.3
Acetylene	µM						<0.42						<0.046
1,1,1-Trichloroethane	µM	<0.16	<0.0041	<0.25	2.7	1.2	<0.052	<0.0041	<0.00082	<0.0041	1.4	0.21	<0.0052
1,1-Dichloroethane	µM	5.1	4.9	6.3	7.2	5.4	4.6	0.93	0.18	3.61	11	13	4.3
trans-1,2-Dichloroethene	µM	<0.56	0.72	<0.41	1.4	0.36	0.71	<0.014	<0.0028	<0.014	<0.11	<0.0072	<0.014
1,2-Dichloroethane	µM	<0.32	<0.0081	<0.17	<0.033	<0.033	<0.081	<0.0081	<0.0016	<0.0081	<0.10	0.15	<0.0081
1,1-Dichloroethene	µM	<0.43	0.66	<0.27	1.9	0.57	1.5	<0.011	<0.0022	<0.011	<0.093	<0.0071	<0.011
Chloroethane	µM	<1.1	1.1	<0.82	<0.23	<0.23	<0.52	51.0	0.67	3.60	2.5	3.0	1.5
Ethane	µM	<0.20	<0.20	<0.83	<0.83	<0.83	<0.40	<0.20	<0.20	<1.7	<3.3	<1.7	0.027

Table 2 continued. Photocircuits Anaerobic Pilot Chlorinated Solvents in Micromolar Concentrations

Contaminant	Well	SMP-3					DMP-3						
Date		9/1/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02	9/1/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02
Tetrachloroethene	µM	<0.48	<0.48	<0.048	0.083	0.074	<0.036	<0.097	0.36	<0.024	<0.0066	0.44	0.21
Trichloroethene	µM	<1.3	<1.3	<0.13	<0.0015	<0.013	<0.065	<0.26	<0.10	<0.065	<0.015	0.065	<0.065
cis-1,2-Dichloroethene	µM	<2.0	<2.0	<0.20	0.024	0.17	<0.093	<0.39	<0.18	<0.098	<0.031	0.15	<0.093
Vinyl Chloride	µM	<5.6	<5.6	<0.56	0.62	1.6	<0.68	17	15	13	2.3	12.6	10.5
Ethene	µM	3.0	3.5	1.4	0.64	3.9	6.4	15.4	16.1	11.1	10.4	17.5	12.9
Acetylene	µM						0.081						<0.046
1,1,1-Trichloroethane	µM	1334	1762	244	253	98	109	148	107	175	5.9	180	146
1,1-Dichloroethane	µM	386	483	48	<0.0051	178	89	53	49	42	7.7	32.8	22.8
trans-1,2-Dichloroethene	µM	<2.8	<2.8	<0.28	<0.0023	<0.014	<0.14	<0.56	<0.14	<0.14	<0.023	<0.014	<0.14
1,2-Dichloroethane	µM	<1.6	<1.6	<0.16	0.061	0.21	<0.081	<0.32	<0.096	<0.081	<0.020	0.26	<0.081
1,1-Dichloroethene	µM	<2.2	<2.2	<0.22	<0.0028	1.7	1.5	1.6	<0.25	<0.11	<0.018	1.7	<0.11
Chloroethane	µM	<5.1	<5.1	<0.51	1.2	6.4	5.4	83	108	58	11	103	35
Ethane	µM	1.3	1.5	1.4	0.77	0.97	0.57	0.19	0.31	1.5	0.40	0.27	0.29

Contaminant	Well	SMP-4					DMP-4						
Date		9/1/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02	9/1/00	10/19/00	12/20/00	3/27/01	7/11/01	1/8/02
Tetrachloroethene	µM	0.080	<0.0034	<0.0048	<0.033	0.056	0.19	<0.0024	<0.00048	<0.00048	<0.00066	<0.012	<0.0072
Trichloroethene	µM	<0.0065	<0.041	<0.013	<0.076	<0.076	<0.076	<0.0065	<0.013	<0.013	<0.0015	<0.013	<0.013
cis-1,2-Dichloroethene	µM	1.5	<0.070	<0.0020	<0.15	0.11	<0.026	<0.0098	<0.020	<0.0020	<0.0031	<0.014	<0.019
Vinyl Chloride	µM	2.8	0.55	0.60	1.2	1.8	2.0	<0.028	<0.056	<0.0056	0.046	<0.011	<0.14
Ethene	µM	7.9	6.8	7.9	6.1	5.7	12.1	8.9	9.3	7.9	5.7	<0.21	8.2
Acetylene	µM						<0.046						<0.046
1,1,1-Trichloroethane	µM	24	1.8	7.5	23	20	20	0.42	0.97	<0.00082	0.11	0.14	<0.010
1,1-Dichloroethane	µM	41	18	12	23	33	29	0.30	0.20	<0.0014	0.51	0.30	0.16
trans-1,2-Dichloroethene	µM	<0.014	<0.058	<0.0028	<0.11	<0.014	<0.058	<0.014	<0.028	<0.0028	0.035	<0.014	<0.029
1,2-Dichloroethane	µM	0.26	<0.038	<0.016	<0.10	0.20	<0.032	<0.0081	<0.016	<0.0016	0.088	<0.013	<0.016
1,1-Dichloroethene	µM	1.1	<0.099	<0.022	<0.093	0.50	1.3	<0.011	<0.022	<0.0022	<0.0019	<0.014	<0.022
Chloroethane	µM	19	13	47	25	15	12	38	40	51	57	42	19
Ethane	µM	<0.20	<0.20	1.3	<0.33	<0.33	0.080	<0.20	<0.20	1.2	<0.20	<0.20	0.080

Table 2 continued. Photocircuits Anaerobic Pilot Chlorinated Solvents in Micromolar Concentrations

Contaminant	Well	MW-8			MW-9			MW-12			MW-13		
Date		3/28/01	7/12/01	1/8/02	3/28/01	7/12/01	1/8/02	3/28/01	7/12/01	1/9/02	3/28/01	7/12/01	1/10/02
Tetrachloroethene	µM	<0.00066	<0.0012	<0.00072	<0.00066	<0.0012	<0.0014	<0.00066	<0.0012	<0.0144	0.499	0.72	1.3
Trichloroethene	µM	0.014	0.013	0.0074	<0.0015	<0.0013	<0.0012	0.93	0.0071	0.13	0.65	0.87	1.6
cis-1,2-Dichloroethene	µM	<0.0031	0.012	<0.0019	<0.0031	<0.014	<0.0022	13.2	0.19	4.4	8.1	9.3	20.1
Vinyl Chloride	µM	<0.0040	<0.0011	<0.014	<0.0040	<0.0011	<0.0016	3.9	0.091	4.8	0.6	0.94	1.8
Ethene	µM	<0.21	<0.21	<0.046	<0.21	<0.21		0.24	2.5	6.4	<0.21	<0.21	<0.21
Acetylene	µM			<0.046						<0.046			<0.046
1,1,1-Trichloroethane	µM	<0.0015	<0.0012	<0.0010	<0.0015	<0.0012	<0.0016	<0.0015	<0.0012	<0.0016	0.30	0.28	0.24
1,1-Dichloroethane	µM	<0.0014	<0.0012	<0.0025	<0.0014	<0.0012	<0.0023	0.73	0.037	3.3	3.26	3.5	4.8
trans-1,2-Dichloroethene	µM	<0.0022	<0.0014	<0.0029	<0.0022	<0.0014	<0.0021	0.075	<0.0014	0.058	0.037	0.049	0.123
1,2-Dichloroethane	µM	<0.0020	<0.0013	<0.0016	<0.0020	<0.0013	<0.0023	0.029	<0.0013	0.014	0.026	0.023	0.028
1,1-Dichloroethene	µM	<0.0019	<0.0014	<0.0023	<0.0019	<0.0014	<0.0030	0.087	<0.0014	0.024	0.63	0.62	0.78
Chloroethane	µM	<0.0047	<0.0028	<0.010	<0.0047	<0.0028	<0.0095	<0.0047	<0.0047	0.26	<0.0047	<0.0025	<0.0095
Ethane	µM	<0.20	<0.20	<0.043	<0.20	<0.20		<0.20	0.43	0.73	0.19	0.22	0.77

Table 3. Photocircuits Anaerobic Pilot Percent Change Between 9/1/00 and 1/8/02

% Change Between 9/1/00 and 1/8/02								
Compound	MW-14	MW-7	SMP-1	DMP-1	SMP-3	DMP-3	SMP-4	DMP-4
Acetone	-908			>99				
Methylene Chloride	-787	38	>96	>97	96	>96	77	63
Toluene	-733	85	>-72	>98	>66	53	40	39
2-Chlorotoluene		>-888		-236			>91	47
Sum VOAs (w/o gases)	-4529	-33	13	95	89	22	28	51
Methane	-18195	-665	68	96	-920	-259	-478	-39
Iron	-405	-490	17	82	89	35	77	34
Sulfate	92	-813	-210	96	-473	-52	-75	-10
TOC	89	96	74	97	88	70	90	58
PCE						<-113	-142	
TCE		>-218	>-12871					
cDCE		82	28	>98			>97	
VC	>-9786	73	26	>98		37	28	
Ethene	-109	-75	30	83	-114	16	-55	8
1TCA	-10456				92	1	14	>98
1DCA	-11090	-58	10	-361	77	57	29	45
1DCE	>-51529		>-240		>30	>93	-24	
CA	-3112	-363		97	<-5	58	36	50
Ethane	6	>-1033		>87	56	-51	>60	>60

Table 4. Photocircuits Downgradient Wells Percent Change Between 3/28/00 and 1/8/02

% Change Between 3/28/00 and 1/8/02				
Compound	MW-8	MW-9	MW-12	MW-13
Acetone				>-1164
Methylene Chloride				
Toluene			-477	
2-Chlorotoluene			-584	-369
Sum VOAs (w/o gases)		46	-1809	-121
Methane		>-52	-417	-1983
Iron		>-317	-737	-72
Sulfate		-21	0	-9
TOC		>81	>97	>90
PCE				-161
TCE		46	86	-151
cDCE			66	-149
VC			-22	-190
Ethene			-2587	>73
1TCA				20
1DCA			-356	-47
1DCE			73	-25
CA			>-1933	
Ethane			>-267	-297

Table 5. Summary of Changes in Concentrations of Chloroethenes, Chloroethanes, Electron Acceptors, and Electron Donor by Well

Well	Chlorinated Ethene Dechlorination	Chlorinated Ethane Dechlorination	Electron Acceptors	Electron Donor Availability
MW-14	Ethene predominant, VC increasing since March 2001	1TCA, 1DCA, 1DCE, and CA, increased between December 2000 and January 2002 as contaminated displaced by emulsion moved back into well, ethane fairly stable	Sulfate decreased by 92%, methane and iron up greatly	TOC availability good
MW-7	Ethene generally predominant product, cDCE and VC down by 82 and 73% from start of pilot	1DCA and CA up, ethane produced	Sulfate increased from 69 to 949 mg/L from 7/11/01 to 1/8/02, methane and iron up greatly	TOC has fallen to 1.7 mg/L, below optimal levels
SMP-1	TCE up in January 2002, cDCE has declined by 28%, VC and ethene down from start of pilot as substrate became limiting	No 1TCA detected 1/8/02, 1DCA down, tDCE and 1DCE up, little CA or ethane	Sulfate increasing, methane down from start of test, and iron relatively stable	TOC decreasing, now below 25 mg/L, below optimal levels
DMP-1	cDCE and VC non-detect 1/8/02, ethene generally predominant product, but lower since December 2000	1TCA non-detect 1/8/02, 1DCA up 361%, CA down by 97%, no ethane detected	Sulfate down 96%, methane and iron also down	TOC decreasing, now below optimal levels
SMP-3	PCE, cDCE, and VC non-detect in January 2002, ethene predominant product and increasing	1TCA down by 92%, 1DCA down 77%, increasing 1DCE and CA, and some ethane	Sulfate increased between March 2001 (54 mg/L) and January 2002 (1,640 mg/L), methane increasing, and iron variable	TOC in January 2002 at 34 mg/L, below optimal levels
DMP-3	PCE detected 7/11/01 and 1/8/02, VC down 37%, ethene predominant	1TCA,1DCA, and CA rebounded between March and July 2001, ethane up slightly	Sulfate and methane increasing, iron decreasing	TOC decreasing, now below optimal levels
SMP-4	PCE up, cDCE, and VC down, ethene increased	1TCA,1DCA, and CA down, 1DCE rebounded, little ethane	Sulfate and methane increasing, iron down	TOC decreasing, now lower than optimal
DMP-4	No CE except ethene	1TCA, tDCE, and 1DCE non-detect 1/8/02, 1DCA decreasing, CA predominant product, but decreasing, little ethane	Sulfate up 10%, iron down, methane increased	TOC declining, now lower than optimal

Table 5 continued. Summary of Changes in Concentrations of Chloroethenes, Chloroethanes, Electron Acceptors, and Electron Donor by Well

Well	Chlorinated Ethene Dechlorination	Chlorinated Ethane Dechlorination	Electron Acceptors	Electron Donor Availability
MW-8	Low levels TCE and cDCE, no VC or ethene detected	No chlorinated ethanes or ethane detected	Little sulfate, iron, or methane	Little TOC available
MW-9	No chlorinated ethenes or ethene detected	No chlorinated ethanes or ethane detected	Low sulfate, some methane and iron	Little TOC available
MW-12	TCE and cDCE decreasing, VC and ethene increasing	1DCA increasing, tDCE, 2DCA, and 1DCE decreasing, CA and ethane detected	Sulfate, iron, and methane increased	TOC level below optimal level
MW-13	Increases in PCE, TCE, cDCE, and VC concentrations, trace ethene	Slight increases in 1TCA, 1DCA, tDCE, 2DCA, 1DCE, and ethane concentrations	Methane increased, iron and sulfate stable	Little TOC available

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01/18/2002

Custody Document: M6865

Received: 01/09/2002 16:16
Sampled by: David Hanny/Bryce Dingman

Client: Photo Circuits

31 Sea Cliff Avenue
Glen Cove,
NY 11542

Project: Photocircuits Corp.

31 Sea Cliff Avenue
Glen Cove,
NY

Manager: Andy Barber

Respectfully submitted,

Laboratory Manager

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
VA Cert. # 108
NH Cert. # 252592-BA
RI Cert. # 161

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-1

Client Sample ID: SMP-1

Collected: 01/08/2002 14:30

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 381-6452	12.0	12.0	ppb	U
75-45-6	Chlorodifluoromethane	C 381-6452	10.5	10.5	ppb	U
74-87-3	Chloromethane	C 381-6452	42.5	42.5	ppb	U
75-01-4	Vinyl Chloride	C 381-6452	42.5	**3490**	ppb	
74-83-9	Bromomethane	C 381-6452	32.5	32.5	ppb	U
75-00-3	Chloroethane	C 381-6452	33.5	33.5	ppb	U
75-69-4	Trichlorofluoromethane	C 381-6452	6.00	6.00	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 381-6452	9.50	9.50	ppb	U
75-35-4	1,1-Dichloroethene	C 381-6452	11.0	**143**	ppb	
67-64-1	Acetone	C 381-6452	115	115	ppb	U
75-15-0	Carbon disulfide	C 381-6452	16.5	16.5	ppb	U
75-09-2	Methylene Chloride	C 381-6452	18.5	18.5	ppb	U
156-60-5	t-1,2-Dichloroethene	C 381-6452	14.0	**68.5**	ppb	
1634-04-4	Methyl t-butyl ether	C 381-6452	9.00	**117**	ppb	
75-34-3	1,1-Dichloroethane	C 381-6452	12.5	**456**	ppb	
590-20-7	2,2-Dichloropropane	C 381-6452	15.0	15.0	ppb	U
156-59-2	c-1,2-Dichloroethene	C 386-6547	36.0	**18000**	ppb	
78-93-3	2-Butanone	C 381-6452	860	860	ppb	U
74-97-5	Bromochloromethane	C 381-6452	7.50	7.50	ppb	U
67-66-3	Chloroform	C 381-6452	11.0	11.0	ppb	U
71-55-6	1,1,1-Trichloroethane	C 381-6452	7.00	7.00	ppb	U
56-23-5	Carbon Tetrachloride	C 381-6452	5.00	5.00	ppb	U
563-58-6	1,1-Dichloropropene	C 381-6452	9.00	9.00	ppb	U
71-43-2	Benzene	C 381-6452	8.50	8.50	ppb	U
107-06-2	1,2-Dichloroethane	C 381-6452	8.00	8.00	ppb	U
79-01-6	Trichloroethene	C 381-6452	8.50	**4410**	ppb	B
78-87-5	1,2-Dichloropropane	C 381-6452	7.00	7.00	ppb	U
74-95-3	Dibromomethane	C 381-6452	8.00	8.00	ppb	U
75-27-4	Bromodichloromethane	C 381-6452	8.00	8.00	ppb	U
110-75-8	2-Chloroethylvinylether	C 381-6452	14.5	14.5	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 381-6452	11.0	11.0	ppb	U
108-10-1	4-Methyl-2-pentanone	C 381-6452	450	450	ppb	U
108-88-3	Toluene	C 381-6452	7.00	**55.0**	ppb	
10061-02-6	t-1,3-Dichloropropene	C 381-6452	7.00	7.00	ppb	U
79-00-5	1,1,2-Trichloroethane	C 381-6452	9.50	9.50	ppb	U
127-18-4	Tetrachloroethene	C 381-6452	6.00	6.00	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-1...continue

Client Sample ID: SMP-1

Collected: 01/08/2002 14:30

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 381-6452	6.00	6.00	ppb	U
591-78-6	2-Hexanone	C 381-6452	250	250	ppb	U
124-48-1	Dibromochloromethane	C 381-6452	8.50	8.50	ppb	U
106-93-4	1,2-Dibromoethane	C 381-6452	9.50	9.50	ppb	U
108-90-7	Chlorobenzene	C 381-6452	9.50	9.50	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 381-6452	7.50	7.50	ppb	U
100-41-4	Ethylbenzene	C 381-6452	8.00	8.00	ppb	U
108-38-3	m,p-xylene	C 381-6452	10.5	10.5	ppb	U
95-47-6	o-xylene	C 381-6452	8.00	8.00	ppb	U
100-42-5	Styrene	C 381-6452	6.50	6.50	ppb	U
75-25-2	Bromoform	C 381-6452	13.5	13.5	ppb	U
98-82-8	Isopropylbenzene	C 381-6452	5.00	5.00	ppb	U
108-86-1	Bromobenzene	C 381-6452	10.5	10.5	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 381-6452	7.50	7.50	ppb	U
103-65-1	n-Propylbenzene	C 381-6452	7.00	7.00	ppb	U
96-18-4	1,2,3-Trichloropropane	C 381-6452	12.0	12.0	ppb	U
622-96-8	p-Ethyltoluene	C 381-6452	12.0	12.0	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 381-6452	6.00	6.00	ppb	U
95-49-8	2-Chlorotoluene	C 381-6452	10.5	10.5	ppb	U
106-43-4	4-Chlorotoluene	C 381-6452	8.00	8.00	ppb	U
98-06-6	tert-Butylbenzene	C 381-6452	6.50	6.50	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 381-6452	6.50	6.50	ppb	U
135-98-8	sec-Butylbenzene	C 381-6452	4.00	4.00	ppb	U
99-87-6	4-Isopropyltoluene	C 381-6452	5.00	5.00	ppb	U
541-73-1	1,3-Dichlorobenzene	C 381-6452	7.50	7.50	ppb	U
106-46-7	1,4-Dichlorobenzene	C 381-6452	7.50	7.50	ppb	U
95-50-1	1,2-Dichlorobenzene	C 381-6452	7.00	7.00	ppb	U
105-05-5	p-Diethylbenzene	C 381-6452	13.5	13.5	ppb	U
104-51-8	n-Butylbenzene	C 381-6452	7.00	7.00	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 381-6452	13.5	13.5	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 381-6452	25.0	25.0	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 381-6452	12.5	12.5	ppb	U
87-68-3	Hexachlorobutadiene	C 381-6452	12.0	12.0	ppb	U
91-20-3	Naphthalene	C 381-6452	13.5	13.5	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 381-6452	19.0	19.0	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-1...continue

