Barton & Loguidice, P.C.
Consulting Engineers

The experience to listen.
The power to solve.

March 17, 2004

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
Fourth Quarter 2003 Progress Report

File: 643.001

Dear Mr. Jones:

Enclosed please find three copies of the Fourth Quarter 2003 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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FOURTH QUARTER 2003
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

January, 2004

1.0 Introduction

This Fourth Quarter 2003 Progress Report (4Q03) 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 Fourth Quarter of 2003, the following was accomplished:

- One groundwater sampling event was conducted for monitoring wells located on both the 31 and 45A Sea Cliff Avenue sites during the period of December 16-17.
- Operation of the Soil Vapor Extraction (SVE) and Air Sparging (AS) system at the 45A Sea Cliff Avenue site was continued through the fourth quarter of 2003.
- Operation of the hydraulic control system at the 31 Sea Cliff Avenue site was continued.

2.0 Discussion of Results

2.1 SVE System at 31 Sea Cliff Avenue

The SVE system is in the process of being decommissioned.

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. By letter dated October 25, 2001, NYSDEC authorized an additional injection of substrate that had been recommended by Photocircuits. A first phase of additional substrate injection was conducted during the period of February 25 to March 3, 2002; during this period, slightly over 5,000 gallons of substrate was injected (as reported in the 1Q 02 report). On April 29, 2002, an additional injection of 5,777 gallons of substrate was injected using the injection points that had been installed during the February-March injection event. Sampling events conducted in 2002 were January 8-10, April 2-4, June 25-26 and October 2-3. Sampling in 2003 was conducted on January 13-15 and April 28-29.

The most recent sampling event was conducted on December 16-17, 2003; the results from the December 2003 sampling event are provided in Appendix A of this report (Note: well MW-7 was not sampled during this event as it was filled with oil substrate).

A status report on the pilot test (including the data from the samples collected in December 2003) was prepared by Terra Systems and is included as Appendix B of this report. The main conclusions 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 160 ug/L per day of total volatile organic compounds (TVOCs) have been observed in areas of higher concentration.

- A first order degradation half life of 533 days was calculated for the average total VOC concentration within the pilot cell area (January 2003 data); this degradation rate suggests that 90% of the total VOC mass within the pilot test cell will be removed within 48 months.

- The newly injected edible oil substrate appears to be adequately distributed.

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

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.

Based on results from the January 2002 groundwater 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, 2002 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, 2002 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. The trailer and carbon vessels were moved in April, and electrical service was also provided to the new location April. Piping and mechanical connections were completed in early May; the original blower malfunctioned and a smaller replacement blower was installed.

The SVE portion of the system was started on May 8, 2002, and a sample of the total system effluent, prior to treatment, was collected; tetrachloroethene was detected at a concentration of 5.3 ppmv. Another effluent sample was collected on June 26; tetrachloroethene was detected at a concentration of 142 ppmv and trichloroethene was detected at a concentration of 2 ppmv. Further sampling in 2002 was conducted on October 3, December 12 (tetrachloroethene was detected at 1.2 and 1.1 ppmv in these two samples, respectively). The AS portion of the system was started on December 11, 2002. On May 1, 2003, the system was modified to also extract vapor from monitoring well MW-4S; the well was fitted with a cap and connected to the SVE portion of the system. Concentrations of tetrachloroethene in effluent samples for 2003 are provided in the following table:

Concentrations of tetrachloroethene (ppmv) in AS/SVE system effluent				
Jan-03	May-03	May-03	Aug-03	Dec-03
1.0	0.9	1.1	1.1	0.03

Concentrations of tetrachloroethene (ug/L) in samples from monitoring well MW-4S over time are summarized in the following table:

Concentrations of tetrachloroethene (ug/L) in MW-4S							
Jan-02	Apr-02	Jun-02	Oct-02	Jan-03	Apr-03	Aug-03	Dec-03
1240	1910	2200	2510	3600	1420	118	180

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, 2002 and the remedial design report was submitted to NYSDEC on April 11, 2002. NYSDEC approval of the remedial design was received in a letter dated September 19, 2002.

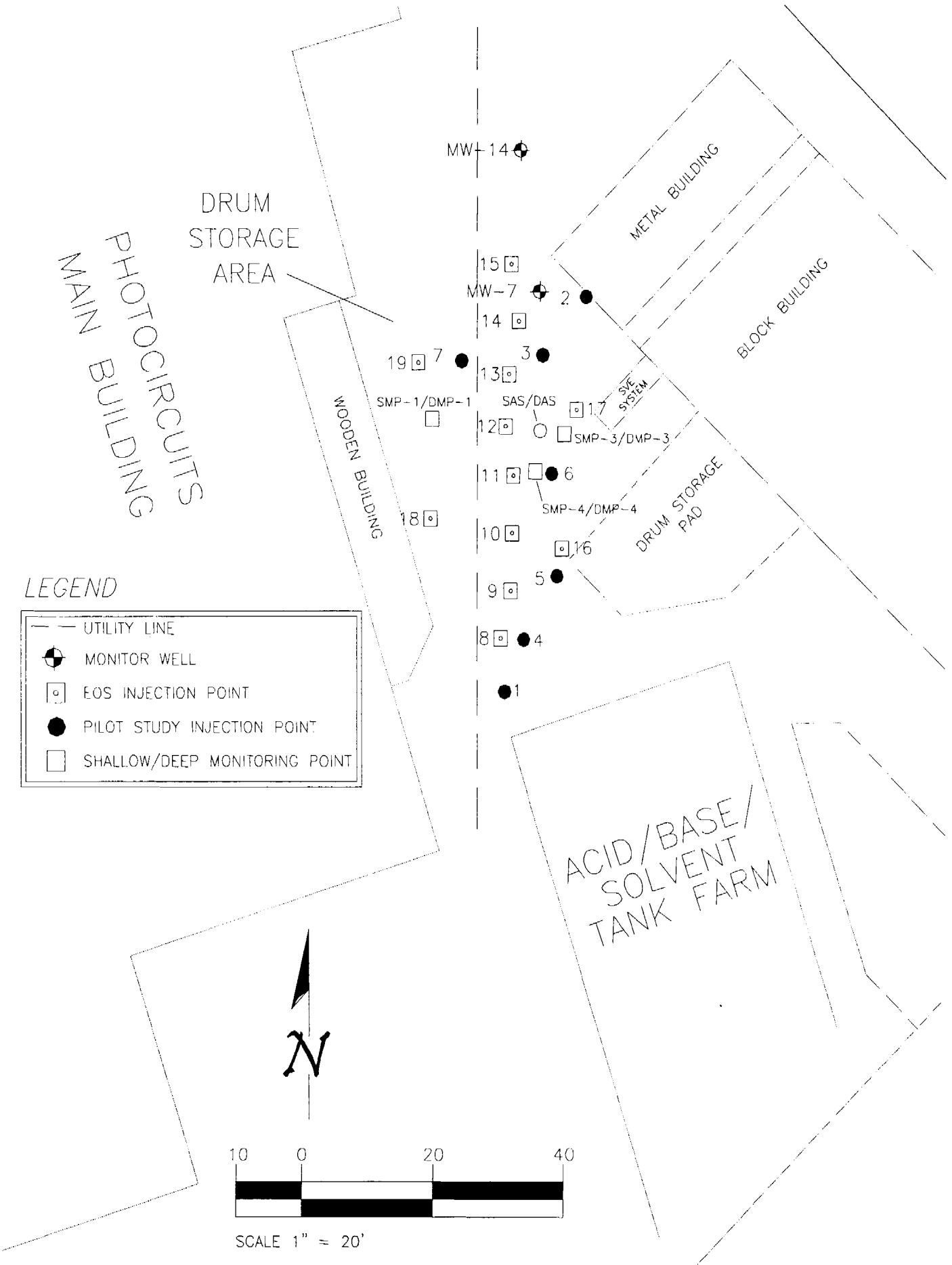
Four recovery wells were installed in January, 2003. The fifth recovery well could not be installed due to the proximity of numerous underground utility lines. Groundwater modeling conducted for the design of the hydraulic control system (appended to the remedial design report/work plan) indicates that configuration of the four wells is also capable of providing hydraulic control in the subject area. The wells were installed to depths of 80 feet below grade and were constructed as described in the work plan.

The pumps, piping and control systems were installed during the week of April 28, 2003. The layout of the piping and controls are provided on the attached figure. The system was started up on May 1, 2003, with each well pumping at an initial flow rate of one gallon per minute (gpm). On May 20, the pumping rate for each well was increased to three gpm. Data and figures presented in the 2Q03 Report demonstrated that hydraulic control was being achieved in the area hydraulically downgradient of the bioremediation pilot test area. During the August sampling event, it was noted that the pumping rate of the wells had reduced to roughly one gpm, although the pump controllers had not been adjusted. We believe that the reduction in pumping resulted from an interruption in the compressed air supply to the pumps; compressed air is supplied by the facility, and

periodic interruptions occur due to maintenance activities. Because the pump controllers are pneumatic, the pump cycle logic re-sets upon re-start. We had planned to provide a back-up compressed air supply to allow the pumps to maintain the three gpm pumping rate, however, an accumulation of weathered soybean oil was detected in well MW-14 during the December 2003 sampling event. This well is located directly downgradient of the bioremediation pilot test area; fresh soybean oil was found in this well on three occasions in 2002, but has not been detected for roughly a year. We believe that the presence of the weathered soybean oil indicates that the hydraulic control system has not only been collecting contaminated groundwater, but may have accelerated the movement of contaminants from the bioremediation pilot test area. As a result, we plan to operate the hydraulic control system at the lower flow rate (roughly 1 gpm per well) and to re-evaluate the issue based on data from the next monitoring event.

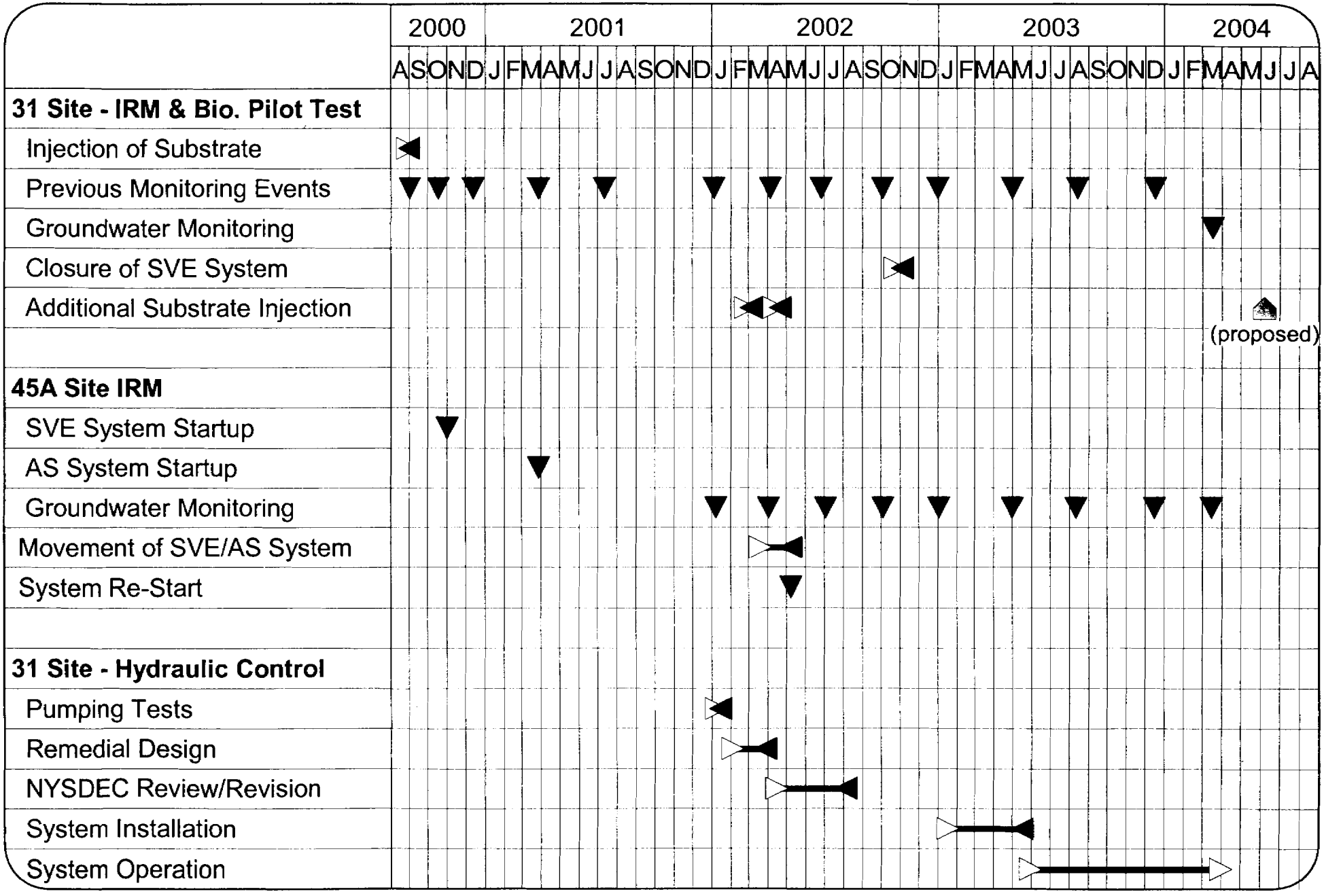
3.0 Schedule

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


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

Photocircuits - Updated Schedule of Remedial Activities

31 & 45 Sea Cliff Avenue Sites



December 31, 2003

Bryan Tiskowitz
Photocircuits Corporation
31 Sea Cliff Avenue
Glen Cove, NY 11542

TEL: (516) 609-1779
FAX (516) 609-1257

RE: Photocircuits 31 Sea Cliff Ave. Glen Cove,

Order No.: 0312106

Dear Bryan Tiskowitz:

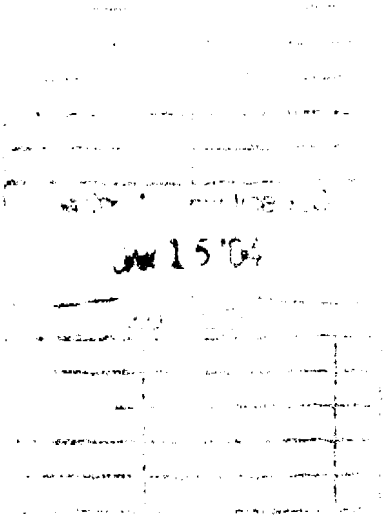
American Analytical Laboratories received 17 samples on 12/17/2003 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Lori Beyer
Lab Director



American Analytical Laboratories

Date: *31-Dec-03*

CLIENT: Photocircuits Corporation
Project: Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.
Lab Order: 0312106

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0312106-01A	SMP-1		12/16/2003	12/17/2003
0312106-01B	SMP-1		12/16/2003	12/17/2003
0312106-01C	SMP-1		12/16/2003	12/17/2003
0312106-02A	DMP-1		12/16/2003	12/17/2003
0312106-02B	DMP-1		12/16/2003	12/17/2003
0312106-02C	DMP-1		12/16/2003	12/17/2003
0312106-03A	SMP-3		12/16/2003	12/17/2003
0312106-03B	SMP-3		12/16/2003	12/17/2003
0312106-03C	SMP-3		12/16/2003	12/17/2003
0312106-04A	DMP-3		12/16/2003	12/17/2003
0312106-04B	DMP-3		12/16/2003	12/17/2003
0312106-04C	DMP-3		12/16/2003	12/17/2003
0312106-05A	SMP-4		12/16/2003	12/17/2003
0312106-05B	SMP-4		12/16/2003	12/17/2003
0312106-05C	SMP-4		12/16/2003	12/17/2003
0312106-06A	DMP-4		12/16/2003	12/17/2003
0312106-06B	DMP-4		12/16/2003	12/17/2003
0312106-06C	DMP-4		12/16/2003	12/17/2003
0312106-07A	MW-8		12/16/2003	12/17/2003
0312106-07B	MW-8		12/16/2003	12/17/2003
0312106-07C	MW-8		12/16/2003	12/17/2003
0312106-08A	MW-12		12/16/2003	12/17/2003
0312106-08B	MW-12		12/16/2003	12/17/2003
0312106-08C	MW-12		12/16/2003	12/17/2003
0312106-09A	MW-13		12/17/2003	12/17/2003
0312106-09B	MW-13		12/17/2003	12/17/2003
0312106-09C	MW-13		12/17/2003	12/17/2003
0312106-10A	MW-14		12/16/2003	12/17/2003
0312106-10B	MW-14		12/16/2003	12/17/2003
0312106-10C	MW-14		12/16/2003	12/17/2003
0312106-11A	RW-1		12/17/2003	12/17/2003
0312106-12A	RW-2		12/17/2003	12/17/2003
0312106-13A	RW-3		12/17/2003	12/17/2003
0312106-14A	RW-4		12/17/2003	12/17/2003
0312106-15A	MW-35 (45A SITE)		12/17/2003	12/17/2003
0312106-16A	MW-35 (45A SITE)		12/17/2003	12/17/2003
0312106-17A	Pretreatment		12/17/2003	12/17/2003

AMERICAN ANALYTICAL LABORATORIES
56 TOLEDO STREET • FARMINGDALE, NEW YORK 11735
(631) 454-6100 • FAX (631) 454-8027

NYSDOH	ELAP	11418
CTDOH	PH-0205	
NJDEP	NY050	
PADEP	68-573	

CHAIN OF CUSTODY / REQUEST FOR ANALYSIS DOCUMENT

CLIENT NAME/ADDRESS: Photocircuits
CONTACT: Charlie Nehrig

SAMPLER (SIGNATURE): David H. / Bryce D. DATE 12/17/03 TIME 1145 315-457-5200
SAMPLER NAME (PRINT): David Hurray / Bryce Dingman
SAMPLE(S) SEALED: YES / NO
CORRECT CONTAINER(S): YES / NO