Client Sample ID: SMP-1

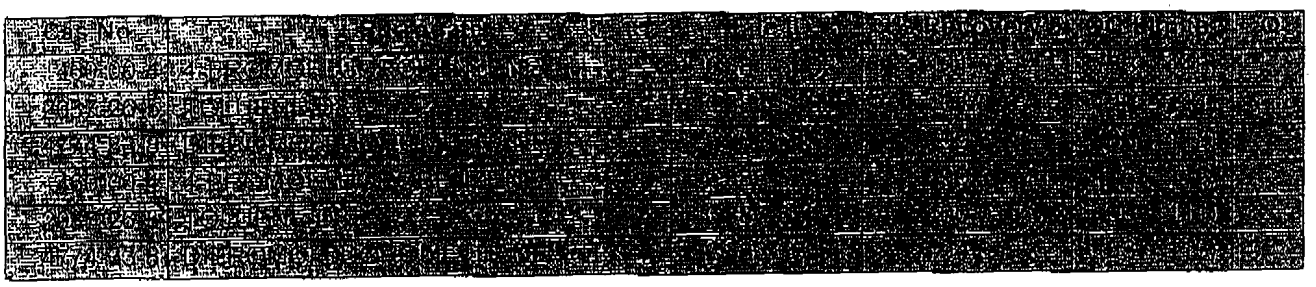
Matrix: Liquid

Type: Grab

Collected: 01/08/2002 14:30

Remarks: See Case Narrative

Analyzed Date: 01/11/2002



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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-2
Client Sample ID: DMP-1
Collected: 01/08/2002 12:30
Matrix: Liquid
Type: Grab
Remarks: See Case Narrative
Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 386-6548	1.20	1.20	ppb	U
75-45-6	Chlorodifluoromethane	C 386-6548	1.05	1.05	ppb	U
74-87-3	Chloromethane	C 386-6548	4.25	4.25	ppb	U
75-01-4	Vinyl Chloride	C 386-6548	4.25	4.25	ppb	U
74-83-9	Bromomethane	C 386-6548	3.25	3.25	ppb	U
75-00-3	Chloroethane	C 386-6548	3.35	**97.0**	ppb	
75-69-4	Trichlorofluoromethane	C 386-6548	0.60	0.60	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 386-6548	0.95	0.95	ppb	U
75-35-4	1,1-Dichloroethene	C 386-6548	1.10	1.10	ppb	U
67-64-1	Acetone	C 386-6548	11.5	11.5	ppb	U
75-15-0	Carbon disulfide	C 386-6548	1.65	1.65	ppb	U
75-09-2	Methylene Chloride	C 386-6548	1.85	1.85	ppb	U
156-60-5	t-1,2-Dichloroethene	C 386-6548	1.40	1.40	ppb	U
1634-04-4	Methyl t-butyl ether	C 386-6548	0.90	0.90	ppb	U
75-34-3	1,1-Dichloroethane	C 386-6548	1.25	**423**	ppb	
590-20-7	2,2-Dichloropropane	C 386-6548	1.50	1.50	ppb	U
156-59-2	c-1,2-Dichloroethene	C 386-6548	0.90	0.90	ppb	U
78-93-3	2-Butanone	C 386-6548	86.0	86.0	ppb	U
74-97-5	Bromochloromethane	C 386-6548	0.75	0.75	ppb	U
67-66-3	Chloroform	C 386-6548	1.10	1.10	ppb	U
71-55-6	1,1,1-Trichloroethane	C 386-6548	0.70	0.70	ppb	U
56-23-5	Carbon Tetrachloride	C 386-6548	0.50	0.50	ppb	U
563-58-6	1,1-Dichloropropene	C 386-6548	0.90	0.90	ppb	U
71-43-2	Benzene	C 386-6548	0.85	0.85	ppb	U
107-06-2	1,2-Dichloroethane	C 386-6548	0.80	0.80	ppb	U
79-01-6	Trichloroethene	C 386-6548	0.85	0.85	ppb	U
78-87-5	1,2-Dichloropropane	C 386-6548	0.70	0.70	ppb	U
74-95-3	Dibromomethane	C 386-6548	0.80	0.80	ppb	U
75-27-4	Bromodichloromethane	C 386-6548	0.80	0.80	ppb	U
110-75-8	2-Chloroethylvinylether	C 386-6548	1.45	1.45	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 386-6548	1.10	1.10	ppb	U
108-10-1	4-Methyl-2-pentanone	C 386-6548	45.0	45.0	ppb	U
108-88-3	Toluene	C 386-6548	0.70	0.70	ppb	U
10061-02-6	t-1,3-Dichloropropene	C 386-6548	0.70	0.70	ppb	U
79-00-5	1,1,2-Trichloroethane	C 386-6548	0.95	0.95	ppb	U
127-18-4	Tetrachloroethene	C 386-6548	0.60	0.60	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-2..,continue
Client Sample ID: DMP-1
Matrix: Liquid
Remarks: See Case Narrative
Analyzed Date: 01/15/2002

Type: Grab

Collected: 01/08/2002 12:30

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 386-6548	0.60	0.60	ppb	U
591-78-6	2-Hexanone	C 386-6548	25.0	25.0	ppb	U
124-48-1	Dibromochloromethane	C 386-6548	0.85	0.85	ppb	U
106-93-4	1,2-Dibromoethane	C 386-6548	0.95	0.95	ppb	U
108-90-7	Chlorobenzene	C 386-6548	0.95	0.95	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 386-6548	0.75	0.75	ppb	U
100-41-4	Ethylbenzene	C 386-6548	0.80	0.80	ppb	U
108-38-3	m,p-xylene	C 386-6548	1.05	1.05	ppb	U
95-47-6	o-xylene	C 386-6548	0.80	0.80	ppb	U
100-42-5	Styrene	C 386-6548	0.65	0.65	ppb	U
75-25-2	Bromoform	C 386-6548	1.35	1.35	ppb	U
98-82-8	Isopropylbenzene	C 386-6548	0.50	0.50	ppb	U
108-86-1	Bromobenzene	C 386-6548	1.05	1.05	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 386-6548	0.75	0.75	ppb	U
103-65-1	n-Propylbenzene	C 386-6548	0.70	0.70	ppb	U
96-18-4	1,2,3-Trichloropropane	C 386-6548	1.20	1.20	ppb	U
622-96-8	p-Ethyltoluene	C 386-6548	1.20	1.20	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 386-6548	0.60	0.60	ppb	U
95-49-8	2-Chlorotoluene	C 386-6548	1.05	79.7	ppb	
106-43-4	4-Chlorotoluene	C 386-6548	0.80	0.80	ppb	U
98-06-6	tert-Butylbenzene	C 386-6548	0.65	0.65	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 386-6548	0.65	4.70	ppb	
135-98-8	sec-Butylbenzene	C 386-6548	0.40	0.40	ppb	U
99-87-6	4-Isopropyltoluene	C 386-6548	0.50	0.50	ppb	U
541-73-1	1,3-Dichlorobenzene	C 386-6548	0.75	0.75	ppb	U
106-46-7	1,4-Dichlorobenzene	C 386-6548	0.75	0.75	ppb	U
95-50-1	1,2-Dichlorobenzene	C 386-6548	0.70	0.70	ppb	U
105-05-5	p-Diethylbenzene	C 386-6548	1.35	1.35	ppb	U
104-51-8	n-Butylbenzene	C 386-6548	0.70	0.70	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 386-6548	1.35	1.35	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 386-6548	2.50	2.50	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 386-6548	1.25	1.25	ppb	U
87-68-3	Hexachlorobutadiene	C 386-6548	1.20	1.20	ppb	U
91-20-3	Naphthalene	C 386-6548	1.35	1.35	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 386-6548	1.90	1.90	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-2...continue

Client Sample ID: DMP-1

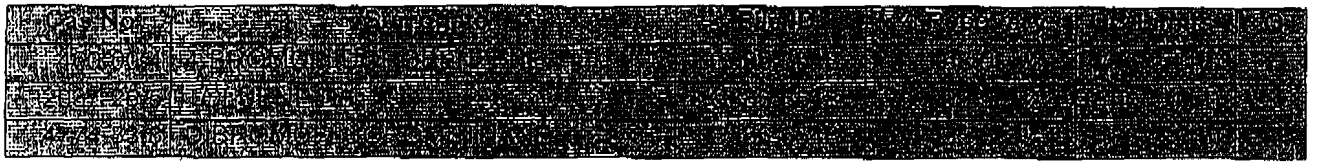
Matrix: Liquid

Type: Grab

Collected: 01/08/2002 12:30

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-3
Client Sample ID: SMP-3
Matrix: Liquid
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Collected: 01/08/2002 14:55
Type: Grab

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 381-6454	12.0	12.0	ppb	U
75-45-6	Chlorodifluoromethane	C 381-6454	10.5	10.5	ppb	U
74-87-3	Chloromethane	C 381-6454	42.5	42.5	ppb	U
75-01-4	Vinyl Chloride	C 381-6454	42.5	42.5	ppb	U
74-83-9	Bromomethane	C 381-6454	32.5	32.5	ppb	U
75-00-3	Chloroethane	C 381-6454	33.5	**346**	ppb	
75-69-4	Trichlorofluoromethane	C 381-6454	6.00	6.00	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 381-6454	9.50	9.50	ppb	U
75-35-4	1,1-Dichloroethene	C 381-6454	11.0	**146**	ppb	
67-64-1	Acetone	C 381-6454	115	115	ppb	U
75-15-0	Carbon disulfide	C 381-6454	16.5	16.5	ppb	U
75-09-2	Methylene Chloride	C 381-6454	18.5	**89.0**	ppb	
156-60-5	t-1,2-Dichloroethene	C 381-6454	14.0	14.0	ppb	U
1634-04-4	Methyl t-butyl ether	C 381-6454	9.00	**117**	ppb	
75-34-3	1,1-Dichloroethane	C 386-6549	25.0	**8860**	ppb	
590-20-7	2,2-Dichloropropane	C 381-6454	15.0	15.0	ppb	U
156-59-2	c-1,2-Dichloroethene	C 381-6454	9.00	9.00	ppb	U
78-93-3	2-Butanone	C 381-6454	860	860	ppb	U
74-97-5	Bromochloromethane	C 381-6454	7.50	7.50	ppb	U
67-66-3	Chloroform	C 381-6454	11.0	11.0	ppb	U
71-55-6	1,1,1-Trichloroethane	C 386-6549	14.0	**14500**	ppb	
56-23-5	Carbon Tetrachloride	C 381-6454	5.00	5.00	ppb	U
563-58-6	1,1-Dichloropropene	C 381-6454	9.00	9.00	ppb	U
71-43-2	Benzene	C 381-6454	8.50	8.50	ppb	U
107-06-2	1,2-Dichloroethane	C 381-6454	8.00	8.00	ppb	U
79-01-6	Trichloroethene	C 381-6454	8.50	8.50	ppb	U
78-87-5	1,2-Dichloropropane	C 381-6454	7.00	7.00	ppb	U
74-95-3	Dibromomethane	C 381-6454	8.00	8.00	ppb	U
75-27-4	Bromodichloromethane	C 381-6454	8.00	8.00	ppb	U
110-75-8	2-Chloroethylvinylether	C 381-6454	14.5	14.5	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 381-6454	11.0	11.0	ppb	U
108-10-1	4-Methyl-2-pentanone	C 381-6454	450	450	ppb	U
108-88-3	Toluene	C 381-6454	7.00	**54.5**	ppb	
10061-02-6	t-1,3-Dichloropropene	C 381-6454	7.00	7.00	ppb	U
79-00-5	1,1,2-Trichloroethane	C 381-6454	9.50	9.50	ppb	U
127-18-4	Tetrachloroethene	C 381-6454	6.00	6.00	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-3...continue

Client Sample ID: SMP-3

Collected: 01/08/2002 14:55

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 381-6454	6.00	6.00	ppb	U
591-78-6	2-Hexanone	C 381-6454	250	250	ppb	U
124-48-1	Dibromochloromethane	C 381-6454	8.50	8.50	ppb	U
106-93-4	1,2-Dibromoethane	C 381-6454	9.50	9.50	ppb	U
108-90-7	Chlorobenzene	C 381-6454	9.50	9.50	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 381-6454	7.50	7.50	ppb	U
100-41-4	Ethylbenzene	C 381-6454	8.00	8.00	ppb	U
108-38-3	m,p-xylene	C 381-6454	10.5	10.5	ppb	U
95-47-6	o-xylene	C 381-6454	8.00	8.00	ppb	U
100-42-5	Styrene	C 381-6454	6.50	6.50	ppb	U
75-25-2	Bromoform	C 381-6454	13.5	13.5	ppb	U
98-82-8	Isopropylbenzene	C 381-6454	5.00	5.00	ppb	U
108-86-1	Bromobenzene	C 381-6454	10.5	10.5	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 381-6454	7.50	7.50	ppb	U
103-65-1	n-Propylbenzene	C 381-6454	7.00	7.00	ppb	U
96-18-4	1,2,3-Trichloropropane	C 381-6454	12.0	12.0	ppb	U
622-96-8	p-Ethyltoluene	C 381-6454	12.0	12.0	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 381-6454	6.00	6.00	ppb	U
95-49-8	2-Chlorotoluene	C 381-6454	10.5	10.5	ppb	U
106-43-4	4-Chlorotoluene	C 381-6454	8.00	8.00	ppb	U
98-06-6	tert-Butylbenzene	C 381-6454	6.50	6.50	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 381-6454	6.50	6.50	ppb	U
135-98-8	sec-Butylbenzene	C 381-6454	4.00	4.00	ppb	U
99-87-6	4-Isopropyltoluene	C 381-6454	5.00	5.00	ppb	U
541-73-1	1,3-Dichlorobenzene	C 381-6454	7.50	7.50	ppb	U
106-46-7	1,4-Dichlorobenzene	C 381-6454	7.50	7.50	ppb	U
95-50-1	1,2-Dichlorobenzene	C 381-6454	7.00	7.00	ppb	U
105-05-5	p-Diethylbenzene	C 381-6454	13.5	13.5	ppb	U
104-51-8	n-Butylbenzene	C 381-6454	7.00	7.00	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 381-6454	13.5	13.5	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 381-6454	25.0	25.0	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 381-6454	12.5	12.5	ppb	U
87-68-3	Hexachlorobutadiene	C 381-6454	12.0	12.0	ppb	U
91-20-3	Naphthalene	C 381-6454	13.5	13.5	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 381-6454	19.0	19.0	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-3...continue

Client Sample ID: SMP-3

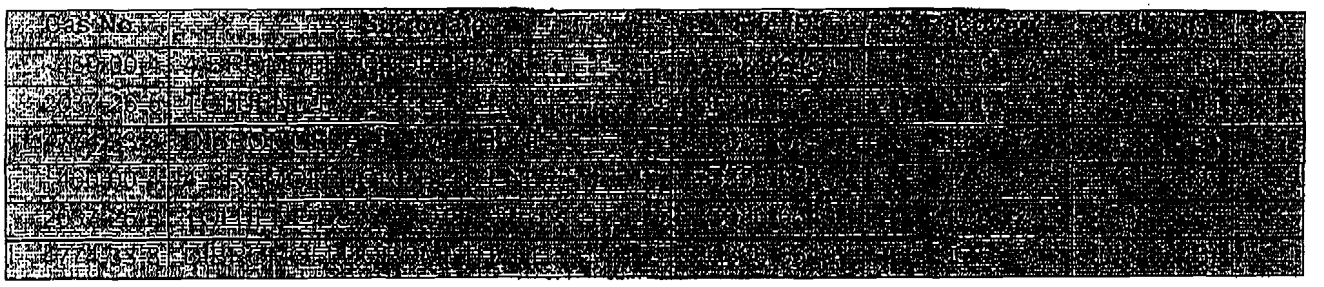
Collected: 01/08/2002 14:55

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002



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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-4

Client Sample ID: DMP-3 Collected: 01/08/2002 13:55

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 381-6455	12.0	12.0	ppb	U
75-45-6	Chlorodifluoromethane	C 381-6455	10.5	10.5	ppb	U
74-87-3	Chloromethane	C 381-6455	42.5	42.5	ppb	U
75-01-4	Vinyl Chloride	C 381-6455	42.5	**654**	ppb	
74-83-9	Bromomethane	C 381-6455	32.5	32.5	ppb	U
75-00-3	Chloroethane	C 381-6455	33.5	**2260**	ppb	
75-69-4	Trichlorofluoromethane	C 381-6455	6.00	6.00	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 381-6455	9.50	9.50	ppb	U
75-35-4	1,1-Dichloroethene	C 381-6455	11.0	11.0	ppb	U
67-64-1	Acetone	C 381-6455	115	115	ppb	U
75-15-0	Carbon disulfide	C 381-6455	16.5	16.5	ppb	U
75-09-2	Methylene Chloride	C 381-6455	18.5	18.5	ppb	U
156-60-5	t-1,2-Dichloroethene	C 381-6455	14.0	14.0	ppb	U
1634-04-4	Methyl t-butyl ether	C 381-6455	9.00	**125**	ppb	
75-34-3	1,1-Dichloroethane	C 381-6455	12.5	**2260**	ppb	
590-20-7	2,2-Dichloropropane	C 381-6455	15.0	15.0	ppb	U
156-59-2	c-1,2-Dichloroethene	C 381-6455	9.00	9.00	ppb	U
78-93-3	2-Butanone	C 381-6455	860	860	ppb	U
74-97-5	Bromochloromethane	C 381-6455	7.50	7.50	ppb	U
67-66-3	Chloroform	C 381-6455	11.0	11.0	ppb	U
71-55-6	1,1,1-Trichloroethane	C 386-6550	28.0	**19500**	ppb	
56-23-5	Carbon Tetrachloride	C 381-6455	5.00	5.00	ppb	U
563-58-6	1,1-Dichloropropene	C 381-6455	9.00	9.00	ppb	U
71-43-2	Benzene	C 381-6455	8.50	8.50	ppb	U
107-06-2	1,2-Dichloroethane	C 381-6455	8.00	8.00	ppb	U
79-01-6	Trichloroethene	C 381-6455	8.50	8.50	ppb	U
78-87-5	1,2-Dichloropropane	C 381-6455	7.00	7.00	ppb	U
74-95-3	Dibromomethane	C 381-6455	8.00	8.00	ppb	U
75-27-4	Bromodichloromethane	C 381-6455	8.00	8.00	ppb	U
110-75-8	2-Chloroethylvinylether	C 381-6455	14.5	14.5	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 381-6455	11.0	11.0	ppb	U
108-10-1	4-Methyl-2-pentanone	C 381-6455	450	450	ppb	U
108-88-3	Toluene	C 381-6455	7.00	**108**	ppb	
10061-02-6	t-1,3-Dichloropropene	C 381-6455	7.00	7.00	ppb	U
79-00-5	1,1,2-Trichloroethane	C 381-6455	9.50	9.50	ppb	U
127-18-4	Tetrachloroethene	C 381-6455	6.00	**34.0**	ppb	

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-4...continue
Client Sample ID: DMP-3
Matrix: Liquid
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Type: Grab

Collected: 01/08/2002 13:55

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 381-6455	6.00	6.00	ppb	U
591-78-6	2-Hexanone	C 381-6455	250	250	ppb	U
124-48-1	Dibromochloromethane	C 381-6455	8.50	8.50	ppb	U
106-93-4	1,2-Dibromoethane	C 381-6455	9.50	9.50	ppb	U
108-90-7	Chlorobenzene	C 381-6455	9.50	9.50	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 381-6455	7.50	7.50	ppb	U
100-41-4	Ethylbenzene	C 381-6455	8.00	8.00	ppb	U
108-38-3	m,p-xylene	C 381-6455	10.5	10.5	ppb	U
95-47-6	o-xylene	C 381-6455	8.00	8.00	ppb	U
100-42-5	Styrene	C 381-6455	6.50	6.50	ppb	U
75-25-2	Bromoform	C 381-6455	13.5	13.5	ppb	U
98-82-8	Isopropylbenzene	C 381-6455	5.00	5.00	ppb	U
108-86-1	Bromobenzene	C 381-6455	10.5	10.5	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 381-6455	7.50	7.50	ppb	U
103-65-1	n-Propylbenzene	C 381-6455	7.00	7.00	ppb	U
96-18-4	1,2,3-Trichloropropane	C 381-6455	12.0	12.0	ppb	U
622-96-8	p-Ethyltoluene	C 381-6455	12.0	12.0	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 381-6455	6.00	6.00	ppb	U
95-49-8	2-Chlorotoluene	C 381-6455	10.5	10.5	ppb	U
106-43-4	4-Chlorotoluene	C 381-6455	8.00	8.00	ppb	U
98-06-6	tert-Butylbenzene	C 381-6455	6.50	6.50	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 381-6455	6.50	6.50	ppb	U
135-98-8	sec-Butylbenzene	C 381-6455	4.00	4.00	ppb	U
99-87-6	4-Isopropyltoluene	C 381-6455	5.00	5.00	ppb	U
541-73-1	1,3-Dichlorobenzene	C 381-6455	7.50	7.50	ppb	U
106-46-7	1,4-Dichlorobenzene	C 381-6455	7.50	7.50	ppb	U
95-50-1	1,2-Dichlorobenzene	C 381-6455	7.00	7.00	ppb	U
105-05-5	p-Diethylbenzene	C 381-6455	13.5	13.5	ppb	U
104-51-8	n-Butylbenzene	C 381-6455	7.00	7.00	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 381-6455	13.5	13.5	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 381-6455	25.0	25.0	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 381-6455	12.5	12.5	ppb	U
87-68-3	Hexachlorobutadiene	C 381-6455	12.0	12.0	ppb	U
91-20-3	Naphthalene	C 381-6455	13.5	13.5	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 381-6455	19.0	19.0	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-4...continue

Client Sample ID: DMP-3

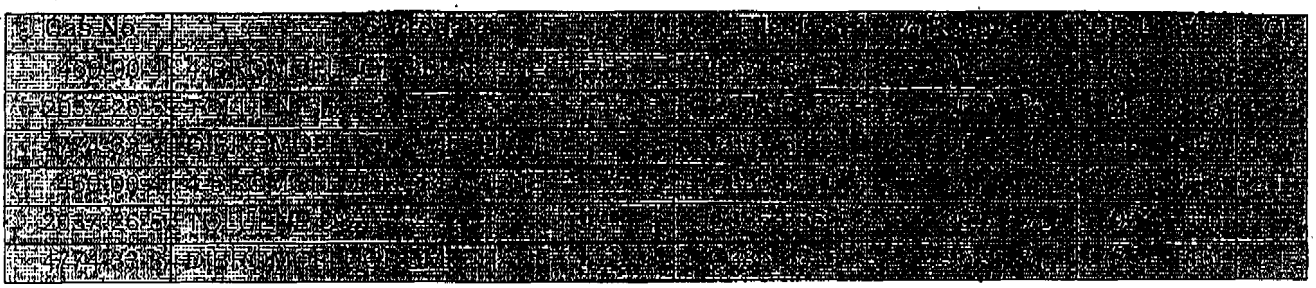
Collected: 01/08/2002 13:55

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002



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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-5
Client Sample ID: SMP-4
Matrix: Liquid
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Type: Grab