PROJECT LOCATION: Photocircuits, 31 Sea Cliff Ave, Glen Cove, NY

LABORATORY ID #	MATRIX	TYPE	PRES.	SAMPLE # - LOCATION	ANALYSIS REQUIRED: 8260 B	TOC	NITRATE	SULFATE	IRON	FOR METHANOL PRESERVED SAMPLES [VOLATILE VIAL #]
0312106-01	L	G		SMP-1	X	X	X	X	X	
-02				DMP-1	X	X	X	X	X	
-03				SMP-3	X	X	X	X	X	
-04				DMP-3	X	X	X	X	X	
-05				SMP-4	X	X	X	X	X	
-06				DMP-4	X	X	X	X	X	
-07				MW-8	X	X	X	X	X	
-08				MW-12	X	X	X	X	X	
-09				MW-13	X	X	X	X	X	
-10				MW-14	X	X	X	X	X	
-11A				RW-1	X					
-12A				RW-2	X					

COOLER TEMPERATURE:

MATRIX S=SOIL; L=LIQUID; SL=SLUDGE; A-AIR; W=WIPE; P=PAINT CHIPS; B=BULK MATERIAL
TYPE G=GRAB; C=COMPOSITE, SS=SPLIT SPOON

TURNAROUND REQUIRED: NORMAL ☒ STAT ☐ BY / /

COMMENTS / INSTRUCTIONS

RELINQUISHED BY (SIGNATURE)	DATE / TIME	PRINTED NAME	RECEIVED BY LAB (SIGNATURE)	DATE / TIME	PRINTED NAME
Bryce D. Dingman	12/17/03 12:00	Bryce Dingman	Christopher Dunn	12-18-03 2:55	Christopher Dunn
Bryan Tinkham	12/18/03 2:00				

WHITE-OFFICE / CANARY-LAB / PINK-SAMPLE CUSTODIAN / GOLDENROD-CLIENT

AMERICAN ANALYTICAL LABORATORIES
56 TOLEDO STREET • FARMINGDALE, NEW YORK 11735
(631) 454-6100 • FAX (631) 454-8027

NYSDOH	ELAP	11418
CTDOH	PH-0205	
NJDEP	NY050	
PADEP	68-573	

CHAIN OF CUSTODY / REQUEST FOR ANALYSIS DOCUMENT

CLIENT NAME/ADDRESS: PhotoCircuits, 31 Sea Cliff Ave, Glen Cove, NY
CONTACT: Charlie Nehrig

SAMPLER (SIGNATURE): David Hanny / Bryce Dingman
DATE: 12/17/03 TIME: 1145
315-457-5200

SAMPLER NAME (PRINT): David Hanny, Bryce Dingman

SAMPLE(S) SEALED: YES / NO
CORRECT CONTAINER(S): YES / NO

PROJECT LOCATION: PhotoCircuits

LABORATORY ID #	MATRIX	TYPE	PRES.	SAMPLE # - LOCATION	ANALYSIS REQUIRED: 8260 B	TOC	NITRATE	SULFATE	IRON	FOR METHANOL PRESERVED SAMPLES [VOLATILE VIAL #]
031206-15A	L	G	HCl	RW-3	X					
14A 15A	L	G		RW-4	X					
15A 16A	L	G		MW-3S (45A SITE)	X					
16A 17A	L	G	↓	MW-4S (45A SITE)	X					
17A 18A	A	G	NONE	PRETREATMENT	X					

COOLER TEMPERATURE:

MATRIX S=SOIL; L=LIQUID; SL=SLUDGE; A-AIR; W=WIPE; P=PAINT CHIPS; B=BULK MATERIAL
TYPE G=GRAB; C=COMPOSITE, SS=SPLIT SPOON

TURNAROUND REQUIRED: NORMAL X STAT ☐ BY / /

COMMENTS / INSTRUCTIONS

RELINQUISHED BY (SIGNATURE)	DATE / TIME	PRINTED NAME	RECEIVED BY LAB (SIGNATURE)	DATE / TIME	PRINTED NAME
Bryce D. Dingman	12/17/03 12:00	Bryce Dingman	Chris Dunn	12-16-03 2:55pm	Christopher Dunn
Bryan Tinkham	12/17/03 2:00				

WHITE-OFFICE / CANARY-LAB / PINK-SAMPLE CUSTODIAN / GOLDENROD-CLIENT

American Analytical Laboratories,
56 Toledo Street
Farmingdale, NY 11735-
(631) 454-6100

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Environmental Testing Laboratories
208 Route 109
Farmingdale, New York 11735

TEL: (631) 249-1456
FAX: (631) 249-8344

Acct #:

18-Dec-03

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests: TOC E415.1						
0312106-01C	Liquid	12/16/2003	250ML PU	1						
0312106-02C	Liquid	12/16/2003	250ML PU	1						
0312106-03C	Liquid	12/16/2003	250ML PU	1						
0312106-04C	Liquid	12/16/2003	250ML PU	1						
0312106-05C	Liquid	12/16/2003	250ML PU	1						
0312106-06C	Liquid	12/16/2003	250ML PU	1						
0312106-07C	Liquid	12/16/2003	250ML PU	1						
0312106-08C	Liquid	12/16/2003	250ML PU	1						
0312106-09C	Liquid	12/17/2003	250ML PU	1						
0312106-10C	Liquid	12/16/2003	250ML PU	1						

Comments: TAT Required: by12/26/03

	Date/Time		Date/Time
Relinquished by: Christopher Dunn	12-18-03 11:45 AM	**Received by:** Mark Jones	
Relinquished by:		**Received by:**	

AMERICAN ANALYTICAL LABORATORIES, INC.
56 TOLEDO STREET
FARMINGDALE, NEW YORK 11735
TELEPHONE: (631) 454-6100 FAX: (631) 454-8027

DATA REPORTING QUALIFIERS

For reporting results, the following "Results Qualifiers" are used:

Value	If the result is greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
J	Indicates an estimated value. The flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3ug/L was calculated report as 3J. This flag is used when similar situations arise on any organic parameter i.e. Pesticide, PCBs and others.
B	Indicates the analyte was found in the blank as well as the sample report "10B".
E	Indicates the analytes concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide / PCB target analyte when there is >25% difference for detected concentrations between the two GC Columns. The higher of the two values is reported on Form I and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-01A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,1,1-Trichloroethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,1-Dichloroethane	42	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,1-Dichloroethene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
2-Butanone	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
2-Chlorotoluene	4.3	1.0		µg/L	1	12/18/2003 8:45:00 AM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Acetone	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Acrolein	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Benzene	1.2	1.0		µg/L	1	12/18/2003 8:45:00 AM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Bromoform	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Bromomethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 8:45:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-01A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Chloroethane	680	1.0		µg/L	1	12/18/2003 8:45:00 AM
Chloroform	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Chloromethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
cis-1,2-Dichloroethene	5.4	1.0		µg/L	1	12/18/2003 8:45:00 AM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Ethanol	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Freon-114	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 8:45:00 AM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Naphthalene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
o-Xylene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Styrene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Tetrachloroethene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Toluene	22	1.0		µg/L	1	12/18/2003 8:45:00 AM
trans-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Trichloroethene	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 8:45:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-01A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 8:45:00 AM
Vinyl chloride	40	1.0		µg/L	1	12/18/2003 8:45:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-01B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: **JP**
Iron	21.7	0.0200		mg/L	1	12/19/2003 10:25:13 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-01C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	U	0.100		mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	30.0	1.00		mg/L	1	10/30/2003

Qualifiers:

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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-02A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,1,1-Trichloroethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,1-Dichloroethane	320	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,1-Dichloroethene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2,4-Trimethylbenzene	1.7	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,3,5-Trimethylbenzene	1.5	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
2-Butanone	67	1.0		µg/L	1	12/18/2003 9:24:00 AM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
2-Chlorotoluene	43	1.0		µg/L	1	12/18/2003 9:24:00 AM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
4-Chlorotoluene	2.8	1.0		µg/L	1	12/18/2003 9:24:00 AM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Acetone	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Acrolein	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Benzene	58	1.0		µg/L	1	12/18/2003 9:24:00 AM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Bromoform	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Bromomethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 9:24:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

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B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-02A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Chloroethane	530	10		µg/L	10	12/19/2003 6:26:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Chloromethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
cis-1,2-Dichloroethene	53	1.0		µg/L	1	12/18/2003 9:24:00 AM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Ethanol	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Ethylbenzene	1.8	1.0		µg/L	1	12/18/2003 9:24:00 AM
Freon-114	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
m,p-Xylene	2.1	2.0		µg/L	1	12/18/2003 9:24:00 AM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Methylene chloride	8.0	1.0		µg/L	1	12/18/2003 9:24:00 AM
Naphthalene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
o-Xylene	1.5	1.0		µg/L	1	12/18/2003 9:24:00 AM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Styrene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Tetrachloroethene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Toluene	19	1.0		µg/L	1	12/18/2003 9:24:00 AM
trans-1,2-Dichloroethene	5.2	1.0		µg/L	1	12/18/2003 9:24:00 AM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Trichloroethene	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 9:24:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

*- Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-02A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 9:24:00 AM
Vinyl chloride	260	1.0		µg/L	1	12/18/2003 9:24:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-02B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: **JP**
Iron	3.09	0.0200		mg/L	1	12/19/2003 10:32:39 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-02C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	0.087	0.100	J	mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	226	1.00		mg/L	1	10/30/2003

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-03A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,1,1-Trichloroethane	2300	100		µg/L	100	12/19/2003 7:05:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,1-Dichloroethane	19000	100		µg/L	100	12/19/2003 7:05:00 PM
1,1-Dichloroethene	50	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2-Dichloroethane	7.6	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
2-Butanone	270	1.0		µg/L	1	12/18/2003 10:04:00 AM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
2-Chlorotoluene	28	1.0		µg/L	1	12/18/2003 10:04:00 AM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
4-Chlorotoluene	1.7	1.0		µg/L	1	12/18/2003 10:04:00 AM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Acetone	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Acrolein	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Benzene	4.9	1.0		µg/L	1	12/18/2003 10:04:00 AM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Bromoform	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Bromomethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 10:04:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-03A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Chloroethane	4600	100		µg/L	100	12/19/2003 7:05:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Chloromethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
cis-1,2-Dichloroethene	2.5	1.0		µg/L	1	12/18/2003 10:04:00 AM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Ethanol	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Freon-114	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 10:04:00 AM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Methylene chloride	24	1.0		µg/L	1	12/18/2003 10:04:00 AM
Naphthalene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
o-Xylene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Styrene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Tetrachloroethene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Toluene	160	1.0		µg/L	1	12/18/2003 10:04:00 AM
trans-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Trichloroethene	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 10:04:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-03A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 10:04:00 AM
Vinyl chloride	190	1.0		µg/L	1	12/18/2003 10:04:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-03B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: **JP**
Iron	8.93	0.0200		mg/L	1	12/19/2003 10:34:59 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-03C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	U	0.100		mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	377	1.00		mg/L	1	10/30/2003

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-04A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,1,1-Trichloroethane	540	50		µg/L	50	12/19/2003 1:48:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,1-Dichloroethane	5100	50		µg/L	50	12/19/2003 1:48:00 PM
1,1-Dichloroethene	18	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2,4-Trimethylbenzene	3.8	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2-Dichloroethane	24	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,3,5-Trimethylbenzene	4.8	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
2-Butanone	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
2-Chlorotoluene	46	1.0		µg/L	1	12/18/2003 10:45:00 AM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
4-Chlorotoluene	4.9	1.0		µg/L	1	12/18/2003 10:45:00 AM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Acetone	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Acrolein	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Benzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Bromoform	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Bromomethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 10:45:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

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* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-04A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Chloroethane	3900	50		µg/L	50	12/19/2003 1:48:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Chloromethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
cis-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Ethanol	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Ethylbenzene	3.1	1.0		µg/L	1	12/18/2003 10:45:00 AM
Freon-114	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
m,p-Xylene	5.2	2.0		µg/L	1	12/18/2003 10:45:00 AM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Methylene chloride	47	1.0		µg/L	1	12/18/2003 10:45:00 AM
Naphthalene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
o-Xylene	5.7	1.0		µg/L	1	12/18/2003 10:45:00 AM
p-Diethylbenzene	6.1	1.0		µg/L	1	12/18/2003 10:45:00 AM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Styrene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Tetrachloroethene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Toluene	160	1.0		µg/L	1	12/18/2003 10:45:00 AM
trans-1,2-Dichloroethene	3.1	1.0		µg/L	1	12/18/2003 10:45:00 AM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Trichloroethene	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 10:45:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-04A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 10:45:00 AM
Vinyl chloride	520	1.0		µg/L	1	12/18/2003 10:45:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
• - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-04B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: **JP**
Iron	7.29	0.0200		mg/L	1	12/19/2003 10:38:43 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-04C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	U	0.100		mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	30.0	1.00		mg/L	1	10/30/2003

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-05A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,1,1-Trichloroethane	4.2	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,1-Dichloroethane	110	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,1-Dichloroethene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
2-Butanone	230	1.0		µg/L	1	12/18/2003 11:25:00 AM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
2-Chlorotoluene	2.0	1.0		µg/L	1	12/18/2003 11:25:00 AM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Acetone	1200	1.0	E	µg/L	1	12/18/2003 11:25:00 AM
Acrolein	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Benzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Bromoform	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Bromomethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 11:25:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-05A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Chloroethane	740	10		µg/L	10	12/19/2003 2:27:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Chloromethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
cis-1,2-Dichloroethene	180	1.0		µg/L	1	12/18/2003 11:25:00 AM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Ethanol	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Freon-114	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 11:25:00 AM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Methylene chloride	17	1.0		µg/L	1	12/18/2003 11:25:00 AM
Naphthalene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
o-Xylene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Styrene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Tetrachloroethene	180	1.0		µg/L	1	12/18/2003 11:25:00 AM
Toluene	9.0	1.0		µg/L	1	12/18/2003 11:25:00 AM
trans-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Trichloroethene	13	1.0		µg/L	1	12/18/2003 11:25:00 AM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 11:25:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-05A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 11:25:00 AM
Vinyl chloride	78	1.0		µg/L	1	12/18/2003 11:25:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-05B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: JP
Iron	176	0.0200		mg/L	1	12/19/2003 10:46:46 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	SMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-05C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	U	0.100		mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	178	1.00		mg/L	1	10/30/2003

Qualifiers:

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-06A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,1,1-Trichloroethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,1-Dichloroethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,1-Dichloroethene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2,4-Trimethylbenzene	2.3	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,3,5-Trimethylbenzene	2.4	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
2-Chlorotoluene	25	1.0		µg/L	1	12/18/2003 12:05:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
4-Chlorotoluene	2.4	1.0		µg/L	1	12/18/2003 12:05:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Benzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 12:05:00 PM

Qualifiers:

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R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-06A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Chloroethane	510	10		µg/L	10	12/19/2003 3:07:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
cis-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 12:05:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Methylene chloride	4.3	1.0		µg/L	1	12/18/2003 12:05:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
p-Diethylbenzene	4.8	1.0		µg/L	1	12/18/2003 12:05:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Tetrachloroethene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Toluene	16	1.0		µg/L	1	12/18/2003 12:05:00 PM
trans-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Trichloroethene	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 12:05:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-06A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 12:05:00 PM
Vinyl chloride	U	1.0		µg/L	1	12/18/2003 12:05:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-06B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: **JP**
Iron	66.3	0.0200		mg/L	1	12/19/2003 10:49:23 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	DMP-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-06C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	0.080	0.100	J	mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	57.0	1.00		mg/L	1	10/30/2003

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-8
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-07A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,1,1-Trichloroethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,1-Dichloroethane	17	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,1-Dichloroethene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
2-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Benzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 12:46:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-8
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-07A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Chloroethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
cis-1,2-Dichloroethene	140	1.0		µg/L	1	12/18/2003 12:46:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 12:46:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Tetrachloroethene	3.2	1.0		µg/L	1	12/18/2003 12:46:00 PM
Toluene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
trans-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Trichloroethene	39	1.0		µg/L	1	12/18/2003 12:46:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 12:46:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

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• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-8
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-07A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 12:46:00 PM
Vinyl chloride	U	1.0		µg/L	1	12/18/2003 12:46:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

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S - Spike Recovery outside accepted recovery limits

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American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-8
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-07B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: **JP**
Iron	0.0681	0.0200		mg/L	1	12/19/2003 10:51:59 AM

Qualifiers:

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-8
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-07C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	3.99	0.100		mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	23.0	1.00		mg/L	1	10/30/2003

Qualifiers:

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-12
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-08A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,1,1-Trichloroethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,1-Dichloroethane	190	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,1-Dichloroethene	2.5	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
2-Chlorotoluene	300	1.0		µg/L	1	12/18/2003 1:26:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
4-Chlorotoluene	370	1.0		µg/L	1	12/18/2003 1:26:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Benzene	1.9	1.0		µg/L	1	12/18/2003 1:26:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 1:26:00 PM

Qualifiers:

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• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-12
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-08A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Chloroethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
cis-1,2-Dichloroethene	230	1.0		µg/L	1	12/18/2003 1:26:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 1:26:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Tetrachloroethene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Toluene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
trans-1,2-Dichloroethene	3.3	1.0		µg/L	1	12/18/2003 1:26:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Trichloroethene	57	1.0		µg/L	1	12/18/2003 1:26:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 1:26:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

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R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-12
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-08A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 1:26:00 PM
Vinyl chloride	45	1.0		µg/L	1	12/18/2003 1:26:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-12
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-08B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: **JP**
Iron	16.7	0.0200		mg/L	1	12/19/2003 10:56:47 AM

Qualifiers:

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- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-12
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-08C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	0.098	0.100	J	mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	312	1.00		mg/L	1	10/30/2003

Qualifiers:

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J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-13
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-09A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,1,1-Trichloroethane	57	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,1-Dichloroethane	770	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,1-Dichloroethene	210	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
2-Chlorotoluene	17	1.0		µg/L	1	12/18/2003 2:07:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Benzene	16	1.0		µg/L	1	12/18/2003 2:07:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 2:07:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-13
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-09A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Chloroethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
cis-1,2-Dichloroethene	2000	10		µg/L	10	12/19/2003 3:47:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 2:07:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Tetrachloroethene	770	1.0		µg/L	1	12/18/2003 2:07:00 PM
Toluene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
trans-1,2-Dichloroethene	21	1.0		µg/L	1	12/18/2003 2:07:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Trichloroethene	580	1.0		µg/L	1	12/18/2003 2:07:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 2:07:00 PM

Qualifiers:

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-13
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-09A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 2:07:00 PM
Vinyl chloride	300	1.0		µg/L	1	12/18/2003 2:07:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-13
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-09B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: **JP**
Iron	4.31	0.0200		mg/L	1	12/19/2003 10:59:49 AM

Qualifiers:

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-13
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-09C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	2.03	0.100		mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	403	1.00		mg/L	1	10/30/2003

Qualifiers:

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-14
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-10A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,1,1-Trichloroethane	1200	20		µg/L	20	12/19/2003 4:27:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,1-Dichloroethane	6100	20		µg/L	20	12/19/2003 4:27:00 PM
1,1-Dichloroethene	820	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2-Dichloroethane	40	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
2-Butanone	1500	20		µg/L	20	12/19/2003 4:27:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
2-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
2-Hexanone	150	1.0		µg/L	1	12/18/2003 2:47:00 PM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Acetone	10000	20		µg/L	20	12/19/2003 4:27:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Benzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 2:47:00 PM

Qualifiers:

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J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-14
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-10A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Chloroethane	1400	20		µg/L	20	12/19/2003 4:27:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Chloromethane	4.0	1.0		µg/L	1	12/18/2003 2:47:00 PM
cis-1,2-Dichloroethene	32	1.0		µg/L	1	12/18/2003 2:47:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 2:47:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Methylene chloride	130	1.0		µg/L	1	12/18/2003 2:47:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Tetrachloroethene	3.9	1.0		µg/L	1	12/18/2003 2:47:00 PM
Toluene	35	1.0		µg/L	1	12/18/2003 2:47:00 PM
trans-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Trichloroethene	5.8	1.0		µg/L	1	12/18/2003 2:47:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 2:47:00 PM

Qualifiers:

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-14
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-10A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 2:47:00 PM
Vinyl chloride	810	1.0		µg/L	1	12/18/2003 2:47:00 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
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- R - RPD outside accepted recovery limits
- E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-14
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-10B	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
TOTAL IRON		**E200.7**		**(SW3010A)**		Analyst: **JP**
Iron	168	0.0200		mg/L	1	12/19/2003 11:02:50 AM

Qualifiers:

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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-14
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/16/2003
Lab ID:	0312106-10C	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NITRATE AS N		**E353.2**				Analyst: **BK**
Nitrogen, Nitrate-Nitrite	U	0.100		mg/L	1	12/19/2003
SULFATE		**E375.4**				Analyst: **BK**
Sulfate	238	1.00		mg/L	1	10/30/2003

Qualifiers:

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-11A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,1,1-Trichloroethane	28	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,1-Dichloroethane	73	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,1-Dichloroethene	68	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
2-Chlorotoluene	20	1.0		µg/L	1	12/18/2003 3:28:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Benzene	1.1	1.0		µg/L	1	12/18/2003 3:28:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 3:28:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-11A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Chloroethane	16	1.0		µg/L	1	12/18/2003 3:28:00 PM
Chloroform	5.3	1.0		µg/L	1	12/18/2003 3:28:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
cis-1,2-Dichloroethene	2800	10		µg/L	10	12/19/2003 5:07:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 3:28:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Tetrachloroethene	130	1.0		µg/L	1	12/18/2003 3:28:00 PM
Toluene	6.4	1.0		µg/L	1	12/18/2003 3:28:00 PM
trans-1,2-Dichloroethene	12	1.0		µg/L	1	12/18/2003 3:28:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Trichloroethene	240	1.0		µg/L	1	12/18/2003 3:28:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 3:28:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-1
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-11A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 3:28:00 PM
Vinyl chloride	280	1.0		µg/L	1	12/18/2003 3:28:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-2
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-12A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,1,1-Trichloroethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,1-Dichloroethane	120	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,1-Dichloroethene	6.2	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
2-Chlorotoluene	570	1.0		µg/L	1	12/18/2003 4:09:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
4-Chlorotoluene	40	1.0		µg/L	1	12/18/2003 4:09:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Benzene	2.6	1.0		µg/L	1	12/18/2003 4:09:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 4:09:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-2
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-12A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Chloroethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
cis-1,2-Dichloroethene	710	1.0		µg/L	1	12/18/2003 4:09:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 4:09:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Tetrachloroethene	14	1.0		µg/L	1	12/18/2003 4:09:00 PM
Toluene	3.9	1.0		µg/L	1	12/18/2003 4:09:00 PM
trans-1,2-Dichloroethene	4.4	1.0		µg/L	1	12/18/2003 4:09:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Trichloroethene	140	1.0		µg/L	1	12/18/2003 4:09:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 4:09:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-2
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-12A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 4:09:00 PM
Vinyl chloride	82	1.0		µg/L	1	12/18/2003 4:09:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-13A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,1,1-Trichloroethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,1-Dichloroethane	65	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,1-Dichloroethene	18	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
2-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Benzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 5:00:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

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R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-13A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Chlorodifluoromethane	8.0	1.0		µg/L	1	12/18/2003 5:00:00 PM
Chloroethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
cis-1,2-Dichloroethene	610	1.0		µg/L	1	12/18/2003 5:00:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 5:00:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Tetrachloroethene	57	1.0		µg/L	1	12/18/2003 5:00:00 PM
Toluene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
trans-1,2-Dichloroethene	4.5	1.0		µg/L	1	12/18/2003 5:00:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Trichloroethene	470	1.0		µg/L	1	12/18/2003 5:00:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 5:00:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

*- Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-3
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-13A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 5:00:00 PM
Vinyl chloride	4.6	1.0		µg/L	1	12/18/2003 5:00:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-14A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,1,1-Trichloroethane	1.1	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,1-Dichloroethane	99	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,1-Dichloroethene	16	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
2-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Benzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 5:42:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-14A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Chlorodifluoromethane	6.6	1.0		µg/L	1	12/18/2003 5:42:00 PM
Chloroethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
cis-1,2-Dichloroethene	360	1.0		µg/L	1	12/18/2003 5:42:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 5:42:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Tetrachloroethene	39	1.0		µg/L	1	12/18/2003 5:42:00 PM
Toluene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
trans-1,2-Dichloroethene	2.4	1.0		µg/L	1	12/18/2003 5:42:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Trichloroethene	170	1.0		µg/L	1	12/18/2003 5:42:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 5:42:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

• - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	RW-4
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-14A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 5:42:00 PM
Vinyl chloride	U	1.0		µg/L	1	12/18/2003 5:42:00 PM

Qualifiers:

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E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-35 (45A SITE)
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-15A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,1,1-Trichloroethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,1-Dichloroethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,1-Dichloroethene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
2-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Benzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 8:53:00 PM

Qualifiers:

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E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-35 (45A SITE)
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-15A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Chloroethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
cis-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 8:53:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Tetrachloroethene	6.8	1.0		µg/L	1	12/18/2003 8:53:00 PM
Toluene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
trans-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Trichloroethene	35	1.0		µg/L	1	12/18/2003 8:53:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 8:53:00 PM

Qualifiers:

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B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-35 (45A SITE)
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-15A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 8:53:00 PM
Vinyl chloride	U	1.0		µg/L	1	12/18/2003 8:53:00 PM

Qualifiers:

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E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-35 (45A SITE)
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-16A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,1,1-Trichloroethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,1,2,2-Tetrachloroethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,1,2-Trichloroethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,1-Dichloroethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,1-Dichloroethene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,1-Dichloropropene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2,3-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2,3-Trichloropropane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2,4,5-Tetramethylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2,4-Trichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2,4-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2-Dibromo-3-chloropropane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2-Dibromoethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2-Dichloroethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,3,5-Trimethylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,3-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,3-dichloropropane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
1,4-Dichlorobenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
2,2-Dichloropropane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
2-Butanone	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
2-Chloroethyl vinyl ether	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
2-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
2-Hexanone	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
4-Chlorotoluene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
4-Isopropyltoluene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
4-Methyl-2-pentanone	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Acetone	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Acrolein	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Acrylonitrile	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Benzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Bromobenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Bromochloromethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Bromodichloromethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Bromoform	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Bromomethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Carbon disulfide	U	1.0		µg/L	1	12/18/2003 9:39:00 PM

Qualifiers:

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American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-35 (45A SITE)
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-16A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Chlorobenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Chlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Chloroethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Chloroform	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Chloromethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
cis-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
cis-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Dibromochloromethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Dibromomethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Dichlorodifluoromethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Diisopropyl ether	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Ethanol	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Ethyl acetate	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Ethylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Freon-114	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Hexachlorobutadiene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Isopropyl acetate	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Isopropylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
m,p-Xylene	U	2.0		µg/L	1	12/18/2003 9:39:00 PM
Methyl tert-butyl ether	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Methylene chloride	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Naphthalene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
n-Butyl acetate	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
n-Butylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
n-Propyl acetate	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
n-Propylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
o-Xylene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
p-Diethylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
p-Ethyltoluene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
sec-Butylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Styrene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
t-Butyl alcohol	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
tert-Butylbenzene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Tetrachloroethene	180	1.0		µg/L	1	12/18/2003 9:39:00 PM
Toluene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
trans-1,2-Dichloroethene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
trans-1,3-Dichloropropene	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Trichloroethene	2.7	1.0		µg/L	1	12/18/2003 9:39:00 PM
Trichlorofluoromethane	U	1.0		µg/L	1	12/18/2003 9:39:00 PM

Qualifiers:

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J - Analyte detected below quantitation limits

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	MW-35 (45A SITE)
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-16A	**Matrix:**	LIQUID

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/L	1	12/18/2003 9:39:00 PM
Vinyl chloride	U	1.0		µg/L	1	12/18/2003 9:39:00 PM

Qualifiers:

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American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	Pretreatment
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-17A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
1,1,1,2-Tetrachloroethane	U	0.080		µg/m³	1	12/18/2003 4:08:00 AM
1,1,1-Trichloroethane	U	0.11		µg/m³	1	12/18/2003 4:08:00 AM
1,1,2,2-Tetrachloroethane	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
1,1,2-Trichloro-1,2,2-trifluoroethane	U	1.0		µg/m³	1	12/18/2003 4:08:00 AM
1,1,2-Trichloroethane	U	0.14		µg/m³	1	12/18/2003 4:08:00 AM
1,1-Dichloroethane	U	0.11		µg/m³	1	12/18/2003 4:08:00 AM
1,1-Dichloroethene	U	0.17		µg/m³	1	12/18/2003 4:08:00 AM
1,1-Dichloropropene	U	0.22		µg/m³	1	12/18/2003 4:08:00 AM
1,2,3-Trichlorobenzene	U	0.13		µg/m³	1	12/18/2003 4:08:00 AM
1,2,3-Trichloropropane	U	0.18		µg/m³	1	12/18/2003 4:08:00 AM
1,2,4,5-Tetramethylbenzene	U	0.12		µg/m³	1	12/18/2003 4:08:00 AM
1,2,4-Trichlorobenzene	U	0.15		µg/m³	1	12/18/2003 4:08:00 AM
1,2,4-Trimethylbenzene	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
1,2-Dibromo-3-chloropropane	U	0.81		µg/m³	1	12/18/2003 4:08:00 AM
1,2-Dibromoethane	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
1,2-Dichlorobenzene	U	0.080		µg/m³	1	12/18/2003 4:08:00 AM
1,2-Dichloroethane	U	0.15		µg/m³	1	12/18/2003 4:08:00 AM
1,2-Dichloropropane	U	0.060		µg/m³	1	12/18/2003 4:08:00 AM
1,3,5-Trimethylbenzene	U	0.23		µg/m³	1	12/18/2003 4:08:00 AM
1,3-Dichlorobenzene	U	0.11		µg/m³	1	12/18/2003 4:08:00 AM
1,3-dichloropropane	U	0.070		µg/m³	1	12/18/2003 4:08:00 AM
1,4-Dichlorobenzene	U	0.14		µg/m³	1	12/18/2003 4:08:00 AM
2,2-Dichloropropane	U	0.090		µg/m³	1	12/18/2003 4:08:00 AM
2-Butanone	U	0.50		µg/m³	1	12/18/2003 4:08:00 AM
2-Chloroethyl vinyl ether	U	0.23		µg/m³	1	12/18/2003 4:08:00 AM
2-Chlorotoluene	U	0.18		µg/m³	1	12/18/2003 4:08:00 AM
2-Hexanone	U	0.22		µg/m³	1	12/18/2003 4:08:00 AM
4-Chlorotoluene	U	0.11		µg/m³	1	12/18/2003 4:08:00 AM
4-Isopropyltoluene	U	0.15		µg/m³	1	12/18/2003 4:08:00 AM
4-Methyl-2-pentanone	U	0.24		µg/m³	1	12/18/2003 4:08:00 AM
Acetone	U	0.46		µg/m³	1	12/18/2003 4:08:00 AM
Acrolein	U	0.92		µg/m³	1	12/18/2003 4:08:00 AM
Acrylonitrile	U	0.090		µg/m³	1	12/18/2003 4:08:00 AM
Benzene	U	0.11		µg/m³	1	12/18/2003 4:08:00 AM
Bromobenzene	U	0.43		µg/m³	1	12/18/2003 4:08:00 AM
Bromochloromethane	U	0.080		µg/m³	1	12/18/2003 4:08:00 AM
Bromodichloromethane	U	0.040		µg/m³	1	12/18/2003 4:08:00 AM
Bromoform	U	0.16		µg/m³	1	12/18/2003 4:08:00 AM
Bromomethane	U	0.31		µg/m³	1	12/18/2003 4:08:00 AM
Carbon disulfide	U	0.16		µg/m³	1	12/18/2003 4:08:00 AM

Qualifiers:

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R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	Pretreatment
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-17A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Carbon tetrachloride	U	0.13		µg/m³	1	12/18/2003 4:08:00 AM
Chlorobenzene	U	0.11		µg/m³	1	12/18/2003 4:08:00 AM
Chlorodifluoromethane	U	1.0		µg/m³	1	12/18/2003 4:08:00 AM
Chloroethane	U	0.18		µg/m³	1	12/18/2003 4:08:00 AM
Chloroform	U	0.080		µg/m³	1	12/18/2003 4:08:00 AM
Chloromethane	U	0.080		µg/m³	1	12/18/2003 4:08:00 AM
cis-1,2-Dichloroethene	U	0.20		µg/m³	1	12/18/2003 4:08:00 AM
cis-1,3-Dichloropropene	U	0.090		µg/m³	1	12/18/2003 4:08:00 AM
Dibromochloromethane	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
Dibromomethane	U	0.080		µg/m³	1	12/18/2003 4:08:00 AM
Dichlorodifluoromethane	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
Diisopropyl ether	U	0.11		µg/m³	1	12/18/2003 4:08:00 AM
Ethanol	U	0.68		µg/m³	1	12/18/2003 4:08:00 AM
Ethyl acetate	U	0.78		µg/m³	1	12/18/2003 4:08:00 AM
Ethylbenzene	U	0.12		µg/m³	1	12/18/2003 4:08:00 AM
Freon-114	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
Hexachlorobutadiene	U	0.18		µg/m³	1	12/18/2003 4:08:00 AM
Isopropyl acetate	U	0.53		µg/m³	1	12/18/2003 4:08:00 AM
Isopropylbenzene	U	0.12		µg/m³	1	12/18/2003 4:08:00 AM
m,p-Xylene	U	0.23		µg/m³	1	12/18/2003 4:08:00 AM
Methyl tert-butyl ether	U	0.080		µg/m³	1	12/18/2003 4:08:00 AM
Methylene chloride	U	0.17		µg/m³	1	12/18/2003 4:08:00 AM
Naphthalene	U	0.12		µg/m³	1	12/18/2003 4:08:00 AM
n-Butyl acetate	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
n-Butylbenzene	U	0.16		µg/m³	1	12/18/2003 4:08:00 AM
n-Propyl acetate	U	0.15		µg/m³	1	12/18/2003 4:08:00 AM
n-Propylbenzene	U	0.13		µg/m³	1	12/18/2003 4:08:00 AM
o-Xylene	U	0.090		µg/m³	1	12/18/2003 4:08:00 AM
p-Diethylbenzene	U	0.14		µg/m³	1	12/18/2003 4:08:00 AM
p-Ethyltoluene	U	0.23		µg/m³	1	12/18/2003 4:08:00 AM
sec-Butylbenzene	U	0.14		µg/m³	1	12/18/2003 4:08:00 AM
Styrene	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
t-Butyl alcohol	U	0.13		µg/m³	1	12/18/2003 4:08:00 AM
tert-Butylbenzene	U	0.13		µg/m³	1	12/18/2003 4:08:00 AM
Tetrachloroethene	180	0.13		µg/m³	1	12/18/2003 4:08:00 AM
Toluene	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
trans-1,2-Dichloroethene	U	0.14		µg/m³	1	12/18/2003 4:08:00 AM
trans-1,3-Dichloropropene	U	0.10		µg/m³	1	12/18/2003 4:08:00 AM
Trichloroethene	1.3	0.11		µg/m³	1	12/18/2003 4:08:00 AM
Trichlorofluoromethane	U	0.14		µg/m³	1	12/18/2003 4:08:00 AM

Qualifiers:

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R - RPD outside accepted recovery limits

E - Value above quantitation range

American Analytical Laboratories

Date: *31-Dec-03*

CLIENT:	Photocircuits Corporation	**Client Sample ID:**	Pretreatment
Lab Order:	0312106	**Tag Number:**	
Project:	Photocircuits 31 Sea Cliff Ave. Glen Cove, N.Y.	**Collection Date:**	12/17/2003
Lab ID:	0312106-17A	**Matrix:**	AIR