Collected: 01/08/2002 16:05

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 386-6551	4.80	4.80	ppb	U
75-45-6	Chlorodifluoromethane	C 386-6551	4.20	4.20	ppb	U
74-87-3	Chloromethane	C 386-6551	17.0	17.0	ppb	U
75-01-4	Vinyl Chloride	C 386-6551	17.0	**126**	ppb	
74-83-9	Bromomethane	C 386-6551	13.0	13.0	ppb	U
75-00-3	Chloroethane	C 386-6551	13.4	**776**	ppb	
75-69-4	Trichlorofluoromethane	C 386-6551	2.40	2.40	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 386-6551	3.80	3.80	ppb	U
75-35-4	1,1-Dichloroethene	C 386-6551	4.40	**130**	ppb	
67-64-1	Acetone	C 386-6551	46.0	46.0	ppb	U
75-15-0	Carbon disulfide	C 386-6551	6.60	6.60	ppb	U
75-09-2	Methylene Chloride	C 386-6551	7.40	**66.8**	ppb	
156-60-5	t-1,2-Dichloroethene	C 386-6551	5.60	5.60	ppb	U
1634-04-4	Methyl t-butyl ether	C 386-6551	3.60	3.60	ppb	U
75-34-3	1,1-Dichloroethane	C 381-6456	25.0	**2890**	ppb	
590-20-7	2,2-Dichloropropane	C 386-6551	6.00	6.00	ppb	U
156-59-2	c-1,2-Dichloroethene	C 386-6551	3.60	3.60	ppb	U
78-93-3	2-Butanone	C 386-6551	344	344	ppb	U
74-97-5	Bromochloromethane	C 386-6551	3.00	3.00	ppb	U
67-66-3	Chloroform	C 386-6551	4.40	4.40	ppb	U
71-55-6	1,1,1-Trichloroethane	C 386-6551	2.80	**2700**	ppb	
56-23-5	Carbon Tetrachloride	C 386-6551	2.00	2.00	ppb	U
563-58-6	1,1-Dichloropropene	C 386-6551	3.60	3.60	ppb	U
71-43-2	Benzene	C 386-6551	3.40	3.40	ppb	U
107-06-2	1,2-Dichloroethane	C 386-6551	3.20	3.20	ppb	U
79-01-6	Trichloroethene	C 386-6551	3.40	3.40	ppb	U
78-87-5	1,2-Dichloropropane	C 386-6551	2.80	2.80	ppb	U
74-95-3	Dibromomethane	C 386-6551	3.20	3.20	ppb	U
75-27-4	Bromodichloromethane	C 386-6551	3.20	3.20	ppb	U
110-75-8	2-Chloroethylvinylether	C 386-6551	5.80	5.80	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 386-6551	4.40	4.40	ppb	U
108-10-1	4-Methyl-2-pentanone	C 386-6551	180	180	ppb	U
108-88-3	Toluene	C 386-6551	2.80	**69.6**	ppb	
10061-02-6	t-1,3-Dichloropropene	C 386-6551	2.80	2.80	ppb	U
79-00-5	1,1,2-Trichloroethane	C 386-6551	3.80	3.80	ppb	U
127-18-4	Tetrachloroethene	C 386-6551	2.40	**32.0**	ppb	

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-5...continue

Client Sample ID: SMP-4
Collected: 01/08/2002 16:05
Matrix: Liquid
Type: Grab
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 386-6551	2.40	2.40	ppb	U
591-78-6	2-Hexanone	C 386-6551	100	100	ppb	U
124-48-1	Dibromochloromethane	C 386-6551	3.40	3.40	ppb	U
106-93-4	1,2-Dibromoethane	C 386-6551	3.80	3.80	ppb	U
108-90-7	Chlorobenzene	C 386-6551	3.80	3.80	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 386-6551	3.00	3.00	ppb	U
100-41-4	Ethylbenzene	C 386-6551	3.20	3.20	ppb	U
108-38-3	m,p-xylene	C 386-6551	4.20	4.20	ppb	U
95-47-6	o-xylene	C 386-6551	3.20	3.20	ppb	U
100-42-5	Styrene	C 386-6551	2.60	2.60	ppb	U
75-25-2	Bromoform	C 386-6551	5.40	5.40	ppb	U
98-82-8	Isopropylbenzene	C 386-6551	2.00	2.00	ppb	U
108-86-1	Bromobenzene	C 386-6551	4.20	4.20	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 386-6551	3.00	3.00	ppb	U
103-65-1	n-Propylbenzene	C 386-6551	2.80	2.80	ppb	U
96-18-4	1,2,3-Trichloropropane	C 386-6551	4.80	4.80	ppb	U
622-96-8	p-Ethyltoluene	C 386-6551	4.80	4.80	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 386-6551	2.40	2.40	ppb	U
95-49-8	2-Chlorotoluene	C 386-6551	4.20	4.20	ppb	U
106-43-4	4-Chlorotoluene	C 386-6551	3.20	3.20	ppb	U
98-06-6	tert-Butylbenzene	C 386-6551	2.60	2.60	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 386-6551	2.60	2.60	ppb	U
135-98-8	sec-Butylbenzene	C 386-6551	1.60	1.60	ppb	U
99-87-6	4-Isopropyltoluene	C 386-6551	2.00	2.00	ppb	U
541-73-1	1,3-Dichlorobenzene	C 386-6551	3.00	3.00	ppb	U
106-46-7	1,4-Dichlorobenzene	C 386-6551	3.00	3.00	ppb	U
95-50-1	1,2-Dichlorobenzene	C 386-6551	2.80	2.80	ppb	U
105-05-5	p-Diethylbenzene	C 386-6551	5.40	5.40	ppb	U
104-51-8	n-Butylbenzene	C 386-6551	2.80	2.80	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 386-6551	5.40	5.40	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 386-6551	10.0	10.0	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 386-6551	5.00	5.00	ppb	U
87-68-3	Hexachlorobutadiene	C 386-6551	4.80	4.80	ppb	U
91-20-3	Naphthalene	C 386-6551	5.40	5.40	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 386-6551	7.60	7.60	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-5...continue

Client Sample ID: SMP-4

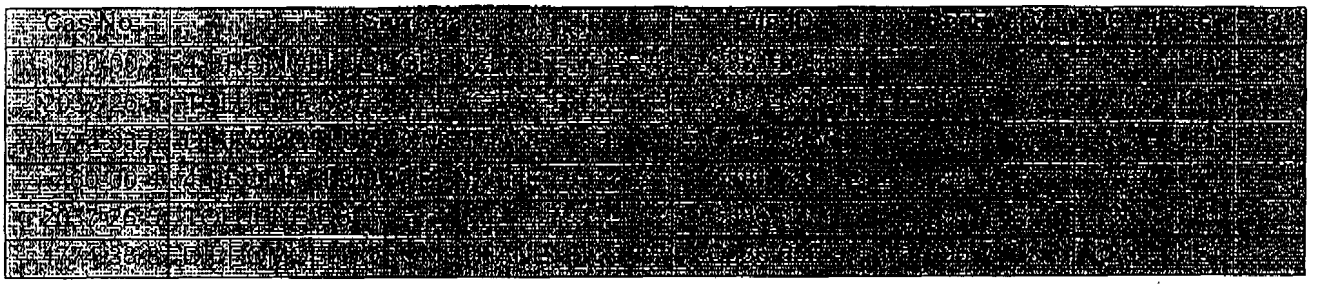
Collected: 01/08/2002 16:05

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002



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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-6
Client Sample ID: DMP-4
Matrix: Liquid
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Type: Grab

Collected: 01/08/2002 15:25

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 381-6457	2.40	2.40	ppb	U
75-45-6	Chlorodifluoromethane	C 381-6457	2.10	2.10	ppb	U
74-87-3	Chloromethane	C 381-6457	8.50	8.50	ppb	U
75-01-4	Vinyl Chloride	C 381-6457	8.50	8.50	ppb	U
74-83-9	Bromomethane	C 381-6457	6.50	6.50	ppb	U
75-00-3	Chloroethane	C 381-6457	6.70	**1210**	ppb	
75-69-4	Trichlorofluoromethane	C 381-6457	1.20	1.20	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 381-6457	1.90	1.90	ppb	U
75-35-4	1,1-Dichloroethene	C 381-6457	2.20	2.20	ppb	U
67-64-1	Acetone	C 381-6457	23.0	23.0	ppb	U
75-15-0	Carbon disulfide	C 381-6457	3.30	3.30	ppb	U
75-09-2	Methylene Chloride	C 381-6457	3.70	**8.40**	ppb	
156-60-5	t-1,2-Dichloroethene	C 381-6457	2.80	2.80	ppb	U
1634-04-4	Methyl t-butyl ether	C 381-6457	1.80	**21.9**	ppb	
75-34-3	1,1-Dichloroethane	C 381-6457	2.50	**16.3**	ppb	
590-20-7	2,2-Dichloropropane	C 381-6457	3.00	3.00	ppb	U
156-59-2	c-1,2-Dichloroethene	C 381-6457	1.80	1.80	ppb	U
78-93-3	2-Butanone	C 381-6457	172	172	ppb	U
74-97-5	Bromochloromethane	C 381-6457	1.50	1.50	ppb	U
67-66-3	Chloroform	C 381-6457	2.20	2.20	ppb	U
71-55-6	1,1,1-Trichloroethane	C 381-6457	1.40	1.40	ppb	U
56-23-5	Carbon Tetrachloride	C 381-6457	1.00	1.00	ppb	U
563-58-6	1,1-Dichloropropene	C 381-6457	1.80	1.80	ppb	U
71-43-2	Benzene	C 381-6457	1.70	1.70	ppb	U
107-06-2	1,2-Dichloroethane	C 381-6457	1.60	1.60	ppb	U
79-01-6	Trichloroethene	C 381-6457	1.70	1.70	ppb	U
78-87-5	1,2-Dichloropropane	C 381-6457	1.40	1.40	ppb	U
74-95-3	Dibromomethane	C 381-6457	1.60	1.60	ppb	U
75-27-4	Bromodichloromethane	C 381-6457	1.60	1.60	ppb	U
110-75-8	2-Chloroethylvinylether	C 381-6457	2.90	2.90	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 381-6457	2.20	2.20	ppb	U
108-10-1	4-Methyl-2-pentanone	C 381-6457	90.0	90.0	ppb	U
108-88-3	Toluene	C 381-6457	1.40	**6.90**	ppb	
10061-02-6	t-1,3-Dichloropropene	C 381-6457	1.40	1.40	ppb	U
79-00-5	1,1,2-Trichloroethane	C 381-6457	1.90	1.90	ppb	U
127-18-4	Tetrachloroethene	C 381-6457	1.20	1.20	ppb	U

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Volatiles - EPA 8260B

Sample: M6865-6...continue
Client Sample ID: DMP-4
Matrix: Liquid
Type: Grab
Collected: 01/08/2002 15:25
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 381-6457	1.20	1.20	ppb	U
591-78-6	2-Hexanone	C 381-6457	50.0	50.0	ppb	U
124-48-1	Dibromochloromethane	C 381-6457	1.70	1.70	ppb	U
106-93-4	1,2-Dibromoethane	C 381-6457	1.90	1.90	ppb	U
108-90-7	Chlorobenzene	C 381-6457	1.90	1.90	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 381-6457	1.50	1.50	ppb	U
100-41-4	Ethylbenzene	C 381-6457	1.60	1.60	ppb	U
108-38-3	m,p-xylene	C 381-6457	2.10	2.10	ppb	U
95-47-6	o-xylene	C 381-6457	1.60	1.60	ppb	U
100-42-5	Styrene	C 381-6457	1.30	1.30	ppb	U
75-25-2	Bromoform	C 381-6457	2.70	2.70	ppb	U
98-82-8	Isopropylbenzene	C 381-6457	1.00	1.00	ppb	U
108-86-1	Bromobenzene	C 381-6457	2.10	2.10	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 381-6457	1.50	1.50	ppb	U
103-65-1	n-Propylbenzene	C 381-6457	1.40	1.40	ppb	U
96-18-4	1,2,3-Trichloropropane	C 381-6457	2.40	2.40	ppb	U
622-96-8	p-Ethyltoluene	C 381-6457	2.40	2.40	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 381-6457	1.20	1.20	ppb	U
95-49-8	2-Chlorotoluene	C 381-6457	2.10	**34.2**	ppb	
106-43-4	4-Chlorotoluene	C 381-6457	1.60	1.60	ppb	U
98-06-6	tert-Butylbenzene	C 381-6457	1.30	1.30	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 381-6457	1.30	**9.00**	ppb	
135-98-8	sec-Butylbenzene	C 381-6457	0.80	0.80	ppb	U
99-87-6	4-Isopropyltoluene	C 381-6457	1.00	1.00	ppb	U
541-73-1	1,3-Dichlorobenzene	C 381-6457	1.50	1.50	ppb	U
106-46-7	1,4-Dichlorobenzene	C 381-6457	1.50	1.50	ppb	U
95-50-1	1,2-Dichlorobenzene	C 381-6457	1.40	1.40	ppb	U
105-05-5	p-Diethylbenzene	C 381-6457	2.70	2.70	ppb	U
104-51-8	n-Butylbenzene	C 381-6457	1.40	1.40	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 381-6457	2.70	2.70	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 381-6457	5.00	5.00	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 381-6457	2.50	2.50	ppb	U
87-68-3	Hexachlorobutadiene	C 381-6457	2.40	2.40	ppb	U
91-20-3	Naphthalene	C 381-6457	2.70	2.70	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 381-6457	3.80	3.80	ppb	U

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Volatiles - EPA 8260B

Sample: M6865-6...continue

Client Sample ID: DMP-4 Collected: 01/08/2002 15:25
Matrix: Liquid Type: Grab
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Cas No	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-7

Client Sample ID: MW-7 Collected: 01/08/2002 11:40

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 386-6553	0.24	0.24	ppb	U
75-45-6	Chlorodifluoromethane	C 386-6553	0.21	0.21	ppb	U
74-87-3	Chloromethane	C 386-6553	0.85	0.85	ppb	U
75-01-4	Vinyl Chloride	C 386-6553	0.85	**10.5**	ppb	
74-83-9	Bromomethane	C 386-6553	0.65	0.65	ppb	U
75-00-3	Chloroethane	C 381-6458	33.5	**390**	ppb	
75-69-4	Trichlorofluoromethane	C 386-6553	0.12	0.12	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 386-6553	0.19	0.19	ppb	U
75-35-4	1,1-Dichloroethene	C 386-6553	0.22	0.22	ppb	U
67-64-1	Acetone	C 386-6553	2.30	2.30	ppb	U
75-15-0	Carbon disulfide	C 386-6553	0.33	**1.20**	ppb	
75-09-2	Methylene Chloride	C 386-6553	0.37	**8.00**	ppb	
156-60-5	t-1,2-Dichloroethene	C 386-6553	0.28	**2.10**	ppb	
1634-04-4	Methyl t-butyl ether	C 386-6553	0.18	0.18	ppb	U
75-34-3	1,1-Dichloroethane	C 381-6458	12.5	**193**	ppb	
590-20-7	2,2-Dichloropropane	C 386-6553	0.30	0.30	ppb	U
156-59-2	c-1,2-Dichloroethene	C 386-6553	0.18	**8.30**	ppb	
78-93-3	2-Butanone	C 386-6553	17.2	17.2	ppb	U
74-97-5	Bromochloromethane	C 386-6553	0.15	0.15	ppb	U
67-66-3	Chloroform	C 386-6553	0.22	0.22	ppb	U
71-55-6	1,1,1-Trichloroethane	C 386-6553	0.14	0.14	ppb	U
56-23-5	Carbon Tetrachloride	C 386-6553	0.10	0.10	ppb	U
563-58-6	1,1-Dichloropropene	C 386-6553	0.18	0.18	ppb	U
71-43-2	Benzene	C 386-6553	0.17	**6.50**	ppb	
107-06-2	1,2-Dichloroethane	C 386-6553	0.16	**3.70**	ppb	
79-01-6	Trichloroethene	C 386-6553	0.17	**2.70**	ppb	B
78-87-5	1,2-Dichloropropane	C 386-6553	0.14	0.14	ppb	U
74-95-3	Dibromomethane	C 386-6553	0.16	0.16	ppb	U
75-27-4	Bromodichloromethane	C 386-6553	0.16	0.16	ppb	U
110-75-8	2-Chloroethylvinylether	C 386-6553	0.29	0.29	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 386-6553	0.22	0.22	ppb	U
108-10-1	4-Methyl-2-pentanone	C 386-6553	9.00	9.00	ppb	U
108-88-3	Toluene	C 386-6553	0.14	**0.95**	ppb	
10061-02-6	t-1,3-Dichloropropene	C 386-6553	0.14	0.14	ppb	U
79-00-5	1,1,2-Trichloroethane	C 386-6553	0.19	0.19	ppb	U
127-18-4	Tetrachloroethene	C 386-6553	0.12	0.12	ppb	U

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Volatiles - EPA 8260B

Sample: M6865-7...continue

Client Sample ID: MW-7 Collected: 01/08/2002 11:40
Matrix: Liquid Type: Grab
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 386-6553	0.12	0.12	ppb	U
591-78-6	2-Hexanone	C 386-6553	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	C 386-6553	0.17	0.17	ppb	U
106-93-4	1,2-Dibromoethane	C 386-6553	0.19	0.19	ppb	U
108-90-7	Chlorobenzene	C 386-6553	0.19	0.19	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 386-6553	0.15	0.15	ppb	U
100-41-4	Ethylbenzene	C 386-6553	0.16	0.16	ppb	U
108-38-3	m,p-xylene	C 386-6553	0.21	**1.00**	ppb	
95-47-6	o-xylene	C 386-6553	0.16	0.16	ppb	U
100-42-5	Styrene	C 386-6553	0.13	0.13	ppb	U
75-25-2	Bromoform	C 386-6553	0.27	0.27	ppb	U
98-82-8	Isopropylbenzene	C 386-6553	0.10	0.10	ppb	U
108-86-1	Bromobenzene	C 386-6553	0.21	0.21	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 386-6553	0.15	0.15	ppb	U
103-65-1	n-Propylbenzene	C 386-6553	0.14	0.14	ppb	U
96-18-4	1,2,3-Trichloropropane	C 386-6553	0.24	0.24	ppb	U
622-96-8	p-Ethyltoluene	C 386-6553	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 386-6553	0.12	0.12	ppb	U
95-49-8	2-Chlorotoluene	C 386-6553	0.21	**8.40**	ppb	
106-43-4	4-Chlorotoluene	C 386-6553	0.16	0.16	ppb	U
98-06-6	tert-Butylbenzene	C 386-6553	0.13	0.13	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 386-6553	0.13	**0.93**	ppb	
135-98-8	sec-Butylbenzene	C 386-6553	0.080	0.080	ppb	U
99-87-6	4-Isopropyltoluene	C 386-6553	0.10	0.10	ppb	U
541-73-1	1,3-Dichlorobenzene	C 386-6553	0.15	0.15	ppb	U
106-46-7	1,4-Dichlorobenzene	C 386-6553	0.15	0.15	ppb	U
95-50-1	1,2-Dichlorobenzene	C 386-6553	0.14	0.14	ppb	U
105-05-5	p-Diethylbenzene	C 386-6553	0.27	0.27	ppb	U
104-51-8	n-Butylbenzene	C 386-6553	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 386-6553	0.27	0.27	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 386-6553	0.50	0.50	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 386-6553	0.25	0.25	ppb	U
87-68-3	Hexachlorobutadiene	C 386-6553	0.24	0.24	ppb	U
91-20-3	Naphthalene	C 386-6553	0.27	0.27	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 386-6553	0.38	0.38	ppb	U

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Volatiles - EPA 8260B

Sample: M6865-7...continue

Client Sample ID: MW-7

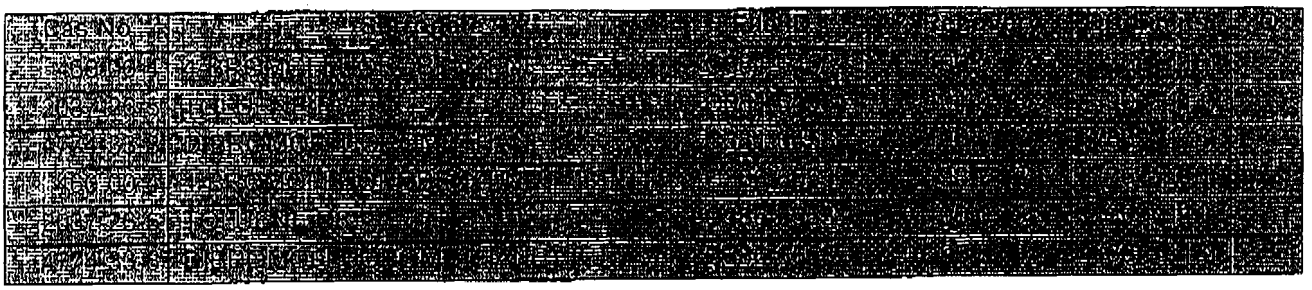
Matrix: Liquid

Type: Grab

Collected: 01/08/2002 11:40

Remarks: See Case Narrative

Analyzed Date: 01/11/2002



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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-8