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
VOLATILES SW-846 METHOD 8260		**SW8260B**				Analyst: **LDS**
Vinyl acetate	U	1.0		µg/m³	1	12/18/2003 4:08:00 AM
Vinyl chloride	U	0.12		µg/m³	1	12/18/2003 4:08:00 AM

Qualifiers:

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R - RPD outside accepted recovery limits

E - Value above quantitation range

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

12/23/2003

Total Organic Carbon - Method 415.1

Sample: R3866-1
Client Sample ID: 0312106-01C
Collected: 12/16/2003
Matrix: Liquid
Type: Grab
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	50.5	ppm	

Sample: R3866-2
Client Sample ID: 0312106-02C
Collected: 12/16/2003
Matrix: Liquid
Type: Grab
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	74.8	ppm	

Sample: R3866-3
Client Sample ID: 0312106-03C
Collected: 12/16/2003
Matrix: Liquid
Type: Grab
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	0.51	ppm	U

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

12/23/2003

Total Organic Carbon - Method 415.1

Sample: R3866-4
Client Sample ID: 0312106-04C
Collected: 12/16/2003
Matrix: Liquid
Type: Grab
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	18.9	ppm	

Sample: R3866-5
Client Sample ID: 0312106-05C
Collected: 12/16/2003
Matrix: Liquid
Type: Grab
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	0.51	ppm	U

Sample: R3866-6
Client Sample ID: 0312106-06C
Collected: 12/16/2003
Matrix: Liquid
Type: Grab
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	0.51	ppm	U

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

12/23/2003

Total Organic Carbon - Method 415.1

Sample: R3866-7
Client Sample ID: 0312106-07C
Matrix: Liquid
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM
Type: Grab
Collected: 12/16/2003

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	0.51	ppm	U

Sample: R3866-8
Client Sample ID: 0312106-08C
Matrix: Liquid
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM
Type: Grab
Collected: 12/16/2003

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	0.51	ppm	U

Sample: R3866-9
Client Sample ID: 0312106-09C
Matrix: Liquid
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM
Type: Grab
Collected: 12/17/2003

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	0.51	ppm	U

Environmental Testing Laboratories, Inc.
208 Route 109, Farmingdale NY 11735
Phone - 631-249-1456 Fax - 631-249-8344

12/23/2003

Total Organic Carbon - Method 415.1

Sample: R3866-10
Client Sample ID: 0312106-10C
Matrix: Liquid
Remarks:
Analyzed Date: 12/22/2003 12:00:00 PM

Collected: 12/16/2003
Type: Grab

Analytical Results

Cas No	Analyte	MDL	Result	Units	Q
	TOC	0.51	0.51	ppm	U

Terra Systems
INCORPORATED

March 11, 2003

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

RE: December 2003 Status Report Photocircuits Accelerated Anaerobic Bioremediation Pilot

Dear Charlie:

Attached is the December 2003 Status Report for the Photocircuits Accelerated Anaerobic Bioremediation Project. Data from the beginning of the project in August 2000 through December 2003 is provided and discussed. Please let me know if you have any questions.

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

DECEMBER 2003
STATUS REPORT
PHOTOCIRCUITS ACCELERATED ANAEROBIC BIOREMEDIATION PROJECT

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

MARCH 11, 2004

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FIGURES

TABLES

ABBREVATIONS

1DCA 1,1-Dichloroethane
1DCE 1,1-Dichloroethene or 1,1-Dichloroethylene or Vinylidene Chloride
1TCA 1,1,1-Trichloroethane
bgs Below Ground Surface
CA Chloroethane
cDCE cis-1,2-Dichloroethene or cis-1,2-chloroethylene
msl mean sea level
MTBE Methyl Tert Butyl Ether
µg/L Microgram per Liter
µM Micromole per Liter
PCE Tetrachloroethene or Perchloroethylene
SRS™ Slow Release Substrate
TCE Trichloroethene or Trichloroethylene
tDCE trans-1,2-Dichloroethene or trans-1,2-Dichloroethylene
TOC Total Organic Carbon
TSI Terra Systems, Inc.
VC Vinyl Chloride
VOC Volatile Organic Carbon

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 initial pilot bioremediation system consisted of six injection points in a line spaced about 15 to 20 feet apart. A slow release substrate (SRS) containing edible soybean oil was designed to provide a slow release food grade carbon source over a period in excess of twelve months. A total of 3,600 gallons of the soybean oil emulsion was injected. The substrate concentrations were selected based on previous experience.

An additional 5,722 gallons of the emulsified substrate was injected in months 17 and 19 (February and April 2002) at twelve injection points in a full-scale treatment cell. VOC and substrate concentrations have been monitored twelve times over a thirty-nine month period at eight wells spaced throughout the treatment area. VOC and substrate concentrations have also been monitored at six 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 after the first injection indicated that substrate was delivered throughout the treatment cell with the highest substrate levels found in well MW-14. In the initial injection event in August 2000, the emulsion moved into this well from several of the injection points and displaced much of the contaminated groundwater within this well. Well MW-7 has contained the emulsion since April 2002 and has not been sampled. Contaminant levels had increased in MW-7 between August 2000 and January 2002 when the last sample was collected from this well. An increase in total VOCs has also been observed in well MW-14 since the first injection of substrate in August 2000. 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 (63-99%) were generally observed. Degradation rates for the total VOCs (9/1/00 concentration minus 12/16/03 concentration divided by 1201 days) were as high as 160 µg/L-day (well SMP-3) in higher concentration areas with greater than 100,000 µg/L total volatiles. In other areas with lower concentrations, total VOC degradation rates were lower, in the range of 1.8 (DMP-4) to 24.8 µg/L-day (SMP-1). The average total contaminant concentrations within the treatment cell have fallen by 79% since September 2000. This average includes the wells sampled on 12/17/03 and the well (MW-7) last

sampled on 1/8/02. The substrate reinjection in February and April 2002 increased the TOC concentrations in all wells within the treatment cell. However, in December 2003, TOC levels ranged from non-detect (<0.51 mg/L) in MW-14, SMP-3, SMP-4, and DMP-4 to 74.8 mg/L in DMP-4 with an average of 20.6 mg/L in the seven wells sampled within the treatment cell. Only wells SMP-1 and DMP-1 had TOC levels above the target level of 50 mg/L. Additional substrate is needed.

2.0 INTRODUCTION

The enclosed report describes the field 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.

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

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 and full-scale implementation. 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. Wells MW-10 and MW-11 were monitored in January 2002 and January 2003. The locations of these wells are shown in Figure 1 with the exception of MW-9, MW-10, and MW-11 that are further to the west. It should be noted that these wells are not expected to be impacted by the bioremediation study.

Ground surface in the vicinity of the study area is about 60 feet above mean sea level (msl). In the treatment area, wells are screened between 10 and 52 feet msl. Downgradient wells 8, 10, and 11 are deep monitoring wells and wells MW-9, MW-12, and MW-13 are shallow wells. The screen intervals for the wells are shown below:

- Well MW-14 10 to 20 feet msl
- MW-7 37 to 52 feet msl
- SMP-1 50 to 52 feet msl
- SMP-3 45 to 47 feet msl
- SMP-4 45 to 47 feet msl
- DMP-1 40 to 42 feet msl

- DMP-3 35 to 37 feet msl,
- DMP-4 38 to 40 feet msl
- MW-8 –111 and –96 feet msl
- MW-9 31 to 46 feet msl
- MW-10 -72 to – 57 feet msl,
- MW-11 -112 to –97 feet mls
- MW-12 9 to 19 feet msl, and
- MW-13 11 to 21 feet msl.

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), trans-1,2-dichloroethene (tDCE), 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), 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 (1998) 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 Photocircuits 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 PCE below.

PCE → TCE → DCE → VC → ethene, ethane
step 1 step 2 step 3 step 4

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 Photocircuits site suggested that microbial dechlorination is occurring naturally. cDCE and 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 Photocircuits

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 enhanced anaerobic bioremediation treatment. Beginning in March 2001 groundwater samples were also collected from four additional wells (MW-8, MW-9, MW-12, and MW-13) to determine if the injected substrate had migrated away from the study area. Wells MW-10 and MW-11 were sampled in January 2002 and January 2003. It should be noted that the downgradient wells are not expected to be impacted by the bioremediation project. Recovery wells RW-1, RW-2, RW-3, and RW-4 were first monitored in December 2003.

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

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. In the second injection event, soybean oil, a surfactant mix, a quick release substrate package, sodium bromide (a tracer), and activated carbon-treated water was used to prepare an emulsion.

Figure 2 is a schematic of the anaerobic biotreatment system showing the monitoring wells and the injection locations within the treatment cell. Injection points 1 to 7 were used in the first

injection event. In this injection event, 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. About 4,530 pounds of soybean oil and lecithin was injected. 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.

During the period of February 25, 2002 to March 3, 2002, Terra Systems, Inc. constructed and utilized a low pressure injection system to inject substrate into the treatment cell with twelve injection wells (injection points 8-19). The injection system consisted of 7 one-inch wells installed to 60 ft. bgs and 5 one-inch wells installed to 55 ft. bgs. Eight of the wells were spaced 7.5 feet apart in a line. Two additional wells were placed on either side of the line. All of the wells had 20 ft. of PVC blank riser and 40 and 35 ft. of PVC screen (0.02 slot) respectively. The wells were installed using the Geoprobe™ direct-push method. Approximately 5,777 gallons of the emulsion was prepared and injected in February and April 2002. A total of 5,777 gallons of the emulsion containing 9,588 pounds of the soybean oil and surfactant mix, 94 pounds of a quick release substrate package, and 5.9 pounds of sodium bromide was injected.

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.

5.0 RESULTS

The bioremediation study at the Photocircuits Corporation site is being conducted to accelerate the degradation of the chlorinated contaminants of concern.

5.1 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 eleven field sampling events over a 32 month period.

5.2 Organization of Data

The analytical data from the treatment cell collected from each of the seven 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, tDCE, VC, and ethene. Similarly one unit of 1TCA is equivalent to one unit of 1DCE, 1DCA, CA, or ethane.

- Table 3 presents the field data collected in January, April, June, and October 2002 and January, April, August, and December 2003.

- Table 4 summarizes the changes between the samples collected within the treatment cell immediately after the oil emulsion injection and the samples collected twenty-five months later. For wells MW-14 and MW-7, samples could not be collected in April, June, or October 2002 because of the accumulation of emulsion. Well MW-14 was sampled in January, April, August, and December 2003. MW-7 could not be sampled at any of these time points because of the presence of the emulsion. 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 thirty-nine 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.

- For the downgradient wells, Table 5 summarizes the percent changes between the sample collected on 3/28/01 and the sample collected on 12/16-17/03 for wells MW-8, MW-12, and MW-13, for well MW-9 between 3/28/01 and 1/14/03, and between 1/22/02 and 1/14/03 for wells MW-10 and MW-11.

- Table 6 summarizes the changes in the chloroethenes, chloroethanes, electron acceptors, and electron donor for all wells from the beginning of the project in August-September 2000 to January 2002 or December 2003.

5.3 Project To Date Results

The following table summarizes the status of the key performance measures for this project as of December 2003. Details are described in subsequent sections..

Performance Measures	Values/Results
Treatment Volume: Soil Ground Water Treated:	 Approximately 92' X 157' X 60', 866,640 ft^3 Approximately 1,620,617gallons
System substrate transport effectiveness:	Demonstrated distribution throughout treatment 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	 160 µg/L-day 1.8 to 24.8 µg/L-day
Reduction of total contaminants of concern:	Achieved reductions of 30% to >99% except in MW-14 and MW-7 (through 1/8/02)
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 48 months

5.3.1 Chlorinated Ethene Results

In the monitoring wells within the treatment cell, cis-1,2-DCE, VC, and ethene were initially the predominant chlorinated ethenes with little of the parent compounds, PCE or TCE, being detected. Trans-1,2-DCE is a minor product, present at 1.1% or less of the total chlorinated ethenes. Chlorinated ethenes concentrations greater than 1,000 µg/L were initially only detected in SMP-1 and DMP-3.

PCE, TCE, cDCE, tDCE, and VC were not detected in well DMP-4 in December 2003; only ethene remained in this well. TCE, cDCE, tDCE, VC, and ethene concentrations increased in wells MW-14, SMP-1, DMP-1, SMP-3, DMP-3, and SMP-4 between the August 2003 and December 2003 sampling events as TOC levels became limiting.

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 represented the predominant chlorinated ethene product in wells MW-14, MW-7, SMP-1, DMP-1, SMP-3, DMP-3, and DMP-4. Ethene concentrations have increased in wells MW-14, MW-7 (through 1/8/02), SMP-3, and DMP-3 through 12/16/03 from the initial levels observed on 8/31/00-9/1/00. Ethene concentrations for the other four wells of the treatment were lower than measured initially in September 2000. The continued presence of ethene in all of the wells in the treatment area shows that complete dechlorination of the chlorinated ethenes is occurring. Low levels of acetylene, an abiotic degradation product from the reaction of PCE or TCE with ferrous sulfide and ferrous disulfide, have been detected in wells MW-14, SMP-1, and SMP-3.

The addition of soybean oil emulsion has resulted in an increase in intermediate and final daughter products from the chlorinated ethenes in treatment area wells MW-7, SMP-1, DMP-3, and DMP-4.

In the downgradient monitoring wells sampled since March 2001, wells MW-8, MW-10, MW-11, MW-12, and MW-13 had parent compounds PCE and/or TCE. Concentrations greater than 1,000 µg/L of chlorinated ethenes only detected in MW-12. Since March 2001, six months after the first substrate injection, TCE, cDCE, tDCE, and VC concentrations have declined in MW-12. The first emulsion injection appeared to have had an effect on MW-12 based upon the increases in ethene, methane, and TOC. However, TCE, cDCE, and VC concentrations have changed little since January 2002. The availability of substrate (<0.51 to 73 mg/L TOC) may be limiting the extent of dechlorination at this well. Ethene has only been detected at low levels in the other downgradient wells. The very low levels of TCE and cDCE found in MW-8 had dissipated from April 2002 until to January 2003, but were detected again in April, August, and December 2003. Little change in the concentrations of PCE, TCE, cDCE, or VC was noted in the deep well MW-10 between 1/22/02 and 1/14/03. Low levels of TCE and cDCE appeared in the deep well MW-11 in January 2003. PCE, TCE, cDCE, tDCE, and VC concentrations have increased in MW-13, but ethene has only been detected at low concentrations of 5.8 µg/L or less in this well. Although the area around MW-13 appeared to be substrate-limited from March 2001 until November 2002, the availability of substrate has increased to between 24 and 39 mg/L from January through August 2003. In December 2003, TOC was below detection limits and PCE, TCE, cDCE, and VC increased over the levels seen in August 2003.

In December 2003, the new recovery wells contained a mix of PCE, TCE, cDCE, tDCE, and VC with cDCE being the dominant compound. Ethene and ethane were not analyzed in these wells in December 2003.

5.3.2 Chlorinated Ethane Results

The analytical data for the treatment test to date provides evidence for biodegradation of the chlorinated ethanes. Wells DMP-1, SMP-3, DMP-3, and SMP-4 had the highest concentrations of total chlorinated ethanes in September 2000 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 99% (178,000 µg/L to 2,300 µg/L) reduction in the 1TCA concentrations. 1TCA levels in wells DMP-3, SMP-4, and DMP-4 have dropped by >98 to 99.9 percent. 1DCA concentrations have dropped in SMP-1 (92%), SMP-3 (50%), DMP-3 (2%), SMP-4 (97%), and. DMP-4 (>97%). However, increased 1DCA concentrations have been noted in MW-14, MW-7 (through 1/8/02), and DMP-1 as a result of the dechlorination of 1TCA. Large reductions in the 1DCE concentrations have been observed in wells SMP-3 (>72%), DMP-3 (88%) and SMP-4 (>99%), but 1DCE increased in MW-14. 1DCE was not detected in August 2000 or December 2003 in SMP-1 and DMP-1. CA concentrations have declined by 84% in DMP-1, 27% in DMP-3, 39% in SMP-4, and 79% in DMP-4, but increased in other treatment cell wells. 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 in addition to the reductive dechlorination reaction where daughter products such as CA are produced and degraded. Acetic acid has been reported as a byproduct of 1TCA degradation (Lee and Davis 2000). Alternatively, sulfides generated from the reduction of sulfate may be reacting abiotically with the 1TCA and 1DCA (Gander et al. 2002).

Well SMP-4 has shown decreases in the 1TCA, 1DCA, CA, and ethane concentrations over the thirty-five months following the first injection of the oil emulsion. There was a rebound in concentrations of these compounds between December 2000 and January 2002 in SMP-4. When substrate levels were elevated after the second application of SRS™, the 1TCA and 1DCA concentrations dropped and have remained lower than the initial levels even with the low TOC level found in December 2003. Concentrations of 1TCA, 1DCA, and 1DCE higher than initial levels were observed in wells MW-14, MW-7 (through 1/8/02), and DMP-1. However, further degradation products CA and ethane levels are elevated in wells MW-14, MW-7, SMP-1, SMP-3, and DMP-3. Chloroethane can be biodegraded under aerobic and methanogenic conditions (Lee and Davis 2000).

Relatively low levels of 1TCA and daughter products were found in downgradient monitoring wells MW-12 and MW-13, which were first monitored for this program in March 2001. Little of the chlorinated ethanes have been found in MW-8 or MW-9. In the deep well MW-10, concentrations of 1DCA, 2DCA, 1DCE were relatively stable between January 2002 and January 2003, and CA was detected. A low level of 1DCA was detected in MW-11 in January 2003. 1DCA and ethane concentrations have increased in MW-12 between July 2001 and December 2003. In MW-13, 1TCA, 1DCA, 1DCE, and ethane concentrations have increased by 43 to 247%.