Client Sample ID: MW-8
Collected: 01/08/2002 09:30
Matrix: Liquid
Type: Grab
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 381-6459	0.24	0.24	ppb	U
75-45-6	Chlorodifluoromethane	C 381-6459	0.21	0.21	ppb	U
74-87-3	Chloromethane	C 381-6459	0.85	0.85	ppb	U
75-01-4	Vinyl Chloride	C 381-6459	0.85	0.85	ppb	U
74-83-9	Bromomethane	C 381-6459	0.65	0.65	ppb	U
75-00-3	Chloroethane	C 381-6459	0.67	0.67	ppb	U
75-69-4	Trichlorofluoromethane	C 381-6459	0.12	0.12	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 381-6459	0.19	0.19	ppb	U
75-35-4	1,1-Dichloroethene	C 381-6459	0.22	0.22	ppb	U
67-64-1	Acetone	C 381-6459	2.30	2.30	ppb	U
75-15-0	Carbon disulfide	C 381-6459	0.33	0.33	ppb	U
75-09-2	Methylene Chloride	C 381-6459	0.37	0.37	ppb	U
156-60-5	t-1,2-Dichloroethene	C 381-6459	0.28	0.28	ppb	U
1634-04-4	Methyl t-butyl ether	C 381-6459	0.18	0.18	ppb	U
75-34-3	1,1-Dichloroethane	C 381-6459	0.25	0.25	ppb	U
590-20-7	2,2-Dichloropropane	C 381-6459	0.30	0.30	ppb	U
156-59-2	c-1,2-Dichloroethene	C 381-6459	0.18	0.18	ppb	U
78-93-3	2-Butanone	C 381-6459	17.2	17.2	ppb	U
74-97-5	Bromochloromethane	C 381-6459	0.15	0.15	ppb	U
67-66-3	Chloroform	C 381-6459	0.22	0.22	ppb	U
71-55-6	1,1,1-Trichloroethane	C 381-6459	0.14	0.14	ppb	U
56-23-5	Carbon Tetrachloride	C 381-6459	0.10	0.10	ppb	U
563-58-6	1,1-Dichloropropene	C 381-6459	0.18	0.18	ppb	U
71-43-2	Benzene	C 381-6459	0.17	0.17	ppb	U
107-06-2	1,2-Dichloroethane	C 381-6459	0.16	0.16	ppb	U
79-01-6	Trichloroethene	C 381-6459	0.17	0.97	ppb	B
78-87-5	1,2-Dichloropropane	C 381-6459	0.14	0.14	ppb	U
74-95-3	Dibromomethane	C 381-6459	0.16	0.16	ppb	U
75-27-4	Bromodichloromethane	C 381-6459	0.16	0.16	ppb	U
110-75-8	2-Chloroethylvinylether	C 381-6459	0.29	0.29	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 381-6459	0.22	0.22	ppb	U
108-10-1	4-Methyl-2-pentanone	C 381-6459	9.00	9.00	ppb	U
108-88-3	Toluene	C 381-6459	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	C 381-6459	0.14	0.14	ppb	U
79-00-5	1,1,2-Trichloroethane	C 381-6459	0.19	0.19	ppb	U
127-18-4	Tetrachloroethene	C 381-6459	0.12	0.12	ppb	U

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Volatiles - EPA 8260B

Sample: M6865-8...continue

Client Sample ID: MW-8 Collected: 01/08/2002 09:30

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 381-6459	0.12	0.12	ppb	U
591-78-6	2-Hexanone	C 381-6459	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	C 381-6459	0.17	0.17	ppb	U
106-93-4	1,2-Dibromoethane	C 381-6459	0.19	0.19	ppb	U
108-90-7	Chlorobenzene	C 381-6459	0.19	0.19	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 381-6459	0.15	0.15	ppb	U
100-41-4	Ethylbenzene	C 381-6459	0.16	0.16	ppb	U
108-38-3	m,p-xylene	C 381-6459	0.21	0.21	ppb	U
95-47-6	o-xylene	C 381-6459	0.16	0.16	ppb	U
100-42-5	Styrene	C 381-6459	0.13	0.13	ppb	U
75-25-2	Bromoform	C 381-6459	0.27	0.27	ppb	U
98-82-8	Isopropylbenzene	C 381-6459	0.10	0.10	ppb	U
108-86-1	Bromobenzene	C 381-6459	0.21	0.21	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 381-6459	0.15	0.15	ppb	U
103-65-1	n-Propylbenzene	C 381-6459	0.14	0.14	ppb	U
96-18-4	1,2,3-Trichloropropane	C 381-6459	0.24	0.24	ppb	U
622-96-8	p-Ethyltoluene	C 381-6459	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 381-6459	0.12	0.12	ppb	U
95-49-8	2-Chlorotoluene	C 381-6459	0.21	0.21	ppb	U
106-43-4	4-Chlorotoluene	C 381-6459	0.16	0.16	ppb	U
98-06-6	tert-Butylbenzene	C 381-6459	0.13	0.13	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 381-6459	0.13	0.13	ppb	U
135-98-8	sec-Butylbenzene	C 381-6459	0.080	0.080	ppb	U
99-87-6	4-Isopropyltoluene	C 381-6459	0.10	0.10	ppb	U
541-73-1	1,3-Dichlorobenzene	C 381-6459	0.15	0.15	ppb	U
106-46-7	1,4-Dichlorobenzene	C 381-6459	0.15	0.15	ppb	U
95-50-1	1,2-Dichlorobenzene	C 381-6459	0.14	0.14	ppb	U
105-05-5	p-Diethylbenzene	C 381-6459	0.27	0.27	ppb	U
104-51-8	n-Butylbenzene	C 381-6459	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 381-6459	0.27	0.27	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 381-6459	0.50	0.50	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 381-6459	0.25	0.25	ppb	U
87-68-3	Hexachlorobutadiene	C 381-6459	0.24	0.24	ppb	U
91-20-3	Naphthalene	C 381-6459	0.27	0.27	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 381-6459	0.38	0.38	ppb	U

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01/18/2002

Volatiles - EPA 8260B

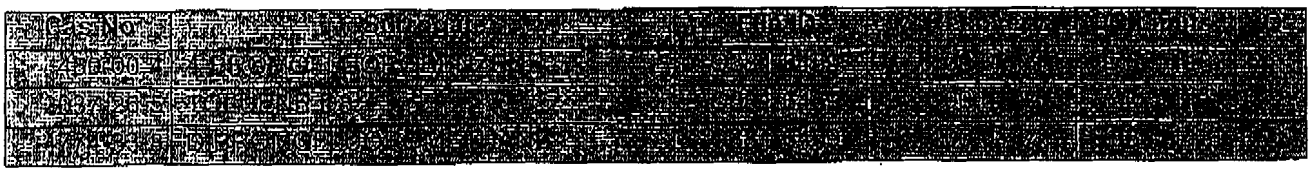
Sample: M6865-8...continue

Client Sample ID: MW-8 Collected: 01/08/2002 09:30

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/11/2002



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Volatiles - EPA 8260B

Sample: M6865-9
Client Sample ID: MW-14
Matrix: Liquid
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Collected: 01/08/2002 11:00
Type: Grab

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 381-6460	4.80	4.80	ppb	U
75-45-6	Chlorodifluoromethane	C 381-6460	4.20	4.20	ppb	U
74-87-3	Chloromethane	C 381-6460	17.0	17.0	ppb	U
75-01-4	Vinyl Chloride	C 381-6460	17.0	**173**	ppb	
74-83-9	Bromomethane	C 381-6460	13.0	13.0	ppb	U
75-00-3	Chloroethane	C 381-6460	13.4	**501**	ppb	
75-69-4	Trichlorofluoromethane	C 381-6460	2.40	2.40	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 381-6460	3.80	3.80	ppb	U
75-35-4	1,1-Dichloroethene	C 381-6460	4.40	**542**	ppb	
67-64-1	Acetone	C 381-6460	46.0	**986**	ppb	
75-15-0	Carbon disulfide	C 381-6460	6.60	6.60	ppb	U
75-09-2	Methylene Chloride	C 381-6460	7.40	**134**	ppb	
156-60-5	t-1,2-Dichloroethene	C 381-6460	5.60	5.60	ppb	U
1634-04-4	Methyl t-butyl ether	C 381-6460	3.60	3.60	ppb	U
75-34-3	1,1-Dichloroethane	C 386-6552	50.0	**14100**	ppb	
590-20-7	2,2-Dichloropropane	C 381-6460	6.00	6.00	ppb	U
156-59-2	c-1,2-Dichloroethene	C 381-6460	3.60	3.60	ppb	U
78-93-3	2-Butanone	C 381-6460	344	344	ppb	U
74-97-5	Bromochloromethane	C 381-6460	3.00	3.00	ppb	U
67-66-3	Chloroform	C 381-6460	4.40	4.40	ppb	U
71-55-6	1,1,1-Trichloroethane	C 381-6460	2.80	**1520**	ppb	
56-23-5	Carbon Tetrachloride	C 381-6460	2.00	2.00	ppb	U
563-58-6	1,1-Dichloropropene	C 381-6460	3.60	3.60	ppb	U
71-43-2	Benzene	C 381-6460	3.40	3.40	ppb	U
107-06-2	1,2-Dichloroethane	C 381-6460	3.20	3.20	ppb	U
79-01-6	Trichloroethene	C 381-6460	3.40	3.40	ppb	U
78-87-5	1,2-Dichloropropane	C 381-6460	2.80	2.80	ppb	U
74-95-3	Dibromomethane	C 381-6460	3.20	3.20	ppb	U
75-27-4	Bromodichloromethane	C 381-6460	3.20	3.20	ppb	U
110-75-8	2-Chloroethylvinylether	C 381-6460	5.80	5.80	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 381-6460	4.40	4.40	ppb	U
108-10-1	4-Methyl-2-pentanone	C 381-6460	180	180	ppb	U
108-88-3	Toluene	C 381-6460	2.80	**25.0**	ppb	
10061-02-6	t-1,3-Dichloropropene	C 381-6460	2.80	2.80	ppb	U
79-00-5	1,1,2-Trichloroethane	C 381-6460	3.80	3.80	ppb	U
127-18-4	Tetrachloroethene	C 381-6460	2.40	2.40	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-9...continue

Client Sample ID: MW-14 Collected: 01/08/2002 11:00
Matrix: Liquid Type: Grab
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 381-6460	2.40	2.40	ppb	U
591-78-6	2-Hexanone	C 381-6460	100	100	ppb	U
124-48-1	Dibromochloromethane	C 381-6460	3.40	3.40	ppb	U
106-93-4	1,2-Dibromoethane	C 381-6460	3.80	3.80	ppb	U
108-90-7	Chlorobenzene	C 381-6460	3.80	3.80	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 381-6460	3.00	3.00	ppb	U
100-41-4	Ethylbenzene	C 381-6460	3.20	3.20	ppb	U
108-38-3	m,p-xylene	C 381-6460	4.20	4.20	ppb	U
95-47-6	o-xylene	C 381-6460	3.20	3.20	ppb	U
100-42-5	Styrene	C 381-6460	2.60	2.60	ppb	U
75-25-2	Bromoform	C 381-6460	5.40	5.40	ppb	U
98-82-8	Isopropylbenzene	C 381-6460	2.00	2.00	ppb	U
108-86-1	Bromobenzene	C 381-6460	4.20	4.20	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 381-6460	3.00	3.00	ppb	U
103-65-1	n-Propylbenzene	C 381-6460	2.80	2.80	ppb	U
96-18-4	1,2,3-Trichloropropane	C 381-6460	4.80	4.80	ppb	U
622-96-8	p-Ethyltoluene	C 381-6460	4.80	4.80	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 381-6460	2.40	2.40	ppb	U
95-49-8	2-Chlorotoluene	C 381-6460	4.20	4.20	ppb	U
106-43-4	4-Chlorotoluene	C 381-6460	3.20	3.20	ppb	U
98-06-6	tert-Butylbenzene	C 381-6460	2.60	2.60	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 381-6460	2.60	2.60	ppb	U
135-98-8	sec-Butylbenzene	C 381-6460	1.60	1.60	ppb	U
99-87-6	4-Isopropyltoluene	C 381-6460	2.00	2.00	ppb	U
541-73-1	1,3-Dichlorobenzene	C 381-6460	3.00	3.00	ppb	U
106-46-7	1,4-Dichlorobenzene	C 381-6460	3.00	3.00	ppb	U
95-50-1	1,2-Dichlorobenzene	C 381-6460	2.80	2.80	ppb	U
105-05-5	p-Diethylbenzene	C 381-6460	5.40	5.40	ppb	U
104-51-8	n-Butylbenzene	C 381-6460	2.80	2.80	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 381-6460	5.40	5.40	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 381-6460	10.0	10.0	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 381-6460	5.00	5.00	ppb	U
87-68-3	Hexachlorobutadiene	C 381-6460	4.80	4.80	ppb	U
91-20-3	Naphthalene	C 381-6460	5.40	5.40	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 381-6460	7.60	7.60	ppb	U

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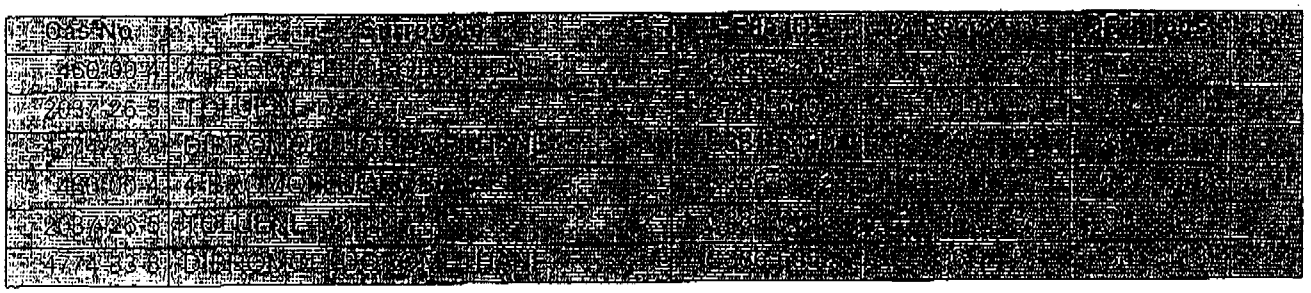
01/18/2002

Volatiles - EPA 8260B

Sample: M6865-9...continue
Client Sample ID: MW-14
Matrix: Liquid
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Type: Grab

Collected: 01/08/2002 11:00



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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-10
Client Sample ID: Trip Blank
Matrix: Liquid
Remarks: See Case Narrative
Analyzed Date: 01/11/2002

Type: Blank

Collected: 01/08/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 381-6451	0.24	0.24	ppb	U
75-45-6	Chlorodifluoromethane	C 381-6451	0.21	0.21	ppb	U
74-87-3	Chloromethane	C 381-6451	0.85	0.85	ppb	U
75-01-4	Vinyl Chloride	C 381-6451	0.85	0.85	ppb	U
74-83-9	Bromomethane	C 381-6451	0.65	0.65	ppb	U
75-00-3	Chloroethane	C 381-6451	0.67	0.67	ppb	U
75-69-4	Trichlorofluoromethane	C 381-6451	0.12	0.12	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 381-6451	0.19	0.19	ppb	U
75-35-4	1,1-Dichloroethene	C 381-6451	0.22	0.22	ppb	U
67-64-1	Acetone	C 381-6451	2.30	2.30	ppb	U
75-15-0	Carbon disulfide	C 381-6451	0.33	0.33	ppb	U
75-09-2	Methylene Chloride	C 381-6451	0.37	0.37	ppb	U
156-60-5	t-1,2-Dichloroethene	C 381-6451	0.28	0.28	ppb	U
1634-04-4	Methyl t-butyl ether	C 381-6451	0.18	0.18	ppb	U
75-34-3	1,1-Dichloroethane	C 381-6451	0.25	0.25	ppb	U
590-20-7	2,2-Dichloropropane	C 381-6451	0.30	0.30	ppb	U
156-59-2	c-1,2-Dichloroethene	C 381-6451	0.18	0.18	ppb	U
78-93-3	2-Butanone	C 381-6451	17.2	17.2	ppb	U
74-97-5	Bromochloromethane	C 381-6451	0.15	0.15	ppb	U
67-66-3	Chloroform	C 381-6451	0.22	0.22	ppb	U
71-55-6	1,1,1-Trichloroethane	C 381-6451	0.14	0.14	ppb	U
56-23-5	Carbon Tetrachloride	C 381-6451	0.10	0.10	ppb	U
563-58-6	1,1-Dichloropropene	C 381-6451	0.18	0.18	ppb	U
71-43-2	Benzene	C 381-6451	0.17	0.17	ppb	U
107-06-2	1,2-Dichloroethane	C 381-6451	0.16	0.16	ppb	U
79-01-6	Trichloroethene	C 381-6451	0.17	0.17	ppb	U
78-87-5	1,2-Dichloropropane	C 381-6451	0.14	0.14	ppb	U
74-95-3	Dibromomethane	C 381-6451	0.16	0.16	ppb	U
75-27-4	Bromodichloromethane	C 381-6451	0.16	0.16	ppb	U
110-75-8	2-Chloroethylvinylether	C 381-6451	0.29	0.29	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 381-6451	0.22	0.22	ppb	U
108-10-1	4-Methyl-2-pentanone	C 381-6451	9.00	9.00	ppb	U
108-88-3	Toluene	C 381-6451	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	C 381-6451	0.14	0.14	ppb	U
79-00-5	1,1,2-Trichloroethane	C 381-6451	0.19	0.19	ppb	U
127-18-4	Tetrachloroethene	C 381-6451	0.12	0.12	ppb	U

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01/18/2002

Volatiles - EPA 8260B

Sample: M6865-10...continue

Client Sample ID: Trip Blank

Collected: 01/08/2002

Matrix: Liquid

Type: Blank

Remarks: See Case Narrative

Analyzed Date: 01/11/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 381-6451	0.12	0.12	ppb	U
591-78-6	2-Hexanone	C 381-6451	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	C 381-6451	0.17	0.17	ppb	U
106-93-4	1,2-Dibromoethane	C 381-6451	0.19	0.19	ppb	U
108-90-7	Chlorobenzene	C 381-6451	0.19	0.19	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 381-6451	0.15	0.15	ppb	U
100-41-4	Ethylbenzene	C 381-6451	0.16	0.16	ppb	U
108-38-3	m,p-xylene	C 381-6451	0.21	0.21	ppb	U
95-47-6	o-xylene	C 381-6451	0.16	0.16	ppb	U
100-42-5	Styrene	C 381-6451	0.13	0.13	ppb	U
75-25-2	Bromoform	C 381-6451	0.27	0.27	ppb	U
98-82-8	Isopropylbenzene	C 381-6451	0.10	0.10	ppb	U
108-86-1	Bromobenzene	C 381-6451	0.21	0.21	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 381-6451	0.15	0.15	ppb	U
103-65-1	n-Propylbenzene	C 381-6451	0.14	0.14	ppb	U
96-18-4	1,2,3-Trichloropropane	C 381-6451	0.24	0.24	ppb	U
622-96-8	p-Ethyltoluene	C 381-6451	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 381-6451	0.12	0.12	ppb	U
95-49-8	2-Chlorotoluene	C 381-6451	0.21	0.21	ppb	U
106-43-4	4-Chlorotoluene	C 381-6451	0.16	0.16	ppb	U
98-06-6	tert-Butylbenzene	C 381-6451	0.13	0.13	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 381-6451	0.13	0.13	ppb	U
135-98-8	sec-Butylbenzene	C 381-6451	0.080	0.080	ppb	U
99-87-6	4-Isopropyltoluene	C 381-6451	0.10	0.10	ppb	U
541-73-1	1,3-Dichlorobenzene	C 381-6451	0.15	0.15	ppb	U
106-46-7	1,4-Dichlorobenzene	C 381-6451	0.15	0.15	ppb	U
95-50-1	1,2-Dichlorobenzene	C 381-6451	0.14	0.14	ppb	U
105-05-5	p-Diethylbenzene	C 381-6451	0.27	0.27	ppb	U
104-51-8	n-Butylbenzene	C 381-6451	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 381-6451	0.27	0.27	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 381-6451	0.50	0.50	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 381-6451	0.25	0.25	ppb	U
87-68-3	Hexachlorobutadiene	C 381-6451	0.24	0.24	ppb	U
91-20-3	Naphthalene	C 381-6451	0.27	0.27	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 381-6451	0.38	0.38	ppb	U

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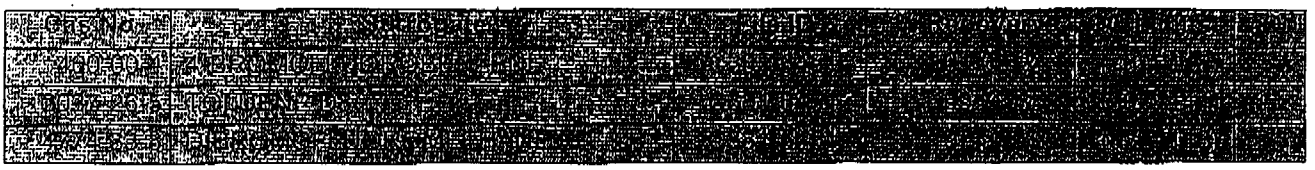
01/18/2002

Volatiles - EPA 8260B

Sample: M6865-10...continue

Client Sample ID: Trip Blank
Collected: 01/08/2002
Matrix: Liquid
Type: Blank
Remarks: See Case Narrative
Analyzed Date: 01/11/2002



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01/18/2002

Iron, Total

Sample: M6865-1
Client Sample ID: SMP-1
Matrix: Liquid
Remarks:
Analyzed Date: 01/14/2002
Type: Grab
Collected: 01/08/2002 14:30

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	**16.4**	ppm	

Sample: M6865-2
Client Sample ID: DMP-1
Matrix: Liquid
Remarks:
Analyzed Date: 01/14/2002
Type: Grab
Collected: 01/08/2002 12:30

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	**15.9**	ppm	

Sample: M6865-3
Client Sample ID: SMP-3
Matrix: Liquid
Remarks:
Analyzed Date: 01/14/2002
Type: Grab
Collected: 01/08/2002 14:55

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	**5.39**	ppm	

Sample: M6865-4
Client Sample ID: DMP-3
Matrix: Liquid
Remarks:
Analyzed Date: 01/14/2002
Type: Grab
Collected: 01/08/2002 13:55

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	**39.0**	ppm	

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01/18/2002

Iron, Total

Sample: M6865-5

Client Sample ID: SMP-4 — Collected: 01/08/2002 16:05

Matrix: Liquid — Type: Grab

Remarks:

Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	17.8	ppm	

Sample: M6865-6

Client Sample ID: DMP-4 — Collected: 01/08/2002 15:25

Matrix: Liquid — Type: Grab

Remarks:

Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	31.6	ppm	

Sample: M6865-7

Client Sample ID: MW-7 — Collected: 01/08/2002 11:40

Matrix: Liquid — Type: Grab

Remarks:

Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	13.1	ppm	

Sample: M6865-8

Client Sample ID: MW-8 — Collected: 01/08/2002 09:30

Matrix: Liquid — Type: Grab

Remarks:

Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	0.096	ppm	U

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01/18/2002

Iron, Total

Sample: M6865-9

Client Sample ID: MW-14 Collected: 01/08/2002 11:00

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	279	ppm	

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01/18/2002

Nitrogen/Nitrate - EPA 353.2

Sample: M6865-1

Client Sample ID: SMP-1 Collected: 01/08/2002 14:30

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/10/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.13	0.13	ppm	U

Sample: M6865-2

Client Sample ID: DMP-1 Collected: 01/08/2002 12:30

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/10/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.13	0.13	ppm	U

Sample: M6865-3

Client Sample ID: SMP-3 Collected: 01/08/2002 14:55

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/10/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.13	0.13	ppm	U

Sample: M6865-4

Client Sample ID: DMP-3 Collected: 01/08/2002 13:55

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/10/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.13	0.13	ppm	U

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01/18/2002

Nitrogen/Nitrate - EPA 353.2

Sample: M6865-5

Client Sample ID: SMP-4 Collected: 01/08/2002 16:05

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/10/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.13	0.13	ppm	U

Sample: M6865-6

Client Sample ID: DMP-4 Collected: 01/08/2002 15:25

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/10/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.13	0.13	ppm	U

Sample: M6865-7

Client Sample ID: MW-7 Collected: 01/08/2002 11:40

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/10/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.13	0.085	ppm	J

Sample: M6865-8

Client Sample ID: MW-8 Collected: 01/08/2002 09:30

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/10/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.025	6.93	ppm	

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01/18/2002

Nitrogen/Nitrate - EPA 353.2

Sample: M6865-9

Client Sample ID: MW-14 Collected: 01/08/2002 11:00

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/10/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.13	0.13	ppm	U

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01/18/2002

Sulfate - EPA 375.4

Sample: M6865-1

Client Sample ID: SMP-1 Collected: 01/08/2002 14:30

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/13/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	0.78	732	ppm	

Sample: M6865-2

Client Sample ID: DMP-1 Collected: 01/08/2002 12:30

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/13/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	0.78	1200	ppm	

Sample: M6865-3

Client Sample ID: SMP-3 Collected: 01/08/2002 14:55

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/13/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	3.90	1640	ppm	

Sample: M6865-4

Client Sample ID: DMP-3 Collected: 01/08/2002 13:55

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/13/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	0.39	188	ppm	

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01/18/2002

Sulfate - EPA 375.4

Sample: M6865-5

Client Sample ID: SMP-4 Collected: 01/08/2002 16:05

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/13/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	1.56	**1630**	ppm	

Sample: M6865-6

Client Sample ID: DMP-4 Collected: 01/08/2002 15:25

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/13/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	0.39	**146**	ppm	

Sample: M6865-7

Client Sample ID: MW-7 Collected: 01/08/2002 11:40

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/13/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	0.39	**949**	ppm	

Sample: M6865-8

Client Sample ID: MW-8 Collected: 01/08/2002 09:30

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/13/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	0.078	**27.4**	ppm	

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01/18/2002

Sulfate - EPA 375.4

Sample: M6865-9

Client Sample ID: MW-14 Collected: 01/08/2002 11:00

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/13/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	0.39	441	ppm	

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01/18/2002

Total Organic Carbon - Method 415.1

Sample: M6865-1

Client Sample ID: SMP-1 Collected: 01/08/2002 14:30

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	23.8	ppm	

Sample: M6865-2

Client Sample ID: DMP-1 Collected: 01/08/2002 12:30

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/18/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	8.14	ppm	

Sample: M6865-3

Client Sample ID: SMP-3 Collected: 01/08/2002 14:55

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/18/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	34.4	ppm	

Sample: M6865-4

Client Sample ID: DMP-3 Collected: 01/08/2002 13:55

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/18/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	29.6	ppm	

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01/18/2002

Total Organic Carbon - Method 415.1

Sample: M6865-5

Client Sample ID: SMP-4 Collected: 01/08/2002 16:05

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/18/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	**31.0**	ppm	

Sample: M6865-6

Client Sample ID: DMP-4 Collected: 01/08/2002 15:25

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/18/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	**7.10**	ppm	

Sample: M6865-7

Client Sample ID: MW-7 Collected: 01/08/2002 11:40

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/18/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	**1.67**	ppm	

Sample: M6865-8

Client Sample ID: MW-8 Collected: 01/08/2002 09:30

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/18/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	0.94	ppm	U

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01/18/2002

Total Organic Carbon - Method 415.1

Sample: M6865-9

Client Sample ID: MW-14 Collected: 01/08/2002 11:00

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/18/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	**2630**	ppm	

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01/18/2002

Case Narrative

VOLATILES:

The following compounds were calibrated at 25, 50, 100, 150 and 200 ppb levels in the initial calibration curve:

Acetone
2-Butanone
4-Methyl,2-pentanone
2-Hexanone

M&P-Xylenes were calibrated at 10, 40, 100, 200 and 300 ppb levels.

All other compounds were calibrated at 5, 20, 50, 100 and 150 ppb levels.

Samples were quantitated using the continuing calibration standard response factor as opposed to the initial calibration average response factor.

Reviewed by: _____

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01/18/2002

ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

U - The analytical result is a non-detect.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.

B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - The concentration of the analyte exceeded the calibration range of the instrument.

D - This flag identifies all compounds identified in an analysis at a secondary dilution. In the case of a surrogate this flag indicates a system mointoring compound diluted out.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

U - Entered when the analyte was analyzed for, but not detected.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.

Q - Qualifier specific entries and their meanings are as follows:

E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

A - Flame AA

AS - Semi-automated Spectrophotometric

AV - Automated Cold Vapor AA

C - Manual Spectrophotometric

F - Furnace AA

NR - when the analyte is not required to be analyzed.

P - ICP

T - Titrimetric

OTHER QUALIFIERS

ND - Not Detected

NA - Not Applicable

* - Outside Expected Range (NYCDEP Table I/II or Surrogate Limits)

ETL
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631-249-1456 • Fax: 631-249-8344

CHAIN OF CUSTODY DOCUMENT

Send Results To: [redacted]
Charlie Nehrig
PhotoCircuits

M 6865

Project Name: PhotoCircuits | Project Manager: Andy Barber
Project Address: 31 Sea Cliff Ave, Glen Cove, NY
Client | J/N: | ☐ Rush by / /
Sampler (Signature): | (Print): David Harry, Bryce Diamond

SAMPLE INFO — Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank. Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air; W = Wipe. *Air - Vol. (Liters) include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	Total # Cont.	601/602	BTX/BTEX	MTBE	624/8260/8021	625/8270/BN	PCB/Pesticides	Pet.Prods./8100M	RCRA Metals	pH/Flash/React	418.1 - TRPH	8260 B	TOC	Nitrate	Sulfate	Iron
1	1/8/1	1430	G	L	Smp-1	6											X	X	X	X	X
2	1/8/1	1230	↓	↓	DMP-1	↓											X	X	X	X	X
3	1/8/1	1455			SMP-3												X	X	X	X	X
4	1/8/1	1355			DMP-3												X	X	X	X	X
5	1/8/1	1605			Smp-4												X	X	X	X	X
6	1/8/1	1525			DMP-4												X	X	X	X	X
7	1/8/1	1140			MW-7												X	X	X	X	X
8	1/9/1	0930			MW-8												X	X	X	X	X
9	1/8/1	1100	↓	↓	MW-14	↓											X	X	X	X	X
10	1-8-1	–	B	L	TRIP BLANK	4											X				
11																					
12																					
13																					
14																					
15																					

Relinquished by (Signature):	Date / Time	Printed Name & Agent:	Received by (Signature):	Date / Time	Printed Name & Agent
David R. Harry	Date 1/9/01 Time 0830	David Harry Barton & Loguidice	[signature]	Date 1/12 Time	[signature]

Relinquished by (Signature):	Date / Time	Printed Name & Agent:	Received for Lab by (Signature):	Date / Time	Printed Name
	Date Time		[signature]	Date 1-9-01 Time 6:16	Glenn Weiner

Comments & Special Instructions	QA/QC Type:	Number & Type of Containers:	Preservatives:	Temp:
PER CHARLIE RUN TRIP BLANK		18-500P 9-250P	H2SO4 (9-500P)	4°C

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01/22/2002

Custody Document: M6868

Received: 01/10/2002 17:26
Sampled by: Dave Hanny

Client: Photo Circuits

31 Sea Cliff Avenue
Glen Cove,
NY 11542

Project: Photocircuits Corp.

31 Sea Cliff Avenue
Glen Cove,
NY

Manager: Andy Barber

Respectfully submitted,

Laboratory Manager

NYS Lab ID # 10969
NJ Cert. # 73812
CT Cert. # PH0645
MA Cert. # NY061
PA Cert. # 68-535
VA Cert. # 108
NH Cert. # 252592-BA
RI Cert. # 161

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-3

Client Sample ID: MW-12 Collected: 01/09/2002 14:45

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	B 672-9048	0.49	0.49	ppb	U
75-45-6	Chlorodifluoromethane	B 672-9048	0.21	0.21	ppb	U
74-87-3	Chloromethane	B 672-9048	0.49	0.49	ppb	U
75-01-4	Vinyl Chloride	C 388-6598	42.5	**298**	ppb	
74-83-9	Bromomethane	B 672-9048	0.43	0.43	ppb	U
75-00-3	Chloroethane	B 672-9048	0.61	**6.10**	ppb	
75-69-4	Trichlorofluoromethane	B 672-9048	0.24	0.24	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	B 672-9048	0.23	0.23	ppb	U
75-35-4	1,1-Dichloroethene	B 672-9048	0.30	**2.30**	ppb	
67-64-1	Acetone	B 672-9048	3.12	3.12	ppb	U
75-15-0	Carbon disulfide	B 672-9048	0.20	0.20	ppb	U
75-09-2	Methylene Chloride	B 672-9048	0.54	0.54	ppb	U
156-60-5	t-1,2-Dichloroethene	B 672-9048	0.20	**5.60**	ppb	
1634-04-4	Methyl t-butyl ether	B 672-9048	0.34	0.34	ppb	U
75-34-3	1,1-Dichloroethane	C 388-6598	12.5	**329**	ppb	
590-20-7	2,2-Dichloropropane	B 672-9048	0.18	0.18	ppb	U
156-59-2	c-1,2-Dichloroethene	C 388-6598	9.00	**430**	ppb	
78-93-3	2-Butanone	B 672-9048	5.00	5.00	ppb	U
74-97-5	Bromochloromethane	B 672-9048	0.27	0.27	ppb	U
67-66-3	Chloroform	B 672-9048	0.20	0.20	ppb	U
71-55-6	1,1,1-Trichloroethane	B 672-9048	0.22	0.22	ppb	U
56-23-5	Carbon Tetrachloride	B 672-9048	0.25	0.25	ppb	U
563-58-6	1,1-Dichloropropene	B 672-9048	0.59	0.59	ppb	U
71-43-2	Benzene	B 672-9048	0.16	**5.40**	ppb	
107-06-2	1,2-Dichloroethane	B 672-9048	0.23	**1.40**	ppb	
79-01-6	Trichloroethene	B 672-9048	0.16	**16.5**	ppb	
78-87-5	1,2-Dichloropropane	B 672-9048	0.36	0.36	ppb	U
74-95-3	Dibromomethane	B 672-9048	0.18	0.18	ppb	U
75-27-4	Bromodichloromethane	B 672-9048	0.15	0.15	ppb	U
110-75-8	2-Chloroethylvinylether	B 672-9048	0.13	0.13	ppb	U
10061-01-5	c-1,3-Dichloropropene	B 672-9048	0.16	0.16	ppb	U
108-10-1	4-Methyl-2-pentanone	B 672-9048	5.00	5.00	ppb	U
108-88-3	Toluene	B 672-9048	0.14	**5.60**	ppb	
10061-02-6	t-1,3-Dichloropropene	B 672-9048	0.080	0.080	ppb	U
79-00-5	1,1,2-Trichloroethane	B 672-9048	0.090	0.090	ppb	U
127-18-4	Tetrachloroethene	B 672-9048	0.24	0.24	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-3...continue

Client Sample ID: MW-12 Collected: 01/09/2002 14:45

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	B 672-9048	0.20	0.20	ppb	U
591-78-6	2-Hexanone	B 672-9048	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	B 672-9048	0.11	0.11	ppb	U
106-93-4	1,2-Dibromoethane	B 672-9048	0.10	0.10	ppb	U
108-90-7	Chlorobenzene	B 672-9048	0.15	0.15	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	B 672-9048	0.18	0.18	ppb	U
100-41-4	Ethylbenzene	B 672-9048	0.22	0.22	ppb	U
108-38-3	m,p-xylene	B 672-9048	0.42	0.42	ppb	U
95-47-6	o-xylene	B 672-9048	0.20	**2.30**	ppb	
100-42-5	Styrene	B 672-9048	0.17	0.17	ppb	U
75-25-2	Bromoform	B 672-9048	0.10	0.10	ppb	U
98-82-8	Isopropylbenzene	B 672-9048	0.25	0.25	ppb	U
108-86-1	Bromobenzene	B 672-9048	0.24	0.24	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	B 672-9048	0.16	0.16	ppb	U
103-65-1	n-Propylbenzene	B 672-9048	0.21	0.21	ppb	U
96-18-4	1,2,3-Trichloropropane	B 672-9048	0.21	0.21	ppb	U
622-96-8	p-Ethyltoluene	B 672-9048	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	B 672-9048	0.20	0.20	ppb	U
95-49-8	2-Chlorotoluene	C 388-6598	10.5	**2690**	ppb	
106-43-4	4-Chlorotoluene	B 672-9048	0.35	**82.8**	ppb	
98-06-6	tert-Butylbenzene	B 672-9048	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	B 672-9048	0.17	0.17	ppb	U
135-98-8	sec-Butylbenzene	B 672-9048	0.16	0.16	ppb	U
99-87-6	4-Isopropyltoluene	B 672-9048	0.24	0.24	ppb	U
541-73-1	1,3-Dichlorobenzene	B 672-9048	0.23	0.23	ppb	U
106-46-7	1,4-Dichlorobenzene	B 672-9048	0.23	0.23	ppb	U
95-50-1	1,2-Dichlorobenzene	B 672-9048	0.15	**0.99**	ppb	
105-05-5	p-Diethylbenzene	B 672-9048	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	B 672-9048	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	B 672-9048	0.26	0.26	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	B 672-9048	0.33	0.33	ppb	U
120-82-1	1,2,4-Trichlorobenzene	B 672-9048	0.22	0.22	ppb	U
87-68-3	Hexachlorobutadiene	B 672-9048	0.26	0.26	ppb	U
91-20-3	Naphthalene	B 672-9048	0.14	0.14	ppb	U
87-61-6	1,2,3-Trichlorobenzene	B 672-9048	0.17	0.17	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-3..continue

Client Sample ID: MW-12

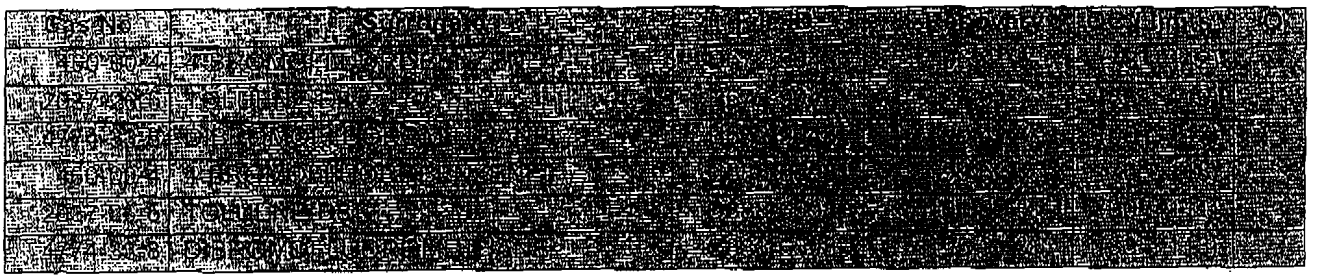
Collected: 01/09/2002 14:45

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-4

Client Sample ID: MW-13

Collected: 01/10/2002 09:00

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	B 672-9049	0.49	0.49	ppb	U
75-45-6	Chlorodifluoromethane	B 672-9049	0.21	0.21	ppb	U
74-87-3	Chloromethane	B 672-9049	0.49	0.49	ppb	U
75-01-4	Vinyl Chloride	B 672-9049	0.10	**112**	ppb	
74-83-9	Bromomethane	B 672-9049	0.43	0.43	ppb	U
75-00-3	Chloroethane	B 672-9049	0.61	0.61	ppb	U
75-69-4	Trichlorofluoromethane	B 672-9049	0.24	0.24	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	B 672-9049	0.23	0.23	ppb	U
75-35-4	1,1-Dichloroethene	B 672-9049	0.30	**75.5**	ppb	
67-64-1	Acetone	B 672-9049	3.12	**18.7**	ppb	
75-15-0	Carbon disulfide	B 672-9049	0.20	0.20	ppb	U
75-09-2	Methylene Chloride	B 672-9049	0.54	0.54	ppb	U
156-60-5	t-1,2-Dichloroethene	B 672-9049	0.20	**11.9**	ppb	
1634-04-4	Methyl t-butyl ether	B 672-9049	0.34	0.34	ppb	U
75-34-3	1,1-Dichloroethane	C 388-6599	12.5	**476**	ppb	
590-20-7	2,2-Dichloropropane	B 672-9049	0.18	0.18	ppb	U
156-59-2	c-1,2-Dichloroethene	C 388-6599	9.00	**1950**	ppb	
78-93-3	2-Butanone	B 672-9049	5.00	5.00	ppb	U
74-97-5	Bromochloromethane	B 672-9049	0.27	0.27	ppb	U
67-66-3	Chloroform	B 672-9049	0.20	**0.86**	ppb	
71-55-6	1,1,1-Trichloroethane	B 672-9049	0.22	**32.2**	ppb	
56-23-5	Carbon Tetrachloride	B 672-9049	0.25	0.25	ppb	U
563-58-6	1,1-Dichloropropene	B 672-9049	0.59	0.59	ppb	U
71-43-2	Benzene	B 672-9049	0.16	**8.00**	ppb	
107-06-2	1,2-Dichloroethane	B 672-9049	0.23	**2.80**	ppb	
79-01-6	Trichloroethene	C 388-6599	8.50	**216**	ppb	
78-87-5	1,2-Dichloropropane	B 672-9049	0.36	0.36	ppb	U
74-95-3	Dibromomethane	B 672-9049	0.18	0.18	ppb	U
75-27-4	Bromodichloromethane	B 672-9049	0.15	0.15	ppb	U
110-75-8	2-Chloroethylvinylether	B 672-9049	0.13	0.13	ppb	U
10061-01-5	c-1,3-Dichloropropene	B 672-9049	0.16	0.16	ppb	U
108-10-1	4-Methyl-2-pentanone	B 672-9049	5.00	5.00	ppb	U
108-88-3	Toluene	B 672-9049	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	B 672-9049	0.080	0.080	ppb	U
79-00-5	1,1,2-Trichloroethane	B 672-9049	0.090	0.090	ppb	U
127-18-4	Tetrachloroethene	C 388-6599	6.00	**216**	ppb	

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-4...continue
Client Sample ID: MW-13 Collected: 01/10/2002 09:00
Matrix: Liquid Type: Grab
Remarks: See Case Narrative
Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	B 672-9049	0.20	0.20	ppb	U
591-78-6	2-Hexanone	B 672-9049	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	B 672-9049	0.11	0.11	ppb	U
106-93-4	1,2-Dibromoethane	B 672-9049	0.10	0.10	ppb	U
108-90-7	Chlorobenzene	B 672-9049	0.15	0.15	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	B 672-9049	0.18	0.18	ppb	U
100-41-4	Ethylbenzene	B 672-9049	0.22	0.22	ppb	U
108-38-3	m,p-xylene	B 672-9049	0.42	0.42	ppb	U
95-47-6	o-xylene	B 672-9049	0.20	0.20	ppb	U
100-42-5	Styrene	B 672-9049	0.17	0.17	ppb	U
75-25-2	Bromoform	B 672-9049	0.10	0.10	ppb	U
98-82-8	Isopropylbenzene	B 672-9049	0.25	0.25	ppb	U
108-86-1	Bromobenzene	B 672-9049	0.24	0.24	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	B 672-9049	0.16	0.16	ppb	U
103-65-1	n-Propylbenzene	B 672-9049	0.21	0.21	ppb	U
96-18-4	1,2,3-Trichloropropane	B 672-9049	0.21	0.21	ppb	U
622-96-8	p-Ethyltoluene	B 672-9049	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	B 672-9049	0.20	0.20	ppb	U
95-49-8	2-Chlorotoluene	B 672-9049	0.27	**76.4**	ppb	
106-43-4	4-Chlorotoluene	B 672-9049	0.35	0.35	ppb	U
98-06-6	tert-Butylbenzene	B 672-9049	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	B 672-9049	0.17	0.17	ppb	U
135-98-8	sec-Butylbenzene	B 672-9049	0.16	0.16	ppb	U
99-87-6	4-Isopropyltoluene	B 672-9049	0.24	0.24	ppb	U
541-73-1	1,3-Dichlorobenzene	B 672-9049	0.23	0.23	ppb	U
106-46-7	1,4-Dichlorobenzene	B 672-9049	0.23	0.23	ppb	U
95-50-1	1,2-Dichlorobenzene	B 672-9049	0.15	0.15	ppb	U
105-05-5	p-Diethylbenzene	B 672-9049	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	B 672-9049	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	B 672-9049	0.26	0.26	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	B 672-9049	0.33	0.33	ppb	U
120-82-1	1,2,4-Trichlorobenzene	B 672-9049	0.22	0.22	ppb	U
87-68-3	Hexachlorobutadiene	B 672-9049	0.26	0.26	ppb	U
91-20-3	Naphthalene	B 672-9049	0.14	0.14	ppb	U
87-61-6	1,2,3-Trichlorobenzene	B 672-9049	0.17	0.17	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-4...continue