5.3.3 Other Organic Compounds Results

Several other organic compounds were detected in the groundwater including 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 thirty-nine months of the project operation to date, acetone concentrations decreased by 100% in DMP-1, but increased in MW-14 and SMP-4. In December 2003, acetone was found at 1200 µg/L in SMP-4 and represented 43% of the total volatiles in this well. Methylene chloride has decreased in all wells except MW-14 with declines by as much as 99.8 percent in SMP-1, >99% in DMP-1, 99.7% in SMP-3, 98% in DMP-3, 99% in SMP-4, 55% in DMP-4, and 38% in MW-7 (through 1/8/02), but increased in MW-14 through August 2003. Methylene chloride can also be anaerobically degraded. Toluene concentrations have declined in all eight wells in the project area. Although 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 by 97% in SMP-4 and >98% in DMP-4, but increased in MW-7 (through 1/8/02) 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. We are speculating that the MTBE plume is from an off-site source since it was not used on the Photocircuits site. MTBE has not been detected in any monitoring well since July 2002. The MTBE appears to have flushed through the system. In December 2003, other potential components of gasoline or other petroleum fuels including benzene, toluene, o-xylene, 1,2,4-trimethyl benzene, 1,3,5-trimethyl benzene, and/or naphthalene were detected in wells MW-14, SMP-1, DMP-1, SMP-3, DMP-3, SMP-4, DMP-4, MW-12, MW-13, RW-1, RW-2, but not wells MW-8, RW-3, or RW-4.

Few of the contaminants other than the chlorinated ethenes and ethanes were found in the downgradient wells. 2-Chlorotoluene concentrations have increased by 4% in MW-13 between 3/28/01 and 12/16/03, but decreased by 24% in MW-12. 4-Chlorotoluene has been found in MW-12. Benzene was often detected in MW-12 and MW-13. Acetone, methylene chloride, benzene, and n-propylbenzene have been detected in MW-13. None of these compounds were detected in wells MW-10 or MW-11 in January 2002 or January 2003.

In December 2003, the recovery wells contained the following compounds: PCE, TCE, cDCE, tDCE, VC, 1TCA, 1DCA, 1DCE, CA, toluene, 2-chlorotoluene, 4-chlorotoluene, chloroform, and chlorodifluoromethane.

5.3.4 Sum of VOAs

The sum of the concentrations of all of the contaminants in each well was calculated excluding the final degradation endproduct gases, acetylene, ethene, and ethane. The sum of the VOAs has declined by up to 97% in SMP-1 with large decreases in DMP-1 (89%), SMP-3 (88%), DMP-3 (68%), SMP-4 (71%), and DMP-4 (79%). The sum of VOAs has increased by 5,514% 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 through 1/8/02). The overall average of the sum of the volatiles has declined by 79% over the course of the pilot and full scale implementation.

This average includes the seven wells sampled on 12/16/03 and the well (MW-7) last sampled on 1/8/02.

A first order degradation half-life of 533 days was calculated for the average total volatile contaminants within the treatment cell. Based upon this degradation rate, 90 percent of the total contaminants should be removed within 48 months.

Since 3/28/01, the total volatiles in the downgradient wells outside of the influence of the substrate injection have fallen in MW-10 (1%), and MW-12 (44%), but increased in MW-8 (-10967%), MW-11 (-5617%), and MW-13 (-228%) and have remained non-detect in MW-9. The highest concentrations of total VOAs in the recovery wells were in well RW-1 (3,680 µg/L) followed by RW-2 (1,679 µg/L), RW-3 (1,172 µg/L), and RW-4 (649 µg/L).

5.3.5 Substrate Distribution

The total organic carbon concentrations in December 2003 within the treatment cell ranged from <0.51 mg/L in MW-14, SMP-3, SMP-4, and DMP-4 to 74.8 mg/L in DMP-1. Well MW-7 contained the emulsion in December 2003 and was not sampled. It presumably contains very high levels of TOC. TOC levels were above the target level of 50 mg/L only in wells SMP-1 and DMP-1 in December 2003. 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.

The substrate injections have apparently impacted TOC levels only in wells MW-12 and MW-13 of the downgradient wells. Downgradient wells MW-8, MW-9, MW-10, MW-11, MW-12, and MW-13 appear to be substrate-limited and did not have measurable levels of TOC in December 2003.

5.3.6 Electron Acceptor Results

As the microbes break down the emulsion, sulfate would be depleted and the concentrations of iron and methane would increase. Nitrate-nitrogen was present in December 2003 at low concentrations of 0.080 to <0.100 mg/L in the treatment cell and is a minor electron acceptor. Nitrate was detected in downgradient wells MW-8, MW-12, and MW-13 in December 2003. The predominant electron acceptor in the groundwater in December 2003 was sulfate with concentrations that ranged from 30 mg/L in SMP-1 and DMP-3 to 377 mg/L in DMP-3. Sulfate concentrations have declined from the initial concentrations in September 2000 in wells MW-14 (96%), SMP-1 (87%), DMP-1 (99.2% from 29,600 to 226 mg/L), DMP-3 (76%), SMP-4 (81%), and DMP-4 (57%) as would be expected with consumption of the oil emulsion. However, sulfate levels have increased in MW-7 (though 1/8/02) and SMP-3 over the course of the treatment. The average sulfate concentration in the cell has declined by 94%. However, as substrate levels dropped between August 2003 and December 2003, sulfate levels increased in wells MW-14, SMP-1, DMP-1, SMP-3, and SMP-4. Total iron concentrations within the treatment cell in December 2003 ranged from 3.09 mg/L in DMP-1 to 176 mg/L in SMP-4, which indicated that iron is also an important electron acceptor. Total iron concentrations have increased in five of the eight wells in the study 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 December 2003, methanogenic

conditions (>1,000 µg/L) was detected in all wells. Methane concentrations have increased in all eight monitoring wells in the project area between September 2000 and December 2003.

Well MW-8 appears to be under aerobic conditions based upon the presence of dissolved oxygen, 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 and decreased sulfate levels. No electron acceptor data was available for wells MW-10 and MW-11. Well MW-12 is under sulfate or iron-reducing conditions based upon the elevated iron levels and drops in sulfate concentrations. Although methane and iron concentrations have increased in MW-13 and sulfate levels have declined, nitrate levels are high enough (2.03 mg/L) for it to be the dominant electron acceptor.

5.3.7 Field Parameters

Field parameters including water level, pH, temperature, specific conductivity, redox potential, dissolved oxygen, and bromide (a tracer added with the emulsion) were collected since January 2002 for wells SMP-1, DMP-1, SMP-3, DMP-3, SMP-4, and DMP-4. Field parameters were collected for downgradient wells MW-8, MW-9, MW-12, and MW-13 since the April 2002 sampling event. The water levels ranged between 6.42 feet (SMP-1) to 7.96 feet (MW-8) below the top of the casing for wells from which this data was collected in January 2002. The pH was generally neutral, between 6.3 and 7.8. Well SMP-3 had an elevated pH readings, 8.7-9.9, but declined to between 7.0 and 7.6 from January to December 2003. The pH dropped to slightly acidic conditions of 5.3-6.3 in SMP-4. Downgradient wells MW-12 and MW-13 were slightly acidic to neutral, 6.2 to 7.3. The pH in the downgradient well MW-8 ranged from slightly acidic, 6.4 to slightly basic, 8.7. Groundwater temperatures ranged between 11.5 to 24.8 °C. In general, the specific conductivity of the groundwater within the treatment cell was high, between 6 and 5,890 umhos/cm. Downgradient wells MW-8 and MW-9 had lower specific conductivity readings of 120 to 221 µmhos/cm. Downgradient wells MW-12 and MW-13 had higher specific conductivity levels.

Negative redox potentials of –35 (SMP-4) to -128 mV (DMP-4) were found in the wells within the treatment cell in December 2003. Downgradient well MW-8 had a positive redox potential in December 2003, which is consistent with the low levels of contaminants found in this well. Although well MW-13 has higher contaminant levels, its redox potential ranged from –10 to 300 mV. The redox potential of MW-12 has ranged between –136 mV to 69 mV. Low (<1.0 mg/L) dissolved oxygen reading were observed in well DMP-3 and DMP-4 in December 2003. Higher dissolved oxygen levels were found in DMP-1, SMP-3, and SMP-4; the high dissolved oxygen levels are not consistent with the low redox potentials and anaerobic conditions found in these wells. Bromide was injected with the emulsion. Wells SMP-1, DMP-1, SMP-3, DMP-3, SMP-4, and DMP-4 had bromide levels of greater than 10 mg/L in June 2002. These wells generally had elevated TOC levels. Bromide levels increased between April and June 2002 in all monitoring wells within the cell except DMP-4. The highest bromide levels were in wells DMP-1, DMP-3, and SMP-4. Wells DMP-3 and SMP-4 had high TOC concentrations. Bromide was not measured after July 2002.

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 and 1TCA into ethene and ethane. 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 cDCE 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 treatment cell 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

There have been twelve groundwater sampling events during the course of the study. As of December 2003, the average total volatile contaminant concentrations within the treatment cell have decreased by 79%.

During the treatment period of 39 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 79%.
- The average concentrations of the parent compound 1,1,1-trichloroethane has decreased by 98%.
- PCE, TCE, cDCE, and VC were not detected in well DMP-4 in December 2003.
- Two monitoring wells (MW-7 and MW-14) have shown increased total volatile concentrations since September 1, 2000 by 33 to 5,514%. Well MW-7 could not be sampled in since January 2002 due to the presence of emulsion and the percent change

calculations are from September 2000 to January 2002. However, when viewed over the last 13 years, the total VOC concentrations in MW-7 have decreased 96%. From 11/1/99 to 4/28/03, total VOC concentrations decreased by 57% in MW-14. Since first monitored in May 1999, well DMP-4 has shown an decrease in total volatiles from 1,636 to 560 µg/L.

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 48 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.

7.0 CONCLUSIONS

Although the 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 79% over the course of 39 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 160 µg/L per day in higher concentration areas. In areas with lower total volatile concentrations, degradation rates range from 1.8 to 24.8 µg/L per day. Wells MW-7 (through January 2002) and MW-14 have shown increases in total VOCs through their last sampling point in December 2003.

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

A first order degradation half-life of 533 days was calculated for the average total volatile contaminants within the treatment cell. This average includes the wells sampled on 12/16/03 and the well MW-7 last sampled on 1/8/02. Based upon this degradation rate, 90% of the total contaminants should be removed within 48 months.

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

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 declined from the beginning of the treatment in most wells as the emulsified oil was utilized. TOC levels rose in all wells in the treatment cell after the second injection of the emulsion and ranged from 132 to 1,360 mg/L in August 2003. In December, 2003, TOC levels had fallen below the desired level of 50 mg/L in six of the eight wells in the treatment cell. 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 through 1/8/02. 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.

8.0 REFERENCES

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FIGURES

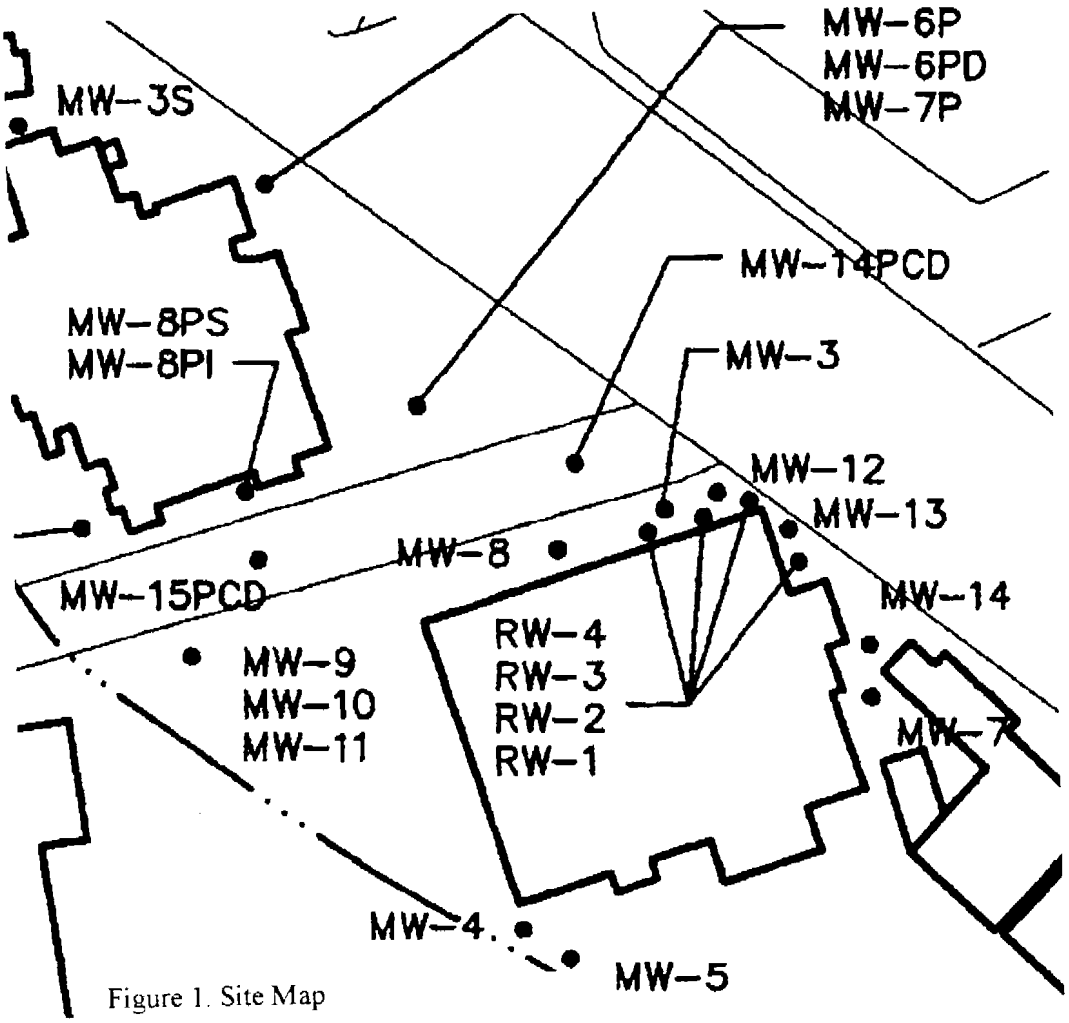

Figure 1. Site Map

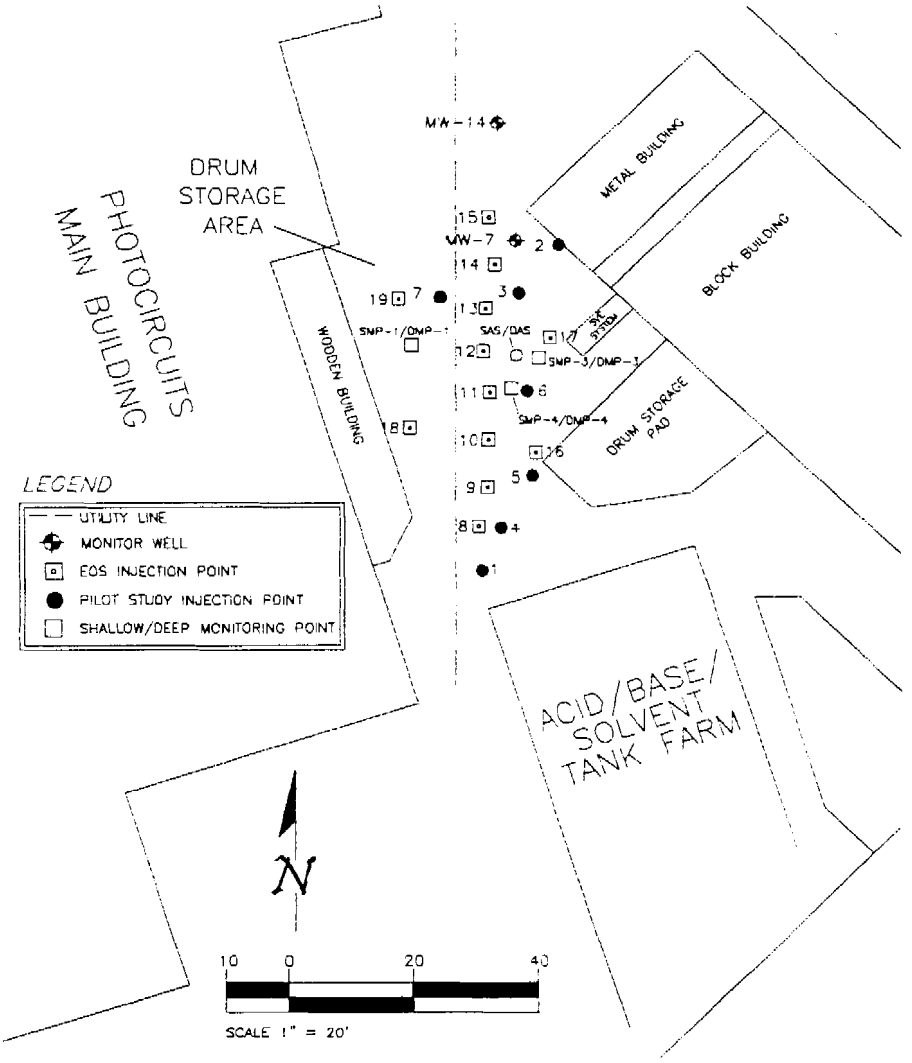

Figure 2. Treatment Cell

TABLES

Table 8. Photocircuits Anaerobic Pilot Analytical Summary

Well		MW 14									
Date		8/31/2000	10/19/2000	12/20/2000	3/28/2001	7/11/2001	1/8/2002	1/14/2003	4/30/2003	8/5/2003	12/16/2003
Days		0	49	111	209	314	495	866	970	1069	1202
Tetrachloroethene	µg/L		< 1.4	< 0.40	< 5.5	< 4.0	< 2.4	< 41	< 38	< 3.8	8.9
Trichloroethene	µg/L	< 0.85	< 1.35	< 0.85	< 10	< 3.4	< 3.4	< 23	< 21	< 2.1	5.8
cis 1,2 Dichloroethene	µg/L	< 0.95	< 1.7	< 0.95	< 15	< 2.8	< 3.6	< 21	< 16	8.48	32
trans 1,2 Dichloroethene	µg/l	< 1.35	< 1.40	< 1.35	< 11	< 2.8	< 5.8	< 23	< 22	< 2.20	< 1.0
Vinyl Chloride	µg/l	< 1.75	10.6	< 1.75	114	145	173	< 25.5	342	139	810
Ethene	µg/l	43	47	60	65	130	90		68	34	55
Acetylene	µg/l						5.7		< 1.2	< 1.2	< 1.2
1,1,1 Trichloroethane	µg/L	14.4	< 1.7	8.9	994	2040	1520	1020	1630	507	1200
1,1 Dichloroethane	µg/L	126	216	293	9230	18800	14100	8580	8860	9580	6100
1,2 Dichloroethane	µg/l	< 0.80	< 0.95	< 0.80	< 10	34.2	< 3.2	< 11.5	< 17	< 1.70	40
1,1 Dichloroethene	µg/L	< 1.05	6.3	< 1.05	443	751	542	323	296	90.8	820
Chloroethane	µg/l	15.6	< 1.25	< 1.65	132	298	501	848	1290	2160	1400
Ethane	µg/L	52	69	48	34	66	49		18	10	14
Acetone	µg/l	97.8	170	126	< 74	551	986	< 566	912	754	10000
Methylene Chloride	µg/l	15.1	1.50	< 1.0	220	156	134	< 31.5	< 15	52.9	130
2 Butanone	µg/L	124	75.3	< 5.1	< 125	863	344	< 826	< 164	797	1500
Toluene	µg/l	3.0	< 0.80	< 0.80	< 7.5	32.4	25	< 19	< 20	< 2.00	35
Benzene	µg/l	< 0.70	< 0.70	< 0.70	< 5	< 2.6	< 3.4	< 20	< 21	< 2.1	< 1.0
p Ethyltoluene	µg/l	< 1.2	< 1.05	< 1.2	< 8	< 4.4	< 4.8	< 31	< 15	< 1.5	< 1.0
1,3,5 Trimethylbenzene	µg/L	< 0.60	< 1.50	< 0.60	< 17	< 2.2	< 2.4	< 28.5	< 17	< 1.70	150
2 Chlorotoluene	µg/l	< 0.85	< 1.35	0.85	< 10.5	< 3.2	< 4.2	19	< 15	< 1.50	1.0
1,2,4 Trimethylbenzene	µg/l	< 0.65	1.25	< 0.65	< 11	< 4.4	< 2.6	< 30	< 15	< 1.50	< 1.0
Naphthalene	µg/L	< 1.35	< 0.90	< 1.35	< 9.5	< 8.2	< 5.4	< 47	< 40	< 4.00	< 1.0
o Xylene	µg/L	< 0.40	< 1.35	0.40	< 8	< 3.2	< 3.2	< 16.5	< 12	< 1.20	< 1.0
n Propylbenzene	µg/L	< 0.70	< 1.40	< 0.70	< 10.5	< 6.2	< 2.8	< 31	< 16	< 1.6	< 1.0
Methyl E Butyl Ether	µg/l	< 1.25	< 1.15	< 1.25	< 14	< 1.6	< 3.6	< 29	< 5.3	< 0.53	< 1.0
Sum VOAs (w/o Gases)	µg/l	396	478	428	11131	23671	18325	10771	13330	14089	22227
Methane	µg/l	44	58	380	1800	6400	8050		10600	6260	8460
Iron, Total	mg/l	55.2	13.2	69	197	388	279	186	239	186	368
Sulfate	mg/l	5470	779	32.6	307	1270	441	5.97	141	87.5	238
Nitrate Nitrogen	mg/L		0.15	0.17	< 0.025	< 0.0015	< 0.13	< 0.025	< 0.025	0.080	< 0.100
Total Organic Carbon	mg/l	23500	868	1990	2590	3530	2630	1980	2650	1360	< 0.51

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		MW 7					
Date		8/31/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002
Days		0	49	111	208	334	495
Tetrachloroethene	µg/l	< 0.40	< 0.56	< 0.40	< 2.2	< 0.20	< 0.12
Trichloroethene	µg/L	< 0.85	19.3	< 0.85	<4	16	2.7
cis-1,2 Dichloroethene	µg/L	47.3	283	355	149	187	83
trans-1,2 Dichloroethene	µg/L	< 1.35	< 0.56	< 1.35	<4.4	2.6	2.1
Vinyl Chloride	µg/L	39.3	67.1	139	60	63.9	10.5
Ethene	µg/l	63	170	110	33	94	110
Acetylene	µg/l						< 1.2
1,1,1 Trichloroethane	µg/L	< 0.55	< 0.62	< 0.55	< 4	< 0.16	< 0.14
1,1 Dichloroethane	µg/l	122	214	268	135	207	193
1,2 Dichloroethane	µg/L	< 0.80	< 0.48	< 0.80	< 4	< 0.13	3.7
1,1 Dichloroethene	µg/L	< 1.05	< 0.96	< 1.05	< 3.6	1.9	< 0.22
Chloroethane	µg/L	258	181	201	160	269	390
Ethane	µg/L	< 6	130	81	34	71	68
Acetone	µg/L	< 9.45	52.2	< 9.45	< 29.6	18.5	< 2.3
Methylene Chloride	µg/L	12.8	6.0	< 1	51.6	3.9	8.0
2 Butanone	µg/l	< 5.1	< 1.64	< 5.1	< 50	< 6.25	17.2
Toluene	µg/L	6.2	8.4	8.3	< 3	8.6	0.95
Benzene	µg/L	4.0	3.5	< 0.7	< 2	2.8	6.5
p Ethyltoluene	µg/L	< 1.2	< 0.68	< 1.2	< 3.2	< 0.22	< 0.24
1,3,5 Trimethylbenzene	µg/L	< 0.60	< 0.60	< 0.6	< 0.8	< 0.11	< 0.12
2 Chlorotoluene	µg/L	< 0.85	5.2	< 0.85	<4.2	6.3	8.4
1,2,4 Trimethylbenzene	µg/l	< 0.65	< 0.50	< 0.65	< 4.4	1.2	0.93
Naphthalene	µg/L	< 1.35	< 0.36	< 1.35	< 3.8	1.2	< 0.27
o Xylene	µg/l	< 0.40	< 0.54	< 0.4	< 3.2	1.1	< 0.16
n Propylbenzene	µg/L	< 0.70	< 0.56	< 0.7	< 4.2	< 0.31	< 0.14
Methyl T Butyl Ether	µg/l	< 1.25	< 0.46	< 1.25	< 5.6	< 0.080	< 0.18
Sum VOAs (w/o Gases)	µg/l	490	840	971	556	791	652
Methane	µg/L	660	1900	760	1050	5910	5050
Iron, Total	mg/l	2.22	1.84	3.93	6.72	8.78	13.1
Sulfate	mg/l	104	117	264	203	68.9	949
Nitrate Nitrogen	mg/L		< 0.015	0.023	0.029	0.017	0.085
Total Organic Carbon	mg/l	38.6	53.1	60	72.9	58.5	1.67

Table 1. Photochemilis Anaerobic Pilot Analytical Summary

Well		SMP 1											
Date		8/31/2000	10/18/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Days		0	48	111	208	314	495	579	663	762	865	970	1068	1202
Tetrachloroethene	µg/L	<16	<0.40	<22	<5.5	<2.0	<6.0	<12	<5.5	<0.22	<2.48	<0.76	<3.80	<1.0
Trichloroethene	µg/L	<34	79	860	1530	253	4410	26600	41	<0.72	<1.84	<0.42	<2.10	<1.0
cis 1,2 Dichloroethene	µg/L	24900	37500	3[illegible]60	<0.27	12300	18000	42500	25700	680	<1.68	<0.32	<1.60	5.4
trans 1,2 Dichloroethene	µg/L	<54	69.9	<40	132	34.5	68.5	326	155	<0.62	<1.84	<0.44	<2.20	<1.0
Vinyl Chloride	µg/L	4710	5990	5090	4770	4240	3490	1780	8920	2540	<2.04	<0.56	<2.80	40
Ethene	µg/L	900	2400	1140	900	1890	650	800	1820	3710	1180	800	190	44
Acetylene	µg/L						<11	7.4	<1.2	<2.2	<2.2	<5.5	<2.2	<1.2
1,1,1 Trichloroethane	µg/L	<22	<0.85	<34	156	158	<7.0	<11	<11	<0.52	<1.4	<0.44	<2.20	<1.0
1,1 Dichloroethane	µg/L	506	486	628	708	536	456	366	295	197	29.5	26.3	<2.20	42
1,2 Dichloroethane	µg/L	<32	<0.80	<17	<10	<1.3	<8.0	<11.5	<11.5	<0.46	<0.92	<0.34	<1.70	<1.0
1,1 Dichloroethene	µg/L	<42	64.3	<27	184	55.1	141	296	50.5	<0.54	<2.52	<0.46	<2.30	<1.0
Chloroethane	µg/L	<72	71.6	<53	<15	<3.8	<33.5	<30.5	<12.0	37.6	38.7	241	261	680
Ethane	µg/L	<6	<6	<25	<25	<25	<12	<13	3.6	4.6	1.8	<6.0	<2.4	<1.3
Acetone	µg/L	<378	<9.45	<166	<74	<14.4	<115	<156	<56.5	<2.26	<45.3	101	<14.1	<1.0
Methylene Chloride	µg/L	482	43.1	<56	<20.5	11.9	<18.5	<27	<10.5	<0.42	<2.52	2.75	<1.50	<1.0
2 Butanone	µg/L	<204	<5.1	<68	<125	<62.5	<860	<250	<190	<7.6	<66.1	<3.28	<16.4	<1.0
Toluene	µg/L	<32	61.1	<19	126	51.4	55	194	114	58.5	25.7	48.9	38.4	22
Benzene	µg/L	<28	4.40	<34	<5	<1.3	<8.5	<8	<10.5	94	22.8	24.4	<2.10	1.2
p I thyltoluene	µg/L	<48	<1.2	<20	<8	11.3	<12	<12	<8.0	<0.32	<2.48	<0.30	<1.50	<1.0
1,3,5 Trimethylbenzene	µg/L	<24	<0.60	<20	<17	<1.1	<6.0	<10	<10	<0.4	<2.28	<0.34	<1.70	<1.0
2 Chlorotoluene	µg/L	<34	16.3	<25	<10.5	47.3	<10.5	<13.5	<12.5	17.8	<1.52	10.1	<1.50	4.3
1,2,4 Trimethylbenzene	µg/L	<26	<0.65	<0.65	<11	15.7	<6.5	<8.5	<8.5	<0.34	<2.4	<0.30	<1.50	<1.0
Naphthalene	µg/L	<54	<1.35	<16	<9.5	21.2	<13.5	<7	<14.5	<0.58	<3.76	<0.80	<4.00	<1.0
n Xylene	µg/L	<16	<0.40	<18	<8	11.4	<8.0	<10	<12.5	5.7	<1.32	<0.24	<1.20	<1.0
n Propylbenzene	µg/L	<28	<0.70	<17	<10.5	<3.1	<7.0	<10.5	<8.0	<0.32	<2.48	<0.32	<1.60	<1.0
Methyl T Butyl Ether	µg/L	<50	<1.25	<25	<14	<0.80	117	<17	<9.0	<0.36	<2.32	<0.11	<0.053	<1.0
Sum VOAs (w/o Gases)	µg/L	30598	44386	36678	7806	17509	26740	72112	35121	3631	117	454	279	794
Methane	µg/L	3400	6200	2580	2060	3400	1100	2110	1890	2570	3680	5290	4810	6,370
Iron, Total	mg/L	19.8	11.6	15.1	11.1	29.9	16.4	38.3	11.2	12.2	13	42.2	27.6	21.7
Sulfate	mg/L	236	360	444	813	905	732	511	143	134	60.4	25.2	8.5	30
Nitrate Nitrogen	mg/L		0.084	0.071	12.3	0.016	<0.13	0.046	<0.025	<0.025	0.084	0.11	0.084	<0.100
Total Organic Carbon	mg/L	91.7	83.4	88	59.7	45.9	23.8	63.1	125	139	186	1280	168	50.5

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		DMP-1											
Date		8/31/2000	10/18/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Days		0	48	111	208	314	495	579	667	762	865	970	1068	1202
Tetrachloroethene	µg/l	< 0.40	< 0.080	< 0.40	< 5.5	< 1.0	< 0.60	< 0.48	1.1	< 0.11	< 3.1	< 0.76	< 1.90	< 1.0
Trichloroethene	µg/L	< 0.85	< 0.17	< 0.85	< 10	4.5	< 0.85	29.3	10.5	1.6	< 2.3	5.53	< 1.05	< 1.0
cis 1,2-Dichloroethene	µg/L	50.4	1.70	17.4	73.5	38.4	< 0.90	44.3	62.1	127	1610	1100	42.8	53
trans 1,2-Dichloroethene	µg/l	< 1.35	< 0.27	< 1.35	< 11	< 0.70	< 1.4	3.9	2.8	4.2	< 2.3	5.75	< 1.10	5.2
Vinyl Chloride	µg/l	188	1.5	40	125	42.7	< 4.25	62	25.4	180	1780	1020	75.8	260
Ethene	µg/l	560	1080	920	690	110	93	160	210	410	1080	900	120	166
Acetylene	µg/L					< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 2.2	< 2.2	< 1.2	< 1.2
1,1,1-Trichloroethane	µg/l	< 0.55	< 0.11	< 0.55	193	28.1	< 0.70	< 0.44	0.89	< 0.26	< 1.75	< 0.44	< 1.10	< 1.0
1,1-Dichloroethane	µg/l	91.8	12.6	157	1100	1320	423	240	412	414	486	401	162	320
1,2-Dichloroethane	µg/l	< 0.80	< 0.16	< 0.80	< 10	14.9	< 0.80	< 0.46	2.9	2.3	< 1.15	< 0.34	< 0.85	< 1.0
1,1-Dichloroethene	µg/l	< 1.05	< 0.21	< 1.05	< 9	< 0.70	< 1.10	< 0.6	< 0.27	< 0.27	< 3.15	4.7	< 1.15	< 1.0
Chloroethane	µg/l	1290	43.4	232	159	193	97	69.7	16.9	15.5	< 2.45	34.7	1100	530
Ethane	µg/l	< 6	< 6	50	< 100	< 50	< 0.8	< 1.3	1.8	1.7	16	24	6.1	10
Acetone	µg/l	8670	139	557	< 74	1150	< 11.5	< 6.24	48.8	46.8	< 56.6	86	< 7.05	< 1.0
Methylene Chloride	µg/L	68.3	1.40	22.4	191	32.8	< 0.185	< 1.08	1.7	1.8	< 3.15	4.87	< 0.75	8.0
2 Butanone	µg/l	< 5.1	< 1.02	8.1	< 125	< 11.3	< 86	< 10	< 3.8	< 1.8	< 82.7	< 4.28	< 8.20	67
Toluene	µg/l	36.5	2.80	24.1	40.5	9.1	< 0.70	2.2	5.8	7.2	14.4	14.3	14.2	19
Benzene	µg/l	< 0.70	0.14	8.5	< 5	< 0.65	< 0.85	< 0.32	< 0.21	48	98	214	40.4	58
p Ethyltoluene	µg/l	2.9	< 0.24	< 1.2	< 8	< 1.1	< 1.2	< 0.4	1.4	1.7	< 3.1	< 0.80	< 0.75	< 1.0
1,3,5 Trimethylbenzene	µg/l	2.8	< 0.12	< 0.60	< 17	< 0.55	< 0.60	< 0.4	1.3	1.6	< 2.85	< 0.64	< 0.85	1.5
2 Chlorotoluene	µg/l	23.7	< 0.17	18.2	< 10.5	33.7	19.7	57.6	80.1	27.8	36.2	31.9	29.1	41
1,2,4 Trimethylbenzene	µg/l	8.4	0.77	8.4	< 11	4.8	4.7	3.4	1.2	4.0	< 3.0	3.02	0.75	1.2
Naphthalene	µg/l	3.1	0.27	< 1.35	< 9.5	< 2.05	< 1.35	< 0.28	< 0.29	1.6	< 4.7	4.18	< 2.00	< 1.0
o Xylene	µg/l	< 0.40	< 0.080	0.40	< 8	< 0.80	< 0.80	0.4	0.82	1.1	< 1.65	2.97	< 0.60	1.5
n Propylbenzene	µg/l	< 0.70	< 0.14	16.9	< 10.5	1.55	< 1.20	< 0.42	< 0.16	< 0.16	< 3.1	< 0.12	25.2	< 1.0
Methyl t Butyl Ether	µg/l	< 1.25	< 0.25	< 1.25	< 14	< 0.40	< 0.90	< 0.68	< 0.18	< 0.18	< 2.9	0.11	< 0.26	< 1.0
Sum VOAs (w/o Oxies)	µg/l	12416	210	1304	1912	2872	564	512	648	886	4625	2933	1490	1368
Methane	µg/l	8200	23000	10600	4660	730	330	160	520	2530	15200	13000	24000	24000
Iron, Total	mg/L	88.5	4.45	3.1	21.7	8.65	15.9	4.31	6.8	4.2	2.88	13.1	2.17	3.09
Sulfate	mg/l	29600	47.7	179	715	1420	1200	2070	500	1080	1020	523	138	226
Nitrate Nitrogen	mg/l		0.20	0.024	0.05	0.019	< 0.13	< 0.025	< 0.004	0.027	0.16	0.088	0.025	0.087
Total Organic Carbon	mg/l	299	224	137	132	54.5	8.14	4.13	24.3	58.7	101	284	151	74.8