Client Sample ID: MW-13

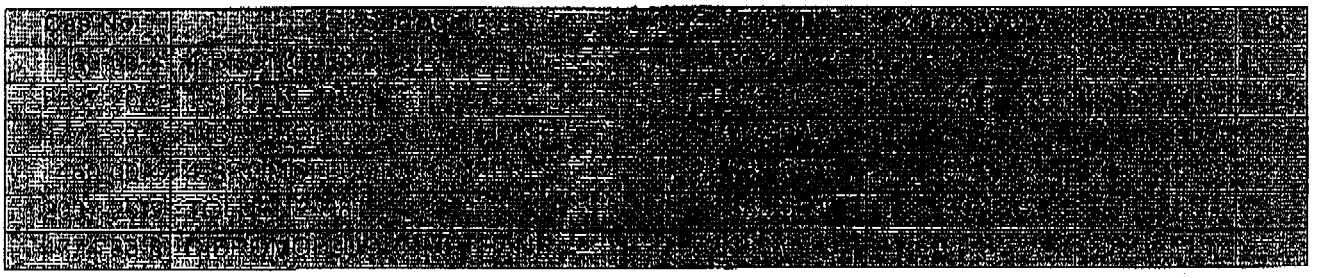
Collected: 01/10/2002 09:00

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-10

Client Sample ID: Trip Blank — Collected: 01/10/2002

Matrix: Liquid — Type: Blank

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	B 672-9041	0.49	0.49	ppb	U
75-45-6	Chlorodifluoromethane	B 672-9041	0.21	0.21	ppb	U
74-87-3	Chloromethane	B 672-9041	0.49	0.49	ppb	U
75-01-4	Vinyl Chloride	B 672-9041	0.10	0.10	ppb	U
74-83-9	Bromomethane	B 672-9041	0.43	0.43	ppb	U
75-00-3	Chloroethane	B 672-9041	0.61	0.61	ppb	U
75-69-4	Trichlorofluoromethane	B 672-9041	0.24	0.24	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	B 672-9041	0.23	0.23	ppb	U
75-35-4	1,1-Dichloroethene	B 672-9041	0.30	0.30	ppb	U
67-64-1	Acetone	B 672-9041	3.12	3.12	ppb	U
75-15-0	Carbon disulfide	B 672-9041	0.20	0.20	ppb	U
75-09-2	Methylene Chloride	B 672-9041	0.54	0.54	ppb	U
156-60-5	t-1,2-Dichloroethene	B 672-9041	0.20	0.20	ppb	U
1634-04-4	Methyl t-butyl ether	B 672-9041	0.34	0.34	ppb	U
75-34-3	1,1-Dichloroethane	B 672-9041	0.22	0.22	ppb	U
590-20-7	2,2-Dichloropropane	B 672-9041	0.18	0.18	ppb	U
156-59-2	c-1,2-Dichloroethene	B 672-9041	0.21	0.21	ppb	U
78-93-3	2-Butanone	B 672-9041	5.00	5.00	ppb	U
74-97-5	Bromochloromethane	B 672-9041	0.27	0.27	ppb	U
67-66-3	Chloroform	B 672-9041	0.20	0.20	ppb	U
71-55-6	1,1,1-Trichloroethane	B 672-9041	0.22	0.22	ppb	U
56-23-5	Carbon Tetrachloride	B 672-9041	0.25	0.25	ppb	U
563-58-6	1,1-Dichloropropene	B 672-9041	0.59	0.59	ppb	U
71-43-2	Benzene	B 672-9041	0.16	0.16	ppb	U
107-06-2	1,2-Dichloroethane	B 672-9041	0.23	0.23	ppb	U
79-01-6	Trichloroethene	B 672-9041	0.16	0.16	ppb	U
78-87-5	1,2-Dichloropropane	B 672-9041	0.36	0.36	ppb	U
74-95-3	Dibromomethane	B 672-9041	0.18	0.18	ppb	U
75-27-4	Bromodichloromethane	B 672-9041	0.15	0.15	ppb	U
110-75-8	2-Chloroethylvinylether	B 672-9041	0.13	0.13	ppb	U
10061-01-5	c-1,3-Dichloropropene	B 672-9041	0.16	0.16	ppb	U
108-10-1	4-Methyl-2-pentanone	B 672-9041	5.00	5.00	ppb	U
108-88-3	Toluene	B 672-9041	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	B 672-9041	0.080	0.080	ppb	U
79-00-5	1,1,2-Trichloroethane	B 672-9041	0.090	0.090	ppb	U
127-18-4	Tetrachloroethene	B 672-9041	0.24	0.24	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-10...continue
Client Sample ID: Trip Blank
Matrix: Liquid
Type: Blank
Collected: 01/10/2002
Remarks: See Case Narrative
Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	B 672-9041	0.20	0.20	ppb	U
591-78-6	2-Hexanone	B 672-9041	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	B 672-9041	0.11	0.11	ppb	U
106-93-4	1,2-Dibromoethane	B 672-9041	0.10	0.10	ppb	U
108-90-7	Chlorobenzene	B 672-9041	0.15	0.15	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	B 672-9041	0.18	0.18	ppb	U
100-41-4	Ethylbenzene	B 672-9041	0.22	0.22	ppb	U
108-38-3	m,p-xylene	B 672-9041	0.42	0.42	ppb	U
95-47-6	o-xylene	B 672-9041	0.20	0.20	ppb	U
100-42-5	Styrene	B 672-9041	0.17	0.17	ppb	U
75-25-2	Bromoform	B 672-9041	0.10	0.10	ppb	U
98-82-8	Isopropylbenzene	B 672-9041	0.25	0.25	ppb	U
108-86-1	Bromobenzene	B 672-9041	0.24	0.24	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	B 672-9041	0.16	0.16	ppb	U
103-65-1	n-Propylbenzene	B 672-9041	0.21	0.21	ppb	U
96-18-4	1,2,3-Trichloropropane	B 672-9041	0.21	0.21	ppb	U
622-96-8	p-Ethyltoluene	B 672-9041	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	B 672-9041	0.20	0.20	ppb	U
95-49-8	2-Chlorotoluene	B 672-9041	0.27	0.27	ppb	U
106-43-4	4-Chlorotoluene	B 672-9041	0.35	0.35	ppb	U
98-06-6	tert-Butylbenzene	B 672-9041	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	B 672-9041	0.17	0.17	ppb	U
135-98-8	sec-Butylbenzene	B 672-9041	0.16	0.16	ppb	U
99-87-6	4-Isopropyltoluene	B 672-9041	0.24	0.24	ppb	U
541-73-1	1,3-Dichlorobenzene	B 672-9041	0.23	0.23	ppb	U
106-46-7	1,4-Dichlorobenzene	B 672-9041	0.23	0.23	ppb	U
95-50-1	1,2-Dichlorobenzene	B 672-9041	0.15	0.15	ppb	U
105-05-5	p-Diethylbenzene	B 672-9041	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	B 672-9041	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	B 672-9041	0.26	0.26	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	B 672-9041	0.33	0.33	ppb	U
120-82-1	1,2,4-Trichlorobenzene	B 672-9041	0.22	0.22	ppb	U
87-68-3	Hexachlorobutadiene	B 672-9041	0.26	0.26	ppb	U
91-20-3	Naphthalene	B 672-9041	0.14	0.14	ppb	U
87-61-6	1,2,3-Trichlorobenzene	B 672-9041	0.17	0.17	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-10...continue

Client Sample ID: Trip Blank

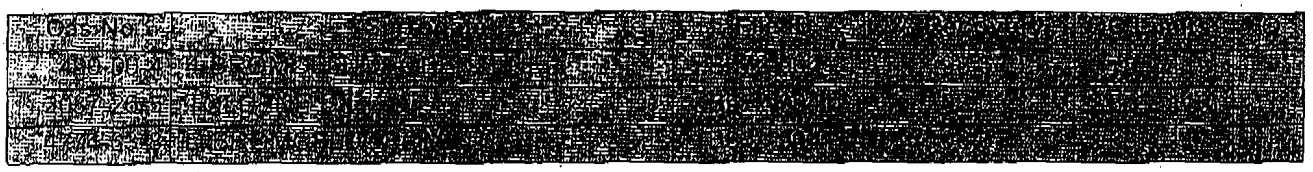
Collected: 01/10/2002

Matrix: Liquid

Type: Blank

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/22/2002

Iron, Total

Sample: M6868-3

Client Sample ID: MW-12 Collected: 01/09/2002 14:45

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	**61.0**	ppm	

Sample: M6868-4

Client Sample ID: MW-13 Collected: 01/10/2002 09:00

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Concentration	Units	Q
7439-89-6	Iron	0.096	**0.93**	ppm	

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01/22/2002

Nitrogen/Nitrate - EPA 353.2

Sample: M6868-3

Client Sample ID: MW-12 Collected: 01/09/2002 14:45

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/21/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.050	0.0050	ppm	J

Sample: M6868-4

Client Sample ID: MW-13 Collected: 01/10/2002 09:00

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/21/2002

Cas No	Analyte	MDL	Result	Units	Q
14797-55-8	Nitrate	0.050	3.54	ppm	

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01/22/2002

Sulfate - EPA 375.4

Sample: M6868-3

Client Sample ID: MW-12 Collected: 01/09/2002 14:45

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/19/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	0.16	418	ppm	

Sample: M6868-4

Client Sample ID: MW-13 Collected: 01/10/2002 09:00

Matrix: Liquid Type: Grab

Remarks:

Analyzed Date: 01/19/2002

Cas No	Analyte	MDL	Result	Units	Q
14808-79-8	Sulfate	0.78	648	ppm	

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01/22/2002

Total Organic Carbon - Method 415.1

Sample: M6868-3
Client Sample ID: MW-12 Collected: 01/09/2002 14:45
Matrix: Liquid Type: Grab
Remarks:
Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	0.94	ppm	U

Sample: M6868-4
Client Sample ID: MW-13 Collected: 01/10/2002 09:00
Matrix: Liquid Type: Grab
Remarks:
Analyzed Date: 01/14/2002

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.94	0.94	ppm	U

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01/22/2002

Case Narrative

8260

The following compounds were calibrated at 25, 50, 100, 150 and 200 ppb levels in the initial calibration curve:

Acetone
2-Butanone
4-Methyl-2-pentanone
2-Hexanone

M&P-Xylenes were calibrated at 10, 40, 100, 200 and 300 ppb levels.

All other compounds were calibrated at 5, 20, 50, 100 and 150 ppb levels.

Reviewed by: _____

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01/22/2002

ORGANIC METHOD QUALIFIERS

Q - Qualifier - specified entries and their meanings are as follows:

U - The analytical result is a non-detect.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.

B - The analyte was found in the associated method blank as well as the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - The concentration of the analyte exceeded the calibration range of the instrument.

D - This flag identifies all compounds identified in an analysis at a secondary dilution. In the case of a surrogate this flag indicates a system mointoring compound diluted out.

INORGANIC METHOD QUALIFIERS

C - (Concentration) qualifiers are as follows:

B - Entered if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL).

U - Entered when the analyte was analyzed for, but not detected.

J - Indicates an estimated value. The concentration reported was detected below the Method Detection Limit.

Q - Qualifier specific entries and their meanings are as follows:

E - Reported value is estimated because of the presence of interferences.

M - (Method) qualifiers are as follows:

A - Flame AA

AS - Semi-automated Spectrophotometric

AV - Automated Cold Vapor AA

C - Manual Spectrophotometric

F - Furnace AA

NR - when the analyte is not required to be analyzed.

P - ICP

T - Titrimetric

OTHER QUALIFIERS

ND - Not Detected

NA - Not Applicable

* - Outside Expected Range (NYCDEP Table I/II or Surrogate Limits)

Environmental Testing Laboratories, Inc.

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-6

Client Sample ID: MW-15 (45 A-Site) Collected: 01/10/2002 14:30

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	B672-9051	0.49	0.49	ppb	U
75-45-6	Chlorodifluoromethane	B672-9051	0.21	0.21	ppb	U
74-87-3	Chloromethane	B672-9051	0.49	0.49	ppb	U
75-01-4	Vinyl Chloride	B672-9051	0.10	0.10	ppb	U
74-83-9	Bromomethane	B672-9051	0.43	0.43	ppb	U
75-00-3	Chloroethane	B672-9051	0.61	0.61	ppb	U
75-69-4	Trichlorofluoromethane	B672-9051	0.24	0.24	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	B672-9051	0.23	0.23	ppb	U
75-35-4	1,1-Dichloroethene	B672-9051	0.30	0.30	ppb	U
67-64-1	Acetone	B672-9051	3.12	3.12	ppb	U
75-15-0	Carbon disulfide	B672-9051	0.20	0.20	ppb	U
75-09-2	Methylene Chloride	B672-9051	0.54	0.54	ppb	U
156-60-5	t-1,2-Dichloroethene	B672-9051	0.20	0.20	ppb	U
1634-04-4	Methyl t-butyl ether	B672-9051	0.34	0.34	ppb	U
75-34-3	1,1-Dichloroethane	B672-9051	0.22	0.22	ppb	U
590-20-7	2,2-Dichloropropane	B672-9051	0.18	0.18	ppb	U
156-59-2	c-1,2-Dichloroethene	B672-9051	0.21	0.21	ppb	U
78-93-3	2-Butanone	B672-9051	5.00	5.00	ppb	U
74-97-5	Bromochloromethane	B672-9051	0.27	0.27	ppb	U
67-66-3	Chloroform	B672-9051	0.20	0.20	ppb	U
71-55-6	1,1,1-Trichloroethane	B672-9051	0.22	0.22	ppb	U
56-23-5	Carbon Tetrachloride	B672-9051	0.25	0.25	ppb	U
563-58-6	1,1-Dichloropropene	B672-9051	0.59	0.59	ppb	U
71-43-2	Benzene	B672-9051	0.16	0.16	ppb	U
107-06-2	1,2-Dichloroethane	B672-9051	0.23	0.23	ppb	U
79-01-6	Trichloroethene	B672-9051	0.16	0.16	ppb	U
78-87-5	1,2-Dichloropropane	B672-9051	0.36	0.36	ppb	U
74-95-3	Dibromomethane	B672-9051	0.18	0.18	ppb	U
75-27-4	Bromodichloromethane	B672-9051	0.15	0.15	ppb	U
110-75-8	2-Chloroethylvinylether	B672-9051	0.13	0.13	ppb	U
10061-01-5	c-1,3-Dichloropropene	B672-9051	0.16	0.16	ppb	U
108-10-1	4-Methyl-2-pentanone	B672-9051	5.00	5.00	ppb	U
108-88-3	Toluene	B672-9051	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	B672-9051	0.080	0.080	ppb	U
79-00-5	1,1,2-Trichloroethane	B672-9051	0.090	0.090	ppb	U
127-18-4	Tetrachloroethene	B672-9051	0.24	7.40	ppb	

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-6...continue

Client Sample ID: MW-15 (45 A-Site) Collected: 01/10/2002 14:30

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	B 672-9051	0.20	0.20	ppb	U
591-78-6	2-Hexanone	B 672-9051	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	B 672-9051	0.11	0.11	ppb	U
106-93-4	1,2-Dibromoethane	B 672-9051	0.10	0.10	ppb	U
108-90-7	Chlorobenzene	B 672-9051	0.15	0.15	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	B 672-9051	0.18	0.18	ppb	U
100-41-4	Ethylbenzene	B 672-9051	0.22	0.22	ppb	U
108-38-3	m,p-xylene	B 672-9051	0.42	0.42	ppb	U
95-47-6	o-xylene	B 672-9051	0.20	0.20	ppb	U
100-42-5	Styrene	B 672-9051	0.17	0.17	ppb	U
75-25-2	Bromoform	B 672-9051	0.10	0.10	ppb	U
98-82-8	Isopropylbenzene	B 672-9051	0.25	0.25	ppb	U
108-86-1	Bromobenzene	B 672-9051	0.24	0.24	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	B 672-9051	0.16	0.16	ppb	U
103-65-1	n-Propylbenzene	B 672-9051	0.21	0.21	ppb	U
96-18-4	1,2,3-Trichloropropane	B 672-9051	0.21	0.21	ppb	U
622-96-8	p-Ethyltoluene	B 672-9051	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	B 672-9051	0.20	0.20	ppb	U
95-49-8	2-Chlorotoluene	B 672-9051	0.27	0.27	ppb	U
106-43-4	4-Chlorotoluene	B 672-9051	0.35	0.35	ppb	U
98-06-6	tert-Butylbenzene	B 672-9051	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	B 672-9051	0.17	0.17	ppb	U
135-98-8	sec-Butylbenzene	B 672-9051	0.16	0.16	ppb	U
99-87-6	4-Isopropyltoluene	B 672-9051	0.24	0.24	ppb	U
541-73-1	1,3-Dichlorobenzene	B 672-9051	0.23	0.23	ppb	U
106-46-7	1,4-Dichlorobenzene	B 672-9051	0.23	0.23	ppb	U
95-50-1	1,2-Dichlorobenzene	B 672-9051	0.15	0.15	ppb	U
105-05-5	p-Diethylbenzene	B 672-9051	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	B 672-9051	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	B 672-9051	0.26	0.26	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	B 672-9051	0.33	0.33	ppb	U
120-82-1	1,2,4-Trichlorobenzene	B 672-9051	0.22	0.22	ppb	U
87-68-3	Hexachlorobutadiene	B 672-9051	0.26	0.26	ppb	U
91-20-3	Naphthalene	B 672-9051	0.14	0.14	ppb	U
87-61-6	1,2,3-Trichlorobenzene	B 672-9051	0.17	0.17	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-6...continue

Client Sample ID: MW-15 (45 A-Site)

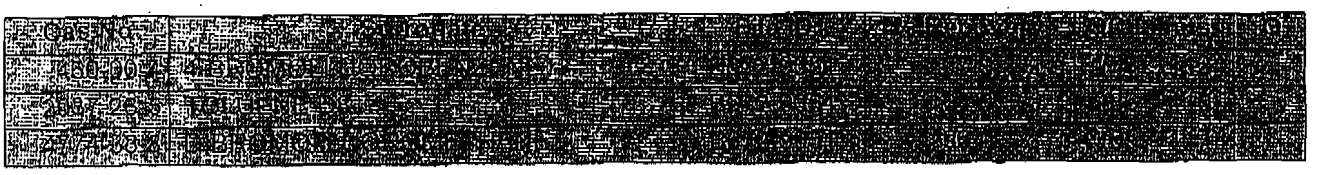
Collected: 01/10/2002 14:30

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-7

Client Sample ID: MW-25 (45 A-Site) Collected: 01/10/2002 15:30

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	B 672-9052	0.49	0.49	ppb	U
75-45-6	Chlorodifluoromethane	B 672-9052	0.21	0.21	ppb	U
74-87-3	Chloromethane	B 672-9052	0.49	0.49	ppb	U
75-01-4	Vinyl Chloride	B 672-9052	0.10	0.10	ppb	U
74-83-9	Bromomethane	B 672-9052	0.43	0.43	ppb	U
75-00-3	Chloroethane	B 672-9052	0.61	0.61	ppb	U
75-69-4	Trichlorofluoromethane	B 672-9052	0.24	0.24	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	B 672-9052	0.23	0.23	ppb	U
75-35-4	1,1-Dichloroethene	B 672-9052	0.30	0.30	ppb	U
67-64-1	Acetone	B 672-9052	3.12	3.12	ppb	U
75-15-0	Carbon disulfide	B 672-9052	0.20	0.20	ppb	U
75-09-2	Methylene Chloride	B 672-9052	0.54	0.54	ppb	U
156-60-5	t-1,2-Dichloroethene	B 672-9052	0.20	0.20	ppb	U
1634-04-4	Methyl t-butyl ether	B 672-9052	0.34	0.34	ppb	U
75-34-3	1,1-Dichloroethane	B 672-9052	0.22	0.22	ppb	U
590-20-7	2,2-Dichloropropane	B 672-9052	0.18	0.18	ppb	U
156-59-2	c-1,2-Dichloroethene	B 672-9052	0.21	0.21	ppb	U
78-93-3	2-Butanone	B 672-9052	5.00	5.00	ppb	U
74-97-5	Bromochloromethane	B 672-9052	0.27	0.27	ppb	U
67-66-3	Chloroform	B 672-9052	0.20	0.20	ppb	U
71-55-6	1,1,1-Trichloroethane	B 672-9052	0.22	0.22	ppb	U
56-23-5	Carbon Tetrachloride	B 672-9052	0.25	0.25	ppb	U
563-58-6	1,1-Dichloropropene	B 672-9052	0.59	0.59	ppb	U
71-43-2	Benzene	B 672-9052	0.16	0.16	ppb	U
107-06-2	1,2-Dichloroethane	B 672-9052	0.23	0.23	ppb	U
79-01-6	Trichloroethene	B 672-9052	0.16	0.16	ppb	U
78-87-5	1,2-Dichloropropane	B 672-9052	0.36	0.36	ppb	U
74-95-3	Dibromomethane	B 672-9052	0.18	0.18	ppb	U
75-27-4	Bromodichloromethane	B 672-9052	0.15	0.15	ppb	U
110-75-8	2-Chloroethylvinylether	B 672-9052	0.13	0.13	ppb	U
10061-01-5	c-1,3-Dichloropropene	B 672-9052	0.16	0.16	ppb	U
108-10-1	4-Methyl-2-pentanone	B 672-9052	5.00	5.00	ppb	U
108-88-3	Toluene	B 672-9052	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	B 672-9052	0.080	0.080	ppb	U
79-00-5	1,1,2-Trichloroethane	B 672-9052	0.090	0.090	ppb	U
127-18-4	Tetrachloroethene	B 672-9052	0.24	0.24	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-7...continue

Client Sample ID: MW-25 (45 A-Site) Collected: 01/10/2002 15:30

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	B 672-9052	0.20	0.20	ppb	U
591-78-6	2-Hexanone	B 672-9052	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	B 672-9052	0.11	0.11	ppb	U
106-93-4	1,2-Dibromoethane	B 672-9052	0.10	0.10	ppb	U
108-90-7	Chlorobenzene	B 672-9052	0.15	0.15	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	B 672-9052	0.18	0.18	ppb	U
100-41-4	Ethylbenzene	B 672-9052	0.22	0.22	ppb	U
108-38-3	m,p-xylene	B 672-9052	0.42	0.42	ppb	U
95-47-6	o-xylene	B 672-9052	0.20	0.20	ppb	U
100-42-5	Styrene	B 672-9052	0.17	0.17	ppb	U
75-25-2	Bromoform	B 672-9052	0.10	0.10	ppb	U
98-82-8	Isopropylbenzene	B 672-9052	0.25	0.25	ppb	U
108-86-1	Bromobenzene	B 672-9052	0.24	0.24	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	B 672-9052	0.16	0.16	ppb	U
103-65-1	n-Propylbenzene	B 672-9052	0.21	0.21	ppb	U
96-18-4	1,2,3-Trichloropropane	B 672-9052	0.21	0.21	ppb	U
622-96-8	p-Ethyltoluene	B 672-9052	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	B 672-9052	0.20	0.20	ppb	U
95-49-8	2-Chlorotoluene	B 672-9052	0.27	0.27	ppb	U
106-43-4	4-Chlorotoluene	B 672-9052	0.35	0.35	ppb	U
98-06-6	tert-Butylbenzene	B 672-9052	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	B 672-9052	0.17	0.17	ppb	U
135-98-8	sec-Butylbenzene	B 672-9052	0.16	0.16	ppb	U
99-87-6	4-Isopropyltoluene	B 672-9052	0.24	0.24	ppb	U
541-73-1	1,3-Dichlorobenzene	B 672-9052	0.23	0.23	ppb	U
106-46-7	1,4-Dichlorobenzene	B 672-9052	0.23	0.23	ppb	U
95-50-1	1,2-Dichlorobenzene	B 672-9052	0.15	0.15	ppb	U
105-05-5	p-Diethylbenzene	B 672-9052	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	B 672-9052	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	B 672-9052	0.26	0.26	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	B 672-9052	0.33	0.33	ppb	U
120-82-1	1,2,4-Trichlorobenzene	B 672-9052	0.22	0.22	ppb	U
87-68-3	Hexachlorobutadiene	B 672-9052	0.26	0.26	ppb	U
91-20-3	Naphthalene	B 672-9052	0.14	0.14	ppb	U
87-61-6	1,2,3-Trichlorobenzene	B 672-9052	0.17	0.17	ppb	U

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01/22/2002

Volatiles - EPA 8260B

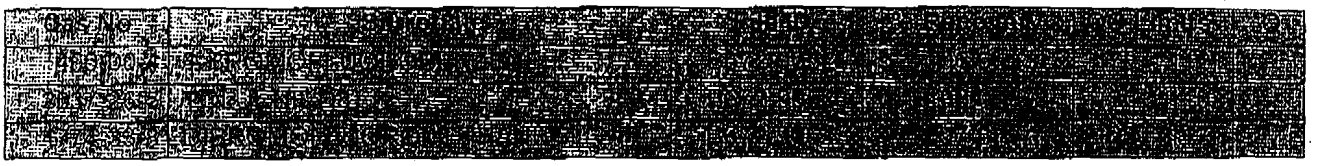
Sample: M6868-7...continue

Client Sample ID: MW-25 (45 A-Site) Collected: 01/10/2002 15:30

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-8

Client Sample ID: MW-35 (45 A-Site) Collected: 01/10/2002 14:05

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	B 672-9053	0.49	0.49	ppb	U
75-45-6	Chlorodifluoromethane	B 672-9053	0.21	0.21	ppb	U
74-87-3	Chloromethane	B 672-9053	0.49	0.49	ppb	U
75-01-4	Vinyl Chloride	B 672-9053	0.10	0.10	ppb	U
74-83-9	Bromomethane	B 672-9053	0.43	0.43	ppb	U
75-00-3	Chloroethane	B 672-9053	0.61	0.61	ppb	U
75-69-4	Trichlorofluoromethane	B 672-9053	0.24	0.24	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	B 672-9053	0.23	0.23	ppb	U
75-35-4	1,1-Dichloroethene	B 672-9053	0.30	0.30	ppb	U
67-64-1	Acetone	B 672-9053	3.12	3.12	ppb	U
75-15-0	Carbon disulfide	B 672-9053	0.20	0.20	ppb	U
75-09-2	Methylene Chloride	B 672-9053	0.54	0.54	ppb	U
156-60-5	t-1,2-Dichloroethene	B 672-9053	0.20	0.20	ppb	U
1634-04-4	Methyl t-butyl ether	B 672-9053	0.34	0.34	ppb	U
75-34-3	1,1-Dichloroethane	B 672-9053	0.22	0.22	ppb	U
590-20-7	2,2-Dichloropropane	B 672-9053	0.18	0.18	ppb	U
156-59-2	c-1,2-Dichloroethene	B 672-9053	0.21	**2.40**	ppb	
78-93-3	2-Butanone	B 672-9053	5.00	5.00	ppb	U
74-97-5	Bromochloromethane	B 672-9053	0.27	0.27	ppb	U
67-66-3	Chloroform	B 672-9053	0.20	0.20	ppb	U
71-55-6	1,1,1-Trichloroethane	B 672-9053	0.22	0.22	ppb	U
56-23-5	Carbon Tetrachloride	B 672-9053	0.25	0.25	ppb	U
563-58-6	1,1-Dichloropropene	B 672-9053	0.59	0.59	ppb	U
71-43-2	Benzene	B 672-9053	0.16	0.16	ppb	U
107-06-2	1,2-Dichloroethane	B 672-9053	0.23	0.23	ppb	U
79-01-6	Trichloroethene	B 672-9053	0.16	**96.7**	ppb	
78-87-5	1,2-Dichloropropane	B 672-9053	0.36	0.36	ppb	U
74-95-3	Dibromomethane	B 672-9053	0.18	0.18	ppb	U
75-27-4	Bromodichloromethane	B 672-9053	0.15	0.15	ppb	U
110-75-8	2-Chloroethylvinylether	B 672-9053	0.13	0.13	ppb	U
10061-01-5	c-1,3-Dichloropropene	B 672-9053	0.16	0.16	ppb	U
108-10-1	4-Methyl-2-pentanone	B 672-9053	5.00	5.00	ppb	U
108-88-3	Toluene	B 672-9053	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	B 672-9053	0.080	0.080	ppb	U
79-00-5	1,1,2-Trichloroethane	B 672-9053	0.090	0.090	ppb	U
127-18-4	Tetrachloroethene	B 672-9053	0.24	**9.60**	ppb	

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-8...continue
Client Sample ID: MW-35 (45 A-Site) Collected: 01/10/2002 14:05
Matrix: Liquid Type: Grab
Remarks: See Case Narrative
Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	B 672-9053	0.20	0.20	ppb	U
591-78-6	2-Hexanone	B 672-9053	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	B 672-9053	0.11	0.11	ppb	U
106-93-4	1,2-Dibromoethane	B 672-9053	0.10	0.10	ppb	U
108-90-7	Chlorobenzene	B 672-9053	0.15	0.15	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	B 672-9053	0.18	0.18	ppb	U
100-41-4	Ethylbenzene	B 672-9053	0.22	0.22	ppb	U
108-38-3	m,p-xylene	B 672-9053	0.42	0.42	ppb	U
95-47-6	o-xylene	B 672-9053	0.20	0.20	ppb	U
100-42-5	Styrene	B 672-9053	0.17	0.17	ppb	U
75-25-2	Bromoform	B 672-9053	0.10	0.10	ppb	U
98-82-8	Isopropylbenzene	B 672-9053	0.25	0.25	ppb	U
108-86-1	Bromobenzene	B 672-9053	0.24	0.24	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	B 672-9053	0.16	0.16	ppb	U
103-65-1	n-Propylbenzene	B 672-9053	0.21	0.21	ppb	U
96-18-4	1,2,3-Trichloropropane	B 672-9053	0.21	0.21	ppb	U
622-96-8	p-Ethyltoluene	B 672-9053	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	B 672-9053	0.20	0.20	ppb	U
95-49-8	2-Chlorotoluene	B 672-9053	0.27	0.27	ppb	U
106-43-4	4-Chlorotoluene	B 672-9053	0.35	0.35	ppb	U
98-06-6	tert-Butylbenzene	B 672-9053	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	B 672-9053	0.17	0.17	ppb	U
135-98-8	sec-Butylbenzene	B 672-9053	0.16	0.16	ppb	U
99-87-6	4-Isopropyltoluene	B 672-9053	0.24	0.24	ppb	U
541-73-1	1,3-Dichlorobenzene	B 672-9053	0.23	0.23	ppb	U
106-46-7	1,4-Dichlorobenzene	B 672-9053	0.23	0.23	ppb	U
95-50-1	1,2-Dichlorobenzene	B 672-9053	0.15	0.15	ppb	U
105-05-5	p-Diethylbenzene	B 672-9053	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	B 672-9053	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	B 672-9053	0.26	0.26	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	B 672-9053	0.33	0.33	ppb	U
120-82-1	1,2,4-Trichlorobenzene	B 672-9053	0.22	0.22	ppb	U
87-68-3	Hexachlorobutadiene	B 672-9053	0.26	0.26	ppb	U
91-20-3	Naphthalene	B 672-9053	0.14	0.14	ppb	U
87-61-6	1,2,3-Trichlorobenzene	B 672-9053	0.17	0.17	ppb	U

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01/22/2002

Volatiles - EPA 8260B

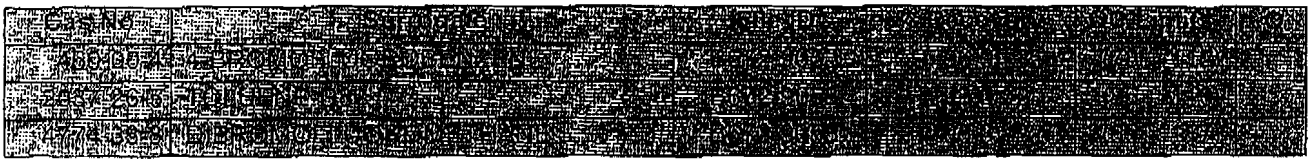
Sample: M6868-8...continue

Client Sample ID: MW-35 (45 A-Site) Collected: 01/10/2002 14:05

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-9

Client Sample ID: MW-45 (45 A-Site) Collected: 01/10/2002 15:40

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	B 672-9054	0.49	0.49	ppb	U
75-45-6	Chlorodifluoromethane	B 672-9054	0.21	0.21	ppb	U
74-87-3	Chloromethane	B 672-9054	0.49	0.49	ppb	U
75-01-4	Vinyl Chloride	B 672-9054	0.10	0.10	ppb	U
74-83-9	Bromomethane	B 672-9054	0.43	0.43	ppb	U
75-00-3	Chloroethane	B 672-9054	0.61	0.61	ppb	U
75-69-4	Trichlorofluoromethane	B 672-9054	0.24	0.24	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	B 672-9054	0.23	0.23	ppb	U
75-35-4	1,1-Dichloroethene	B 672-9054	0.30	0.30	ppb	U
67-64-1	Acetone	B 672-9054	3.12	3.12	ppb	U
75-15-0	Carbon disulfide	B 672-9054	0.20	0.20	ppb	U
75-09-2	Methylene Chloride	B 672-9054	0.54	0.54	ppb	U
156-60-5	t-1,2-Dichloroethene	B 672-9054	0.20	0.20	ppb	U
1634-04-4	Methyl t-butyl ether	B 672-9054	0.34	0.34	ppb	U
75-34-3	1,1-Dichloroethane	B 672-9054	0.22	0.22	ppb	U
590-20-7	2,2-Dichloropropane	B 672-9054	0.18	0.18	ppb	U
156-59-2	c-1,2-Dichloroethene	B 672-9054	0.21	**3.40**	ppb	
78-93-3	2-Butanone	B 672-9054	5.00	5.00	ppb	U
74-97-5	Bromochloromethane	B 672-9054	0.27	0.27	ppb	U
67-66-3	Chloroform	B 672-9054	0.20	0.20	ppb	U
71-55-6	1,1,1-Trichloroethane	B 672-9054	0.22	0.22	ppb	U
56-23-5	Carbon Tetrachloride	B 672-9054	0.25	0.25	ppb	U
563-58-6	1,1-Dichloropropene	B 672-9054	0.59	0.59	ppb	U
71-43-2	Benzene	B 672-9054	0.16	0.16	ppb	U
107-06-2	1,2-Dichloroethane	B 672-9054	0.23	0.23	ppb	U
79-01-6	Trichloroethene	B 672-9054	0.16	**20.7**	ppb	
78-87-5	1,2-Dichloropropane	B 672-9054	0.36	0.36	ppb	U
74-95-3	Dibromomethane	B 672-9054	0.18	0.18	ppb	U
75-27-4	Bromodichloromethane	B 672-9054	0.15	0.15	ppb	U
110-75-8	2-Chloroethylvinylether	B 672-9054	0.13	0.13	ppb	U
10061-01-5	c-1,3-Dichloropropene	B 672-9054	0.16	0.16	ppb	U
108-10-1	4-Methyl-2-pentanone	B 672-9054	5.00	5.00	ppb	U
108-88-3	Toluene	B 672-9054	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	B 672-9054	0.080	0.080	ppb	U
79-00-5	1,1,2-Trichloroethane	B 672-9054	0.090	0.090	ppb	U
127-18-4	Tetrachloroethene	C 388-6602	6.00	**1240**	ppb	

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-9...continue

Client Sample ID: MW-45 (45 A-Site) Collected: 01/10/2002 15:40

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	B 672-9054	0.20	0.20	ppb	U
591-78-6	2-Hexanone	B 672-9054	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	B 672-9054	0.11	0.11	ppb	U
106-93-4	1,2-Dibromoethane	B 672-9054	0.10	0.10	ppb	U
108-90-7	Chlorobenzene	B 672-9054	0.15	0.15	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	B 672-9054	0.18	0.18	ppb	U
100-41-4	Ethylbenzene	B 672-9054	0.22	0.22	ppb	U
108-38-3	m,p-xylene	B 672-9054	0.42	0.42	ppb	U
95-47-6	o-xylene	B 672-9054	0.20	0.20	ppb	U
100-42-5	Styrene	B 672-9054	0.17	0.17	ppb	U
75-25-2	Bromoform	B 672-9054	0.10	0.10	ppb	U
98-82-8	Isopropylbenzene	B 672-9054	0.25	0.25	ppb	U
108-86-1	Bromobenzene	B 672-9054	0.24	0.24	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	B 672-9054	0.16	0.16	ppb	U
103-65-1	n-Propylbenzene	B 672-9054	0.21	0.21	ppb	U
96-18-4	1,2,3-Trichloropropane	B 672-9054	0.21	0.21	ppb	U
622-96-8	p-Ethyltoluene	B 672-9054	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	B 672-9054	0.20	0.20	ppb	U
95-49-8	2-Chlorotoluene	B 672-9054	0.27	0.27	ppb	U
106-43-4	4-Chlorotoluene	B 672-9054	0.35	0.35	ppb	U
98-06-6	tert-Butylbenzene	B 672-9054	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	B 672-9054	0.17	0.17	ppb	U
135-98-8	sec-Butylbenzene	B 672-9054	0.16	0.16	ppb	U
99-87-6	4-Isopropyltoluene	B 672-9054	0.24	0.24	ppb	U
541-73-1	1,3-Dichlorobenzene	B 672-9054	0.23	0.23	ppb	U
106-46-7	1,4-Dichlorobenzene	B 672-9054	0.23	0.23	ppb	U
95-50-1	1,2-Dichlorobenzene	B 672-9054	0.15	0.15	ppb	U
105-05-5	p-Diethylbenzene	B 672-9054	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	B 672-9054	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	B 672-9054	0.26	0.26	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	B 672-9054	0.33	0.33	ppb	U
120-82-1	1,2,4-Trichlorobenzene	B 672-9054	0.22	0.22	ppb	U
87-68-3	Hexachlorobutadiene	B 672-9054	0.26	0.26	ppb	U
91-20-3	Naphthalene	B 672-9054	0.14	0.14	ppb	U
87-61-6	1,2,3-Trichlorobenzene	B 672-9054	0.17	0.17	ppb	U

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01/22/2002

Volatiles - EPA 8260B

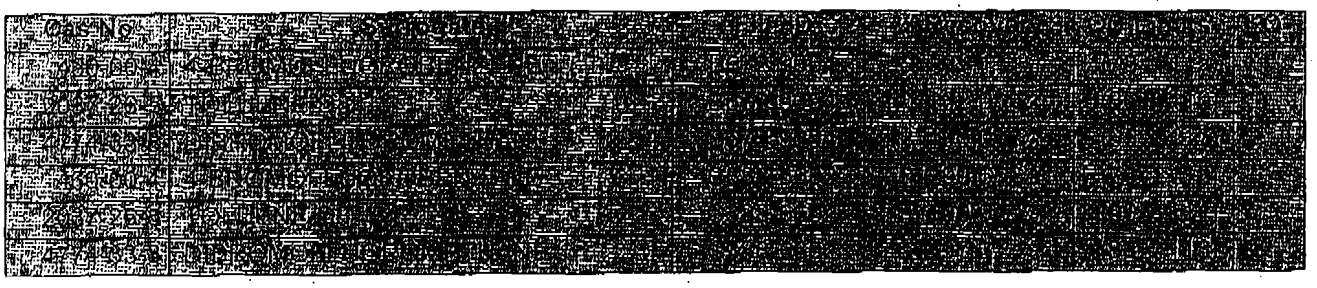
Sample: M6868-9...continue

Client Sample ID: MW-45 (45 A-Site) Collected: 01/10/2002 15:40

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-1
Client Sample ID: MW-9
Matrix: Liquid
Type: Grab
Collected: 01/09/2002 13:00
Remarks: See Case Narrative
Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	B 672-9046	0.49	0.49	ppb	U
75-45-6	Chlorodifluoromethane	B 672-9046	0.21	0.21	ppb	U
74-87-3	Chloromethane	B 672-9046	0.49	0.49	ppb	U
7 75-01-4	Vinyl Chloride VC	B 672-9046	0.10	0.10	ppb	U
74-83-9	Bromomethane	B 672-9046	0.43	0.43	ppb	U
3 75-00-3	Chloroethane CA	B 672-9046	0.61	0.61	ppb	U
75-69-4	Trichlorofluoromethane	B 672-9046	0.24	0.24	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	B 672-9046	0.23	0.23	ppb	U
6 75-35-4	1,1-Dichloroethene 11DCE	B 672-9046	0.30	0.30	ppb	U
67-64-1	Acetone	B 672-9046	3.12	3.12	ppb	U
75-15-0	Carbon disulfide	B 672-9046	0.20	0.20	ppb	U
75-09-2	Methylene Chloride	B 672-9046	0.54	0.54	ppb	U
156-60-5	t-1,2-Dichloroethene	B 672-9046	0.20	0.20	ppb	U
1634-04-4	Methyl t-butyl ether	B 672-9046	0.34	0.34	ppb	U
2 75-34-3	1,1-Dichloroethane 11DCA	B 672-9046	0.22	0.22	ppb	U
590-20-7	2,2-Dichloropropane	B 672-9046	0.18	0.18	ppb	U
156-59-2	c-1,2-Dichloroethene	B 672-9046	0.21	0.21	ppb	U
78-93-3	2-Butanone	B 672-9046	5.00	5.00	ppb	U
74-97-5	Bromochloromethane	B 672-9046	0.27	0.27	ppb	U
67-66-3	Chloroform	B 672-9046	0.20	0.20	ppb	U
1 71-55-6	1,1,1-Trichloroethane 111TCA	B 672-9046	0.22	0.22	ppb	U
56-23-5	Carbon Tetrachloride	B 672-9046	0.25	0.25	ppb	U
563-58-6	1,1-Dichloropropene	B 672-9046	0.59	0.59	ppb	U
71-43-2	Benzene	B 672-9046	0.16	0.16	ppb	U
107-06-2	1,2-Dichloroethane	B 672-9046	0.23	0.23	ppb	U
5 79-01-6	Trichloroethene TCE	B 672-9046	0.16	0.16	ppb	U
78-87-5	1,2-Dichloropropane	B 672-9046	0.36	0.36	ppb	U
74-95-3	Dibromomethane	B 672-9046	0.18	0.18	ppb	U
75-27-4	Bromodichloromethane	B 672-9046	0.15	0.15	ppb	U
110-75-8	2-Chloroethylvinylether	B 672-9046	0.13	0.13	ppb	U
10061-01-5	c-1,3-Dichloropropene	B 672-9046	0.16	0.16	ppb	U
108-10-1	4-Methyl-2-pentanone	B 672-9046	5.00	5.00	ppb	U
108-88-3	Toluene	B 672-9046	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	B 672-9046	0.080	0.080	ppb	U
79-00-5	1,1,2-Trichloroethane	B 672-9046	0.090	0.090	ppb	U
4 127-18-4	Tetrachloroethene PCE	B 672-9046	0.24	0.24	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-1...continue
Client Sample ID: MW-9
Matrix: Liquid
Type: Grab
Collected: 01/09/2002 13:00
Remarks: See Case Narrative
Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	B 672-9046	0.20	0.20	ppb	U
591-78-6	2-Hexanone	B 672-9046	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	B 672-9046	0.11	0.11	ppb	U
106-93-4	1,2-Dibromoethane	B 672-9046	0.10	0.10	ppb	U
108-90-7	Chlorobenzene	B 672-9046	0.15	0.15	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	B 672-9046	0.18	0.18	ppb	U
100-41-4	Ethylbenzene	B 672-9046	0.22	0.22	ppb	U
108-38-3	m,p-xylene	B 672-9046	0.42	0.42	ppb	U
95-47-6	o-xylene	B 672-9046	0.20	0.20	ppb	U
100-42-5	Styrene	B 672-9046	0.17	0.17	ppb	U
75-25-2	Bromoform	B 672-9046	0.10	0.10	ppb	U
98-82-8	Isopropylbenzene	B 672-9046	0.25	0.25	ppb	U
108-86-1	Bromobenzene	B 672-9046	0.24	0.24	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	B 672-9046	0.16	0.16	ppb	U
103-65-1	n-Propylbenzene	B 672-9046	0.21	0.21	ppb	U
96-18-4	1,2,3-Trichloropropane	B 672-9046	0.21	0.21	ppb	U
622-96-8	p-Ethyltoluene	B 672-9046	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	B 672-9046	0.20	0.20	ppb	U
95-49-8	2-Chlorotoluene	B 672-9046	0.27	0.27	ppb	U
106-43-4	4-Chlorotoluene	B 672-9046	0.35	0.35	ppb	U
98-06-6	tert-Butylbenzene	B 672-9046	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	B 672-9046	0.17	0.17	ppb	U
135-98-8	sec-Butylbenzene	B 672-9046	0.16	0.16	ppb	U
99-87-6	4-Isopropyltoluene	B 672-9046	0.24	0.24	ppb	U
541-73-1	1,3-Dichlorobenzene	B 672-9046	0.23	0.23	ppb	U
106-46-7	1,4-Dichlorobenzene	B 672-9046	0.23	0.23	ppb	U
95-50-1	1,2-Dichlorobenzene	B 672-9046	0.15	0.15	ppb	U
105-05-5	p-Diethylbenzene	B 672-9046	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	B 672-9046	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	B 672-9046	0.26	0.26	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	B 672-9046	0.33	0.33	ppb	U
120-82-1	1,2,4-Trichlorobenzene	B 672-9046	0.22	0.22	ppb	U
87-68-3	Hexachlorobutadiene	B 672-9046	0.26	0.26	ppb	U
91-20-3	Naphthalene	B 672-9046	0.14	0.14	ppb	U
87-61-6	1,2,3-Trichlorobenzene	B 672-9046	0.17	0.17	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-1...continue