Table 1. Photoclectenits Anaerobic Pilot Analytical Summary

Well		SMP 3											
Date		9/1/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/10/2003	4/28/2003	8/4/2003	12/16/2003
Days		0	49	111	208	314	495	579	662	761	864	969	1067	1201
Tetrachloroethene	µg/L	<80	<80	<8	13.7	12.2	<6.0	<24	<5.5	9.6	<6.2	<3.8	<3.80	<1.0
Trichloroethene	µg/L	<170	<170	<17	<0.2	<1.7	<8.5	<34	<18	2.6	<4.6	<2.10	<2.10	<1.0
cis 1,2 Dichloroethene	µg/L	<190	<190	<19	2.3	16.4	<9.0	<36	<12	7.5	<4.2	<1.6	<1.60	2.5
trans 1,2 Dichloroethene	µg/l	<270	<270	<27	<0.22	<1.4	<14	<56	<15.5	1.7	<4.6	<2.2	<2.20	<1.0
Vinyl Chloride	µg/l	<150	<150	<35	38.8	98.8	<42.5	<170	118	165	<5.1	73.9	22.9	190
Ethene	µg/l	84	98	99	18	110	180	220	260	100	96	94	140	92
Acetylene	µg/L					2.1	5.4	2.2	6.3	<1.2	<1.2	<1.2	<1.2	<1.2
1,1,1 Trichloroethane	µg/L	178000	235000	32600	33700	13100	14500	7610	8070	5660	5780	4510	372	2300
1,1 Dichloroethane	µg/l	38200	47800	4770	<0.5	17600	8860	20500	10800	7620	7160	5830	14600	19000
1,2 Dichloroethane	µg/l	<160	<160	<16	6	20.6	<8.0	<32	<11.5	5.3	<2.3	<1.70	<1.70	7.6
1,1-Dichloroethene	µg/L	<210	<210	<21	<0.27	164	146	<44	112	337	312	239	38.9	50
Chloroethane	µg/l	<330	<330	<33	76.6	411	346	<134	384	509	519	1220	9290	4600
Ethane	µg/l	39	45	41	23	29	17	36	33	11	11	7.5	8.3	9.2
Acetone	µg/L	<1890	<1890	<189	3690	536	<115	<460	<56.5	70.3	<113	256	<14.1	<1.0
Methylene Chloride	µg/L	2400	<200	<20	14.6	122	89	152	<10.5	24.7	<6.3	13.6	8.13	24
2 Butanone	µg/L	<3020	<3020	<302	<2.5	<62.5	<860	<3440	<190	<3.8	<165	<26.4	<16.4	270
Toluene	µg/L	<160	<160	<16	31.7	96.5	54.5	<28	76	53.8	33.2	32.2	41.1	160
Benzene	µg/l	<140	<140	<14	<0.1	20.6	<8.5	<34	<10.5	2.6	<4.0	<2.10	<2.10	4.9
p Ethyltoluene	µg/l	<240	<240	<24	<0.16	<2.2	<12	<48	<8.0	<0.16	<6.2	<1.50	<1.50	<1.0
1,3,5 Trimethylbenzene	µg/L	<120	<120	<12	0.63	<1.1	<6.0	<24	<10	<0.2	<5.7	<1.70	<1.70	<1.0
2 Chlorotoluene	µg/L	<170	<170	<17	5.1	<1.6	<10.5	42	<12.5	21.8	<3.8	<1.50	<1.50	28
1,2,4 Trimethylbenzene	µg/l	<130	<130	<13	<0.22	<2.2	<6.5	<26	<8.5	1.6	<6.0	<1.50	<1.50	<1.0
Naphthalene	µg/l	<270	<270	<27	<0.19	<4.1	<13.5	<54	<14.5	1.1	<9.4	<4.00	<4.00	<1.0
o Xylene	µg/l	<80	<80	<8	<0	<1.4	<8.0	<32	<12.5	0.82	<3.3	<1.2	<1.20	<1.0
n Propylbenzene	µg/L	<140	<140	<14	<0.21	<3.1	<7.0	<28	<8.0	<0.16	<6.2	<1.60	<1.60	<1.0
Methyl E Butyl Ether	µg/L	<250	<250	<25	<0.28	9.0	117	<36	<9.0	<0.18	<5.8	<0.53	<0.53	<1.0
Sum VOAs (w/o Gases)	µg/l	218600	282800	37470	37579	32207	24113	28262	19530	14434	13804	12175	24373	26637
Methane	µg/L	100	140	44	36	500	1020	2000	5500	740	19500	16000	11600	20900
Iron, Total	mg/L	50.6	5.91	69.6	3.92	32.5	5.39	8.46	4.63	10.1	55.3	9	13.4	8.93
Sulfate	mg/l	286	392	154	53.7	1050	1640	3640	119	558	14.1	75.2	85.6	377
Nitrate Nitrogen	mg/l		<0.015	0.53	0.047	<0.015	<0.13	<0.009	0.017	<0.025	0.19	0.076	0.055	<0.100
Total Organic Carbon	mg/l	294	432	22.7	48.1	176	344	1600	173	40.1	39.1	184	168	0.51

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		DMP 3											
Date		9/1/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Days		0	49	111	208	314	495	579	662	761	864	969	1067	1201
Tetrachloroethene	µg/L	< 16	60.5	< 4.0	< 1.1	72.1	34	< 12	< 2.2	< 0.11	< 31	21.5	< 19.0	< 1.0
Trichloroethene	µg/L	< 34	< 13.5	< 8.5	< 2	8.6	< 8.5	< 8	< 7.2	< 0.36	< 23	< 4.20	< 10.5	< 1.0
cis 1,2 Dichloroethene	µg/L	< 38	< 17	< 9.5	< 3	14.9	< 9.0	< 10.5	< 4.8	1.6	< 21	42.7	< 8.00	< 1.0
trans 1,2 Dichloroethene	µg/L	< 54	< 14	< 13.5	< 2.2	< 1.4	< 14	< 10	< 6.2	1.3	< 23	< 4.40	< 11.0	3.1
Vinyl Chloride	µg/l	1040	928	818	145	785	654	397	113	61.2	< 25.5	146	342	520
Ethene	µg/l	430	450	310	290	490	360	220	620	550	970	340	490	447
Acetylene	µg/l						< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 2.2	< 1.2	< 1.2
1,1,1 Trichloroethane	µg/L	19700	14300	23400	793	24000	19500	11600	1350	234	5970	1510	3610	540
1,1 Dichloroethane	µg/l	5230	4860	4200	764	3250	2260	3770	2410	3980	10800	8120	10200	5100
1,2 Dichloroethane	µg/L	< 32	< 9.5	< 8.0	< 2	25.4	< 8.0	< 13.5	36.6	29.5	< 13.5	< 3.4	< 8.50	24
1,1 Dichloroethene	µg/L	156	< 24	< 10.5	< 1.8	168	< 11	< 15	17.4	5.6	< 31.5	36.2	65.1	18
Chloroethane	µg/l	5370	6970	1760	729	6630	2260	1900	10100	8640	9050	1600	8180	3900
Ethane	µg/l	5.7	9.4	44	12	8.2	8.6	16	31	26	35	17	11	10
Acetone	µg/L	< 178	< 68	< 94.5	< 14.8	< 144	< 115	< 156	945	121	< 566	173	< 70.5	< 1.0
Methylene Chloride	µg/l	436	149	< 10	31.8	58.7	< 18.5	< 27	91.8	62	< 31.5	44.7	< 7.50	47
2 Butanone	µg/l	< 204	< 41	51	< 25	< 62.5	< 860	< 250	< 76	< 3.8	826	< 32.8	< 82.0	< 1.0
Toluene	µg/L	232	134	103	15.7	140	108	84	85.6	30.5	56.5	22.5	80.8	160
Benzene	µg/l	< 28	< 7.0	< 7.0	< 1	< 1.3	< 8.5	< 8	< 4.2	< 0.21	< 20	< 4.2	< 10.5	< 1.0
p Ethyltoluene	µg/L	< 48	< 17	< 12	< 1.6	9.9	< 12	< 12	< 3.2	< 0.16	< 31	< 3.0	< 7.50	< 1.0
1,3,5 Trimethylbenzene	µg/l	< 24	< 15	6	< 1.4	< 1.1	< 6.0	< 10	< 4.0	1.5	< 28.5	< 1.40	< 8.50	4.8
2 Chlorotoluene	µg/l	< 44	< 13.5	8.3	< 2.1	51.5	< 10.5	< 13.5	< 5.0	18.7	< 19	< 1.00	< 7.50	46
1,2,4 Trimethylbenzene	µg/L	< 26	< 12.5	< 6.5	< 2.2	17	< 6.5	< 8.5	< 4.4	4.5	< 30	< 1.00	< 7.50	3.8
Naphthalene	µg/l	< 54	< 9.0	< 13.5	< 1.9	< 4.1	< 13.5	< 7	< 5.8	1.9	< 47	< 8.0	< 20.0	< 1.0
o Xylene	µg/l	< 16	< 13.5	< 4.0	< 1.6	< 1.6	< 8.0	< 10	< 5.0	1.8	< 16.5	< 2.40	< 6.00	5.7
n Propylbenzene	µg/L	< 28	< 14.0	< 7.0	< 2.1	< 3.1	< 7.0	< 10.5	< 3.2	< 0.16	< 31	< 3.20	< 8.00	< 1.0
Methyl T Butyl Ether	µg/l	< 50	< 11.5	< 12.5	< 2.8	< 0.80	125	< 17	26.6	< 0.18	< 29	< 1.06	< 2.65	< 1.0
Sum VOAs (w/o Gases)	µg/L	32164	27402	32281	2479	35231	24941	17751	15176	13195	25877	11907	22478	10372
Methane	µg/L	390	890	800	930	870	3400	3850	11100	3100	10700	5280	11300	76900
Iron, Total	mg/L	60.4	66.8	74.3	20.8	77.5	49.0	35.8	114	38.8	11.9	3.7	4.0	7.29
Sulfate	mg/l	124	186	137	94.6	173	188	127	185	1200	486	1290	519	30
Nitrate Nitrogen	mg/L		0.93	0.35	0.073	0.0030	< 0.13	0.029	< 0.025	< 0.025	1.17	0.051	0.15	< 0.100
Total Organic Carbon	mg/L	98.2	88.6	104	27.8	51.8	29.6	102	349	201	336	166	132	18.9

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		SMP 4											
Date		9/1/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Days		0	48	110	207	313	494	662	761	864	969	1067	1201
Tetrachloroethene	µg/L	13.2	<5.6	<0.80	<5.5	9.4	32	70.2	37.5	<31	102	65.6	180
Trichloroethene	µg/L	<0.85	<5.4	<1.7	<10	<1.7	<3.4	6.5	<0.36	<23	9.8	<2.10	13
cis 1,2 Dichloroethene	µg/l	143	<6.8	<1.9	<15	10.8	<3.6	30	27.2	<21	31	33.7	180
trans 1,2 Dichloroethene	µg/l	<1.35	<5.6	2.7	<11	<1.4	<5.6	0.62	<0.41	<23	<0.10	<2.20	<1.0
Vinyl Chloride	µg/L	175	34.6	17.6	72.5	111	126	4.9	2.1	<25.5	10.1	<2.80	78
Ethene	µg/L	220	190	220	170	160	340	87	29	28	82	17	24
Acetylene	µg/l						<1.2	<1.2	<1.2	<1.2	<1.2	<12.2	<1.2
1,1,1 Trichloroethane	µg/l	3150	246	997	3100	2630	2700	23	11.5	<17.5	8.54	<2.20	4.2
1,1 Dichloroethane	µg/L	4070	1740	1180	2230	3270	2890	135	149	184	80.4	54.5	110
1,2 Dichloroethane	µg/l	26.2	<3.8	<1.6	<10	19.7	<3.2	<0.46	3.0	<11.5	<0.85	<1.70	<1.0
1,1 Dichloroethene	µg/l	105	<9.6	<2.1	<9	48.2	130	<0.54	<0.27	<31.5	<1.75	<2.30	<1.0
Chloroethane	µg/l	1220	827	4000	1590	945	776	147	459	1060	1010	1290	740
Ethane	µg/l	<6	<6	39	<10	<10	2.4	12	2.7	3.1	4	<1.3	2.9
Acetone	µg/l	<9.4	<26	<18.9	<74	<14.4	<46	365	421	1650	433	613	1200
Methylene Chloride	µg/L	295	123	<2	278	127	66.8	7.5	8.8	<31.5	9.85	<1.50	17
2 Butanone	µg/L	<5.1	<16.4	<10.2	<125	<62.5	<344	<7.6	137	<826	<8.20	<16.4	230
Toluene	µg/L	116	37.6	25.5	<7.5	48.2	69.6	<0.40	0.96	<19	<1.00	<2.00	9.0
Benzene	µg/L	<0.70	<2.8	<1.4	<5	<1.3	<3.4	<0.42	<0.21	<20	<1.05	<2.10	<1.0
p Ethyltoluene	µg/l	4.8	<6.8	<2.4	<8	<2.2	<4.8	<0.32	<0.16	<31	<0.75	<1.50	<1.0
1,3,5 Trimethylbenzene	µg/L	3.2	<6.0	<1.2	<17	<1.1	<2.4	<0.40	<0.2	<28.5	<0.85	<1.70	<1.0
2 Chlorotoluene	µg/L	45.5	<5.4	<1.7	<10.5	21.4	<4.2	<0.50	<0.25	<19	<0.75	<1.50	2.0
1,2,4 Trimethylbenzene	µg/L	8.6	<5.0	<1.3	<11	<2.2	<2.6	<0.34	<0.17	<30	<0.75	<1.50	<3.0
Naphthalene	µg/L	<1.35	<3.6	<2.7	<9.5	<4.1	<5.4	<0.58	<0.29	<47	<2.00	<4.00	<1.0
o Xylene	µg/l	<0.40	<5.4	<0.8	<8	<1.6	<3.2	<0.50	<0.25	<16.5	<0.60	<1.20	<1.0
n Propylbenzene	µg/L	<0.70	<5.6	<1.4	<10.5	<3.1	<2.8	<0.32	<0.16	<31	<0.80	<1.60	<1.0
Methyl T Butyl Ether	µg/L	<1.25	<4.6	<2.5	<14	<0.80	<3.6	<0.36	<0.18	<29	<0.26	<0.53	<1.0
Sum VOAs (w/o Gases)	µg/l	9376	3008	5240	7271	7221	6790	790	1257	2894	1695	2057	2763
Methane	µg/l	450	470	1100	3650	1800	2660	4120	3300	14600	23300	12800	16600
Iron, Total	mg/L	76.2	38.9	47.1	54.5	41.2	17.8	1010	1110	541	209	214	176
Sulfate	mg/L	933	470	435	1700	1910	1630	119	73.1	5.24	119	59.1	178
Nitrate-Nitrogen	mg/L		<0.015	0.31	0.19	0.037	<0.13	<0.025	<0.025	0.99	0.05	0.33	<0.100
Total Organic Carbon	mg/l	73.6	60.4	<0.94	34.6	46.5	31.0	3440	3680	1900	1160	837	<0.51

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		DMP 4											
Date		9/1/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Days		0	48	110	207	313	494	578	662	761	864	969	1067	1201
Tetrachloroethene	µg/L	<0.40	<0.080	<0.080	<0.11	<2.0	<1.2	<0.48	<0.55	<0.11	<31	<19.0	<3.80	<1.0
Trichloroethene	µg/L	<0.85	<1.70	<0.17	<0.20	<1.7	<1.7	<0.32	<3.8	<0.36	<23	<10.5	<2.10	<1.6
cis 1,2 Dichloroethene	µg/L	<0.95	<1.90	<0.19	<0.30	<1.4	<1.8	<0.42	<1.2	<0.24	<21	<8.00	<1.60	<1.0
trans 1,2 Dichloroethene	µg/L	<1.35	<2.70	<0.27	3.4	<1.4	<2.8	<0.40	<1.55	1.9	<23	<14.0	<2.20	<1.0
Vinyl Chloride	µg/L	<1.75	<3.50	<0.35	2.9	<0.70	<8.5	<0.20	<1.15	5.4	<25.5	<11.0	<2.80	<1.0
Ethene	µg/l	250	260	220	160	<6	230	150	200	140	89	170	81	33
Acetylene	µg/l						<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
1,1,1 Trichloroethane	µg/L	56.3	130	<0.11	15.3	18.4	<1.4	<0.44	<1.3	<0.26	<17.5	<11.0	<2.20	<1.0
1,1 Dichloroethane	µg/L	29.7	20.1	<0.14	50.1	30.0	16.3	38.6	78.1	78.2	<21.5	92.5	<2.20	<1.0
1,2 Dichloroethane	µg/L	<0.80	<1.60	<0.16	8.7	<1.3	<1.6	<0.46	6.5	10.3	<14.5	<8.50	<1.70	<1.0
1,1 Dichloroethene	µg/l	<1.05	<2.10	<0.21	<0.18	<1.4	<2.2	<0.6	<1.35	<0.27	<31.5	<11.5	<2.10	<1.0
Chloroethane	µg/l	2420	2580	1400	3680	2680	1210	1260	1330	1240	4510	5460	3560	810
Ethane	µg/L	<6	<6	37	<6	<6	2.4	<1.3	4.7	1.1	2.3	4.4	2.9	<1.3
Acetone	µg/L	<9.45	<18.9	<1.89	<5.3	<14.4	<23	<6.24	<5.65	<1.13	<566	<70.5	<14.1	<1.0
Methylene Chloride	µg/l	22.8	16.6	3.9	19.8	20.8	8.4	12.2	22.2	26.9	<31.5	<7.5	10.2	4.3
2 Butanone	µg/l	<5.1	<10.2	<1.02	<2.5	<62.5	<172	<10	<19	<3.8	826	<82.0	<16.4	<1.0
Toluene	µg/L	11	7.5	3.1	6.1	<1.4	6.9	10.2	7.3	20.2	<19	<10.0	10.7	16
Benzene	µg/l	<0.70	<1.40	<0.14	<0.10	<1.4	<1.7	<0.321	<1.05	<0.21	<20	<10.5	<2.10	<1.0
p Ethyltoluene	µg/l	1.7	<2.40	<0.24	1.2	<2.2	<2.4	<0.48	<0.80	2.9	<31	<7.50	<1.50	<1.0
1,3,5 Trimethylbenzene	µg/l	9.2	<1.20	2.5	4.4	<1.1	<1.2	6.9	<1.0	2.9	<28.5	<8.50	<1.50	2.4
2-Chlorotoluene	µg/L	64.5	44.5	17.1	31.6	31.9	34.2	40.2	21.1	27.2	<19	<7.50	<1.50	25
1,2,4 Trimethylbenzene	µg/L	18.3	15.9	5.3	<0.22	9.2	9.0	13.5	5.3	6.4	<30	<7.50	<1.50	2.3
Naphthalene	µg/l	4.3	<2.70	<0.27	1.6	<4.1	<2.7	<0.28	<1.45	1.8	<47	<20.0	<4.00	<1.0
o Xylene	µg/l	4.8	<0.80	<0.008	5.0	<1.6	<1.6	3.6	<1.25	2.6	<16.5	<6.60	<1.20	<1.0
n Propylbenzene	µg/L	44.3	<1.40	<0.14	<0.21	<1.1	<1.4	<0.42	<0.80	<0.16	<31	<8.00	19.4	<1.0
Methy T Butyl Ether	µg/L	<1.25	<2.4	<0.25	<0.28	<0.80	21.9	<0.68	<0.90	<0.18	<29	<2.65	<0.53	<1.0
Sum VOAs (w/o Gases)	µg/l	2689	2815	3332	3888	2790	1307	1385	1471	1427	3510	5553	3600	860
Methane	µg/l	180	210	190	300	<6	250	240	2480	8600	21500	22400	19700	28600
Iron, Total	mg/l	48.2	39.2	42.5	85.4	116	31.6	29.1	44.1	15.8	56.8	62.1	114	66.3
Sulfate	mg/l	133	171	98.5	209	123	146	176	249	225	177	222	59.1	57.0
Nitrate-Nitrogen	mg/L		0.22	0.31	0.17	<0.015	<0.13	0.051	<0.025	<0.025	<0.025	0.18	0.17	0.08
Total Organic Carbon	mg/L	43.7	52.4	50.9	34.6	35.7	7.1	71.7	161	78.3	291	306	295	<0.51