Client Sample ID: MW-9

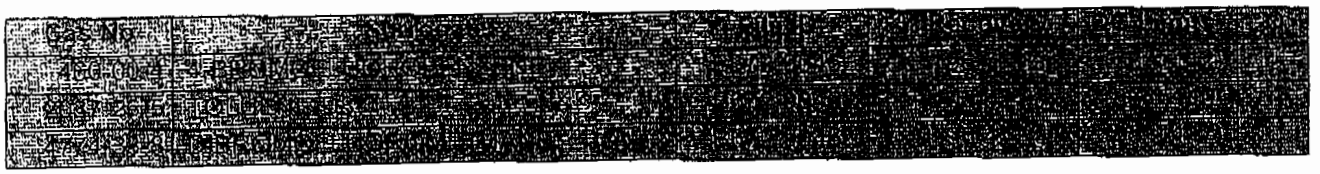
Matrix: Liquid

Type: Grab

Collected: 01/09/2002 13:00

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-2

Client Sample ID: MW-10 Collected: 01/09/2002 18:00

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	B 672-9047	0.49	0.49	ppb	U
75-45-6	Chlorodifluoromethane	B 672-9047	0.21	0.21	ppb	U
74-87-3	Chloromethane	B 672-9047	0.49	0.49	ppb	U
75-01-4	Vinyl Chloride VC	B 672-9047	0.10	**2.70**	ppb	
74-83-9	Bromomethane	B 672-9047	0.43	0.43	ppb	U
75-00-3	Chloroethane CA	B 672-9047	0.61	**20.0**	ppb	
75-69-4	Trichlorofluoromethane	B 672-9047	0.24	0.24	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	B 672-9047	0.23	0.23	ppb	U
75-35-4	1,1-Dichloroethene 11DCE	B 672-9047	0.30	**50.3**	ppb	
67-64-1	Acetone	B 672-9047	3.12	3.12	ppb	U
75-15-0	Carbon disulfide	B 672-9047	0.20	0.20	ppb	U
75-09-2	Methylene Chloride	B 672-9047	0.54	0.54	ppb	U
156-60-5	t-1,2-Dichloroethene	B 672-9047	0.20	0.20	ppb	U
1634-04-4	Methyl t-butyl ether	B 672-9047	0.34	0.34	ppb	U
75-34-3	1,1-Dichloroethane 11DCA	C 388-6612	2.50	**206**	ppb	
590-20-7	2,2-Dichloropropane	B 672-9047	0.18	0.18	ppb	U
156-59-2	c-1,2-Dichloroethene	C 388-6612	1.80	**231**	ppb	
78-93-3	2-Butanone	B 672-9047	5.00	5.00	ppb	U
74-97-5	Bromochloromethane	B 672-9047	0.27	0.27	ppb	U
67-66-3	Chloroform	B 672-9047	0.20	0.20	ppb	U
71-55-6	1,1,1-Trichloroethane 111TCA	B 672-9047	0.22	0.22	ppb	U
56-23-5	Carbon Tetrachloride	B 672-9047	0.25	0.25	ppb	U
563-58-6	1,1-Dichloropropene	B 672-9047	0.59	0.59	ppb	U
71-43-2	Benzene	B 672-9047	0.16	0.16	ppb	U
107-06-2	1,2-Dichloroethane	B 672-9047	0.23	**5.00**	ppb	
79-01-6	Trichloroethene TCE	B 672-9047	0.16	**6.70**	ppb	
78-87-5	1,2-Dichloropropane	B 672-9047	0.36	0.36	ppb	U
74-95-3	Dibromomethane	B 672-9047	0.18	0.18	ppb	U
75-27-4	Bromodichloromethane	B 672-9047	0.15	0.15	ppb	U
110-75-8	2-Chloroethylvinylether	B 672-9047	0.13	0.13	ppb	U
10061-01-5	c-1,3-Dichloropropene	B 672-9047	0.16	0.16	ppb	U
108-10-1	4-Methyl-2-pentanone	B 672-9047	5.00	5.00	ppb	U
108-88-3	Toluene	B 672-9047	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	B 672-9047	0.080	0.080	ppb	U
79-00-5	1,1,2-Trichloroethane	B 672-9047	0.090	0.090	ppb	U
127-18-4	Tetrachloroethene PCE	B 672-9047	0.24	**2.30**	ppb	

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-2...continue

Client Sample ID: MW-10 Collected: 01/09/2002 18:00

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/15/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	B 672-9047	0.20	0.20	ppb	U
591-78-6	2-Hexanone	B 672-9047	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	B 672-9047	0.11	0.11	ppb	U
106-93-4	1,2-Dibromoethane	B 672-9047	0.10	0.10	ppb	U
108-90-7	Chlorobenzene	B 672-9047	0.15	0.15	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	B 672-9047	0.18	0.18	ppb	U
100-41-4	Ethylbenzene	B 672-9047	0.22	0.22	ppb	U
108-38-3	m,p-xylene	B 672-9047	0.42	0.42	ppb	U
95-47-6	o-xylene	B 672-9047	0.20	0.20	ppb	U
100-42-5	Styrene	B 672-9047	0.17	0.17	ppb	U
75-25-2	Bromoform	B 672-9047	0.10	0.10	ppb	U
98-82-8	Isopropylbenzene	B 672-9047	0.25	0.25	ppb	U
108-86-1	Bromobenzene	B 672-9047	0.24	0.24	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	B 672-9047	0.16	0.16	ppb	U
103-65-1	n-Propylbenzene	B 672-9047	0.21	0.21	ppb	U
96-18-4	1,2,3-Trichloropropane	B 672-9047	0.21	0.21	ppb	U
622-96-8	p-Ethyltoluene	B 672-9047	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	B 672-9047	0.20	0.20	ppb	U
95-49-8	2-Chlorotoluene	B 672-9047	0.27	0.27	ppb	U
106-43-4	4-Chlorotoluene	B 672-9047	0.35	0.35	ppb	U
98-06-6	tert-Butylbenzene	B 672-9047	0.24	0.24	ppb	U
95-63-6	1,2,4-Trimethylbenzene	B 672-9047	0.17	0.17	ppb	U
135-98-8	sec-Butylbenzene	B 672-9047	0.16	0.16	ppb	U
99-87-6	4-Isopropyltoluene	B 672-9047	0.24	0.24	ppb	U
541-73-1	1,3-Dichlorobenzene	B 672-9047	0.23	0.23	ppb	U
106-46-7	1,4-Dichlorobenzene	B 672-9047	0.23	0.23	ppb	U
95-50-1	1,2-Dichlorobenzene	B 672-9047	0.15	0.15	ppb	U
105-05-5	p-Diethylbenzene	B 672-9047	0.24	0.24	ppb	U
104-51-8	n-Butylbenzene	B 672-9047	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	B 672-9047	0.26	0.26	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	B 672-9047	0.33	0.33	ppb	U
120-82-1	1,2,4-Trichlorobenzene	B 672-9047	0.22	0.22	ppb	U
87-68-3	Hexachlorobutadiene	B 672-9047	0.26	0.26	ppb	U
91-20-3	Naphthalene	B 672-9047	0.14	0.14	ppb	U
87-61-6	1,2,3-Trichlorobenzene	B 672-9047	0.17	0.17	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-2...continue

Client Sample ID: MW-10

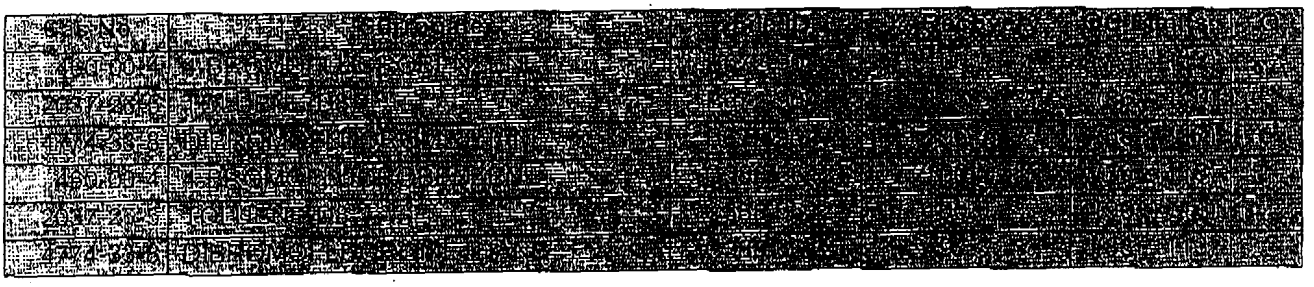
Matrix: Liquid

Type: Grab

Collected:01/09/2002 18:00

Remarks: See Case Narrative

Analyzed Date: 01/15/2002



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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-5

Client Sample ID: MW-11 Collected: 01/10/2002 13:00

Matrix: Liquid Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/17/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
75-71-8	Dichlorodifluoromethane	C 388-6601	0.24	0.24	ppb	U
75-45-6	Chlorodifluoromethane	C 388-6601	0.21	0.21	ppb	U
74-87-3	Chloromethane	C 388-6601	0.85	0.85	ppb	U
75-01-4	Vinyl Chloride VC	C 388-6601	0.85	0.85	ppb	U
74-83-9	Bromomethane	C 388-6601	0.65	0.65	ppb	U
75-00-3	Chloroethane CA	C 388-6601	0.67	0.67	ppb	U
75-69-4	Trichlorofluoromethane	C 388-6601	0.12	0.12	ppb	U
76-13-1	1,1,2-Trichlorotrifluoroethane	C 388-6601	0.19	0.19	ppb	U
75-35-4	1,1-Dichloroethene 11DCE	C 388-6601	0.22	0.22	ppb	U
67-64-1	Acetone	C 388-6601	2.30	2.30	ppb	U
75-15-0	Carbon disulfide	C 388-6601	0.33	0.33	ppb	U
75-09-2	Methylene Chloride	C 388-6601	0.37	0.37	ppb	U
156-60-5	t-1,2-Dichloroethene	C 388-6601	0.28	0.28	ppb	U
1634-04-4	Methyl t-butyl ether	C 388-6601	0.18	0.18	ppb	U
75-34-3	1,1-Dichloroethane 11DCA	C 388-6601	0.25	0.25	ppb	U
590-20-7	2,2-Dichloropropane	C 388-6601	0.30	0.30	ppb	U
156-59-2	c-1,2-Dichloroethene	C 388-6601	0.18	0.18	ppb	U
78-93-3	2-Butanone	C 388-6601	17.2	17.2	ppb	U
74-97-5	Bromochloromethane	C 388-6601	0.15	0.15	ppb	U
67-66-3	Chloroform	C 388-6601	0.22	0.22	ppb	U
71-55-6	1,1,1-Trichloroethane 111TCA	C 388-6601	0.14	0.14	ppb	U
56-23-5	Carbon Tetrachloride	C 388-6601	0.10	0.10	ppb	U
563-58-6	1,1-Dichloropropene	C 388-6601	0.18	0.18	ppb	U
71-43-2	Benzene	C 388-6601	0.17	0.17	ppb	U
107-06-2	1,2-Dichloroethane	C 388-6601	0.16	0.16	ppb	U
79-01-6	Trichloroethene TCE	C 388-6601	0.17	0.17	ppb	U
78-87-5	1,2-Dichloropropane	C 388-6601	0.14	0.14	ppb	U
74-95-3	Dibromomethane	C 388-6601	0.16	0.16	ppb	U
75-27-4	Bromodichloromethane	C 388-6601	0.16	0.16	ppb	U
110-75-8	2-Chloroethylvinylether	C 388-6601	0.29	0.29	ppb	U
10061-01-5	c-1,3-Dichloropropene	C 388-6601	0.22	0.22	ppb	U
108-10-1	4-Methyl-2-pentanone	C 388-6601	9.00	9.00	ppb	U
108-88-3	Toluene	C 388-6601	0.14	0.14	ppb	U
10061-02-6	t-1,3-Dichloropropene	C 388-6601	0.14	0.14	ppb	U
79-00-5	1,1,2-Trichloroethane	C 388-6601	0.19	0.19	ppb	U
127-18-4	Tetrachloroethene PCE	C 388-6601	0.12	0.12	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-5...continue
Client Sample ID: MW-11
Matrix: Liquid
Type: Grab
Collected: 01/10/2002 13:00
Remarks: See Case Narrative
Analyzed Date: 01/17/2002

Cas No	Analyte	File ID	MDL	Concentration	Units	Q
142-28-9	1,3-Dichloropropane	C 388-6601	0.12	0.12	ppb	U
591-78-6	2-Hexanone	C 388-6601	5.00	5.00	ppb	U
124-48-1	Dibromochloromethane	C 388-6601	0.17	0.17	ppb	U
106-93-4	1,2-Dibromoethane	C 388-6601	0.19	0.19	ppb	U
108-90-7	Chlorobenzene	C 388-6601	0.19	0.19	ppb	U
630-20-6	1,1,1,2-Tetrachloroethane	C 388-6601	0.15	0.15	ppb	U
100-41-4	Ethylbenzene	C 388-6601	0.16	0.16	ppb	U
108-38-3	m,p-xylene	C 388-6601	0.21	0.21	ppb	U
95-47-6	o-xylene	C 388-6601	0.16	0.16	ppb	U
100-42-5	Styrene	C 388-6601	0.13	0.13	ppb	U
75-25-2	Bromoform	C 388-6601	0.27	0.27	ppb	U
98-82-8	Isopropylbenzene	C 388-6601	0.10	0.10	ppb	U
108-86-1	Bromobenzene	C 388-6601	0.21	0.21	ppb	U
79-34-5	1,1,2,2-Tetrachloroethane	C 388-6601	0.15	0.15	ppb	U
103-65-1	n-Propylbenzene	C 388-6601	0.14	0.14	ppb	U
96-18-4	1,2,3-Trichloropropane	C 388-6601	0.24	0.24	ppb	U
622-96-8	p-Ethyltoluene	C 388-6601	0.24	0.24	ppb	U
108-67-8	1,3,5-Trimethylbenzene	C 388-6601	0.12	0.12	ppb	U
95-49-8	2-Chlorotoluene	C 388-6601	0.21	0.21	ppb	U
106-43-4	4-Chlorotoluene	C 388-6601	0.16	0.16	ppb	U
98-06-6	tert-Butylbenzene	C 388-6601	0.13	0.13	ppb	U
95-63-6	1,2,4-Trimethylbenzene	C 388-6601	0.13	0.13	ppb	U
135-98-8	sec-Butylbenzene	C 388-6601	0.080	0.080	ppb	U
99-87-6	4-Isopropyltoluene	C 388-6601	0.10	0.10	ppb	U
541-73-1	1,3-Dichlorobenzene	C 388-6601	0.15	0.15	ppb	U
106-46-7	1,4-Dichlorobenzene	C 388-6601	0.15	0.15	ppb	U
95-50-1	1,2-Dichlorobenzene	C 388-6601	0.14	0.14	ppb	U
105-05-5	p-Diethylbenzene	C 388-6601	0.27	0.27	ppb	U
104-51-8	n-Butylbenzene	C 388-6601	0.14	0.14	ppb	U
95-93-2	1,2,4,5-Tetramethylbenzene	C 388-6601	0.27	0.27	ppb	U
96-12-8	1,2-Dibromo-3-chloropropane	C 388-6601	0.50	0.50	ppb	U
120-82-1	1,2,4-Trichlorobenzene	C 388-6601	0.25	0.25	ppb	U
87-68-3	Hexachlorobutadiene	C 388-6601	0.24	0.24	ppb	U
91-20-3	Naphthalene	C 388-6601	0.27	0.27	ppb	U
87-61-6	1,2,3-Trichlorobenzene	C 388-6601	0.38	0.38	ppb	U

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01/22/2002

Volatiles - EPA 8260B

Sample: M6868-5...continue

Client Sample ID: MW-11

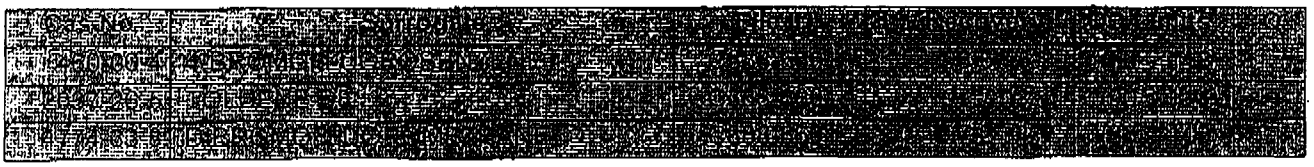
Collected: 01/10/2002 13:00

Matrix: Liquid

Type: Grab

Remarks: See Case Narrative

Analyzed Date: 01/17/2002



ETL
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208 Route 109 • Farmingdale • New York 11735
631-249-1456 • Fax: 631-249-8344

CHAIN OF CUSTODY DOCUMENT

Results to Charlie Nehrig Photocircuits

M 6668

Project Name: PhotoCircuits	Project Manager: Andy Barber	Sampler (Signature):	(Print): Dave Hanny
Project Address: 31 Sea Cliff Ave. Glen Cove, NY			
Client PhotoCircuits J/N:	☐ Rush by / /		

SAMPLE INFO Type: SS = Split Spoon; G = Grab; C = Composite; B = Blank; Matrix: L = Liquid; S = Soil; SL = Sludge; A* = Air, W = Wipe; *Air - Vol. (Liters) Include: Flow (CFM)

ID	Date	Time	Type	Matrix	Sample Location	Total. # Cont.	601/602	BTX/BTEX	MTBE	624/8260/8021	625/8270/BN	PCB/Pesticides	Pet.Prods./8100M	RCRA Metals	pH/Flash/React	418.1 - TRPH	8260 B	TOC	Nitrate	Sulfate	IRON
1	1/9/02	1300	G	L	mw-9	2										X					
2	1/9/02	1800			mw-10	2										X					
3	1/9/02	1445			mw-12	6										X	X	X	X	X	
4	1/10/02	0900			mw-13	6										X	X	X	X	X	
5	1/10/02	1300			mw-11	2										X					
6	1/10/02	1420			mw-15 (45 A-site)	2										X					
7	1/10/02	1530			mw-20 (45 A-site)	2										X					
8	1/10/02	1405			mw-30 (45 A-site)	2										X					
9	1/10/02	1540			mw-45 (45 A-site)	2										X					
10					Trip Blank	2										X					
11																					
12																					
13																					
14																					
15																					

Relinquished by (Signature):	Date 1/10/02 Time 1725	Printed Name & Agent: David Hanny (Barber)	Received by (Signature):	Date Time	Printed Name & Agent
Relinquished by (Signature):	Date Time	Printed Name & Agent:	Received for Lab by (Signature):	Date Time 1136	Printed Name Ben Berg
Comments & Special Instructions		QA/QC Type:	Number & Type of Containers: 4- 500P 2-250P	Preservatives: H_2SO_4 HNO_3	Temp: 4°C