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		MW-8									MW-9			
Date		3/28/2001	7/12/2001	1/8/2002	4/3/2002	6/26/2002	10/3/2002	1/15/2003	4/28/2003	8/5/2003	12/16/2003	3/28/2001	7/12/2001	1/8/2002	1/14/2003
Days		0	314	494	579	663	554	658	761	860	993	0	314	494	657
Tetrachloroethene	µg/L	<0.11	<0.20	<0.12	<0.24	<0.22	<0.11	<0.62	<0.76	<0.38	3.2	<0.11	<0.20	<0.24	<0.62
Trichloroethene	µg/L	1.8	1.7	<0.7	<0.16	<0.72	<0.36	<0.46	1.91	4.22	39	<0.20	<0.17	<0.16	<0.46
cis 1,2 Dichloroethene	µg/L	<0.30	1.2	<0.18	<0.21	<0.48	<0.24	<0.42	3.99	15.4	140	<0.30	<0.14	<0.21	<0.42
trans 1,2 Dichloroethene	µg/L	<0.22	<0.14	<0.28	<0.20	<0.62	<0.23	<0.46	<0.44	<0.22	<1.0	<0.22	<0.14	<0.20	<0.46
Vinyl Chloride	µg/L	<0.25	<0.070	0.85	<0.10	<0.46	<1.3	<0.81	<0.56	<0.28	<1.0	<0.25	<0.070	<0.10	<0.51
Ethene	µg/L	<6	<6	<1.3	<1.3	1.2	<1.2	4.6	<1.3	7.1	<1.3	<6	<6		
Acetylene	µg/L			<1.2	<1.2	<1.2	<0.26	<1.2	<1.2	<1.2	<1.2				
1,1,1-Trichloroethane	µg/l	<0.20	<0.16	<0.14	<0.22	<0.52	<0.3	<0.35	<0.44	<0.22	<1.0	<0.20	<0.16	<0.22	<0.35
1,1-Dichloroethane	µg/l	<0.14	<0.12	<0.25	<0.22	<0.60	<0.31	<0.43	<0.44	<0.22	17	<0.14	<0.12	<0.22	<0.43
1,2-Dichloroethane	µg/l	<0.20	<0.13	<0.16	<0.23	<0.46	<0.24	<0.23	<0.34	<0.17	<1.0	<0.20	<0.13	<0.23	<0.23
1,1-Dichloroethene	µg/L	<0.18	<0.14	<0.22	<0.30	<0.54	<0.27	<0.63	<0.46	<0.23	<1.0	<0.18	<0.14	<0.30	<0.63
Chloroethane	µg/l	<0.30	<0.18	<0.62	<0.61	<0.48	4.7	<0.49	<0.88	<0.44	<1.0	<0.3	<0.18	<0.61	<0.49
Ethane	µg/l	<6	<6	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<6	<6		
Acetone	µg/l	<1.48	<1.44	<2.3	<3.12	<2.26	<1.33	<11.3	<2.82	<1.41	<1.0	<1.48	<1.44	<3.12	<11.3
Methylene Chloride	µg/l	<0.41	<0.15	<0.47	<0.54	<0.42	<0.21	<0.63	<0.30	<0.15	<1.0	<0.41	<0.15	<0.54	<0.63
2 Butanone	µg/L	<2.5	<6.25	<17.2	<5.0	<7.6	<3.8	<16.5	<3.28	<1.64	<1.0	<2.5	<6.25	<5.0	<16.5
Toluene	µg/L	<0.15	<0.14	<0.14	<0.14	<0.40	<0.2	<0.38	<0.40	<0.20	<1.0	<0.15	<0.14	<0.14	<0.38
Benzene	µg/L	<0.10	<0.13	<0.17	<0.16	<0.42	<0.21	<0.4	<0.42	<0.41	<1.0	<0.10	<0.13	<0.16	<0.4
p Ethyltoluene	µg/L	<0.16	<0.22	<0.24	<0.24	<0.32	<0.16	<0.62	<0.30	<0.15	<1.0	<0.16	<0.22	<0.24	<0.62
1,3,5 Trimethylbenzene	µg/L	<0.34	<0.11	<0.12	<0.20	<0.40	<0.2	<0.57	<0.34	<0.17	<1.0	<0.34	<0.11	<0.20	<0.57
2 Chlorotoluene	µg/l	<0.21	<0.16	<0.21	<0.27	<0.50	<0.25	<0.38	<0.30	<0.15	<1.0	<0.21	<0.16	<0.27	<0.38
4 Chlorotoluene	µg/L										<1.0				
1,2,4 Trimethylbenzene	µg/L	<0.22	<0.22	<0.13	<0.26	<0.34	<0.17	<0.60	<0.30	<0.15	<1.0	<0.22	<0.22	<0.17	<0.60
Naphthalene	µg/L	<0.19	<0.41	<0.27	<0.14	<0.58	<0.29	<0.94	<0.80	<0.40	<1.0	<0.19	<0.41	<0.14	<0.94
o Xylene	µg/L	<0.16	<0.16	<0.16	<0.20	<0.50	<0.25	<0.33	<0.24	<0.12	<1.0	<0.16	<0.16	<0.20	<0.33
n Propylbenzene	µg/L	<0.21	<0.31	<0.14	<0.21	<0.42	<0.16	<0.62	<0.32	<0.16	<1.0	<0.21	<0.31	<0.21	<0.62
Methyl t Butyl Ether	µg/L	<0.28	<0.080	<0.18	<0.34	<0.36	<0.18	<0.58	<0.11	<0.053	<1.0	<0.28	<0.080	<0.34	<0.58
Sum VOAs (w/o Gases)	µg/L	1.8	2.9	1.0	0.0	0.0	3.7	0	5.9	19.6	199.2	0.0	0.0	0.0	0
Methane	mg/l	<6	61	9.1	<0.7	20	3.1	76.0	2.1	30	21	300	940		
Iron, Total	mg/l	0.023	0.088	<0.096	<0.096	0.033	0.23	0.069	0.061	0.036	0.0681	10.4	21.9		
Sulfate	mg/L	22.6	21.4	27.4	23.2	14.1	1.46	32.5	28.1	58.6	23.0	4.41	23.1		
Nitrate Nitrogen	mg/L	6.1	5.63	6.93	6.66	6.67	5.67	6.28	6.14	5.76	3.99	<0.025	<0.015		
Total Organic Carbon	mg/L	4.97	<0.94	<0.94	1.41	6.6	4.7	33.4	6.58	4.69	<0.51	7.98	6.79		

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		MW 10		MW 11		MW 12									
Date		1/22/2002	1/14/2003	1/22/2002	1/14/2003	3/28/2001	7/12/2001	1/9/2002	4/3/2002	6/26/2002	10/3/2002	1/15/2003	4/28/2003	8/5/2003	12/16/2003
Days		0	37635	0	37635	0	106	287	371	455	554	658	461	560	693
Tetrachloroethene	µg/L	2.3	<0.62	<0.12	<0.62	<0.11	< 0.20	<0.24	< 2.4	< 1.1	< 0.55	<0.62	<0.76	< 0.38	< 1.0
Trichloroethene	µg/L	6.7	4.7	<0.17	9.9	122	0.93	16.5	31	67.8	82.5	48.7	104	38.1	57
cis 1,2 Dichloroethene	µg/L	231	244	< 0.16	18.1	1280	18.2	430	503	467	488	311	369	223	230
trans 1,2 Dichloroethene	µg/L	<0.20	<0.46	< 0.28	<0.46	7.3	< 0.14	5.6	< 2.0	< 2.1	< 1.55	<0.46	3.84	1.70	3.3
Vinyl Chloride	µg/L	2.7	< 0.51	< 0.85	< 0.51	244	5.7	298	333	151	83.1	48.8	75.3	29.7	45
Ethene	µg/L					6.7	69	180	130	190	17	< 1.3	16	17	4.3
Acetylene	µg/L								< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,1,1 Trichloroethane	µg/L	<0.22	<0.35	<0.14	<0.35	<0.20	<0.16	< 0.22	< 2.2	< 2.6	< 1.3	<0.35	<0.44	<0.22	<1.0
1,1 Dichloroethane	µg/L	206	190	< 0.25	6.3	72.2	3.7	329	684	345	94.2	38.6	38.6	107	190
1,2 Dichloroethane	µg/L	5	5.8	< 0.36	< 0.23	2.9	< 0.13	1.4	< 2.3	< 2.3	< 1.15	< 0.23	< 0.34	< 0.17	< 1.0
1,1 Dichloroethene	µg/L	50.3	40.8	0.25	< 0.61	8.4	< 0.14	2.3	< 1	< 2.7	< 1.35	0.61	2.59	0.99	2.5
Chloroethane	µg/L	<0.49	13.5	< 0.67	<0.49	< 0.30	< 0.18	6.1	< 6.1	< 2.4	< 1.2	<0.49	< 0.88	0.91	< 1.0
Ethane	µg/L					<6	13	22	11	18	0.8	< 1.3	2.9	4.8	4.3
Acetone	µg/L	< 3.12	< 11.3	< 2.3	< 11.3	< 1.48	< 1.44	< 3.12	< 31.2	< 1.9	< 5.65	< 11.3	2.82	< 1.41	< 1.0
Methylene Chloride	µg/L	< 0.54	< 0.63	< 0.37	< 0.63	< 0.41	< 0.15	< 0.54	< 5.4	< 2.1	< 1.05	<0.63	<0.30	< 0.15	< 1.0
2 Butanone	µg/L	< 5.0	< 16.5	< 17.2	< 16.5	< 2.5	< 6.25	< 5.0	< 50	< 38	< 19	< 16.5	< 3.28	< 1.64	< 1.0
Toluene	µg/L	< 0.14	< 0.38	< 0.14	< 0.38	0.97	< 0.14	5.6	11.4	< 2.0	< 1.0	< 0.38	< 0.40	< 0.20	< 1.0
Benzene	µg/L	< 0.16	< 0.4	< 0.17	< 0.4	5.3	< 0.13	5.4	< 1.6	< 2.1	< 1.05	< 0.4	2.64	1.39	1.9
p Ethyltoluene	µg/L	<0.24	<0.62	< 0.24	< 0.62	< 0.16	<0.22	< 0.24	< 2.4	< 1.6	< 0.8	<0.62	<0.30	< 0.15	< 1.0
1,3,5 Trimethylbenzene	µg/L	<0.20	<0.57	< 0.12	< 0.57	<0.34	< 0.11	< 0.20	< 2.0	<2.0	<3	<0.57	<0.34	< 0.17	< 1.0
2 Chlorotoluene	µg/L	<0.27	< 0.38	< 0.21	< 0.38	393	26.9	2690	3660	1940	554	68	145	419	300
4 Chlorotoluene	µg/L					14.5	< 0.17	82.8	139	147	< 1.1	< 0.55	5.95	6.40	370
1,2,4 Trimethylbenzene	µg/L	< 0.17	< 0.60	< 0.13	< 0.60	< 0.22	< 0.22	< 0.17	< 1.7	< 1.7	< 0.85	< 0.60	< 0.30	< 0.15	< 1.0
Naphthalene	µg/L	< 0.14	< 0.94	< 0.27	< 0.94	< 0.19	< 0.41	< 0.14	< 1.4	< 2.9	< 1.45	< 0.94	< 0.80	< 0.40	< 1.0
o Xylene	µg/L	<0.20	<0.33	< 0.16	< 0.33	< 0.16	< 0.16	2.3	< 2.0	< 2.5	< 1.25	< 0.33	< 0.24	< 0.12	< 1.0
n Propylbenzene	µg/L	< 0.21	< 0.62	< 0.14	< 0.62	< 0.21	< 0.31	< 0.21	< 2.1	< 1.6	< 0.8	< 0.62	105	355	< 1.0
Methyl t Butyl Ether	µg/L	< 0.34	< 0.58	< 0.18	< 0.58	< 0.28	< 0.080	< 0.14	< 3.4	< 1.8	< 0.9	< 0.58	< 0.11	< 0.053	< 1.0
Sum VOAs (w/o Gases)	µg/L	504	498.8	0	34.3	2151	55	4875	5361	3118	1302	515.1	854	1189	1200
Methane	mg/L					420	1800	2170	1670	4470	310	33	620	750	337
Iron, Total	mg/L					7.29	55.6	61.0	9.44	46.7	37.1	13.2	42.1	27.9	16.7
Sulfate	mg/L					417	824	418	1160	100	407	236	244	440	312
Nitrate Nitrogen	mg/L					< 0.025	0.070	0.065	0.099	< 0.025	0.031	0.026	0.10	0.085	0.098
Total Organic Carbon	mg/L					33.3	36.6	0.94	72.6	< 0.51	29.4	43.6	89.2	59.8	< 0.51

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		MW 13									
Date		3/28/2001	7/12/2001	1/10/2002	4/3/2002	6/26/2002	10/3/2002	1/14/2003	4/29/2003	8/5/2003	12/17/2003
Days		0	106	288	371	455	554	0	762	860	994
Tetrachloroethene	µg/L	82.8	120	216	227	16.2	80.5	69	1.3	19.9	770
Trichloroethene	µg/L	85.9	114	216	132	13.9	77.2	69.8	12.1	21.0	580
cis 1,2-Dichloroethene	µg/l	784	897	1950	988	69.6	501	697	135	326	2000
trans 1,2 Dichloroethene	µg/l	4.6	4.7	11.9	8.0	< 0.31	3.0	< 0.46	< 0.44	<0.22	21
Vinyl Chloride	µg/L	38.6	58.6	112	74	4.6	26.2	16.3	2.60	7.18	300
Ethene	µg/L	< 6	< 6	1.6	< 1.3	1.1	< 1.3	< 1.3	4.5	5.8	< 1.3
Acetylene	µg/L			< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,1,1 Trichloroethane	µg/l	40	36.7	32.2	19.7	1.2	4.3	3.9	< 0.44	1.09	57
1,1 Dichloroethane	µg/l	323	351	476	305	17	96.8	95.1	8.85	31.1	770
1,2 Dichloroethane	µg/l	2.6	2.3	2.8	< 0.23	< 0.23	< 0.23	< 0.23	< 0.34	<0.17	< 1.0
1,1 Dichloroethene	µg/l	60.6	60.4	75.5	43.6	2.8	13.3	10.5	< 0.46	3.81	210
Chloroethane	µg/L	< 0.30	< 0.18	< 0.61	< 0.61	< 0.24	< 0.24	< 0.49	<0.88	<0.44	< 1.0
Ethane	µg/l	5.8	6.7	23	8.7	2.7	1.8	< 1.3	< 1.3	< 1.3	20
Acetone	µg/l	< 1.48	< 1.44	18.7	< 3.12	< 1.13	< 1.13	< 11.3	22.4	< 1.41	< 1.0
Methylene Chloride	µg/L	< 0.41	< 0.15	< 0.54	< 0.54	< 0.21	< 0.21	< 0.63	1.88	< 0.15	< 1.0
2 Butanone	µg/l	< 2.5	< 6.25	< 5.0	< 5.0	< 3.8	3.8	< 16.5	< 3.28	< 1.64	< 1.0
Toluene	µg/l	< 0.15	< 0.14	< 0.14	< 0.14	< 0.20	< 0.20	< 0.38	< 0.40	< 0.20	< 1.0
Benzene	µg/l	7.1	7.1	8.0	4.7	< 0.21	2.0	2.1	< 0.42	< 0.21	16
p Ethyltoluene	µg/L	< 0.16	< 0.22	< 0.24	< 0.24	< 0.16	< 0.16	< 0.62	< 0.30	< 0.15	< 1.0
1,3,5-Trimethylbenzene	µg/L	< 0.34	< 0.11	< 0.20	< 0.20	< 0.20	< 0.20	< 0.57	< 0.34	< 0.17	< 1.0
2 Chlorotoluene	µg/l	16.3	43.2	76.4	27.8	2.5	10.2	4.6	3.52	4.90	17
1,2,4 Trimethylbenzene	µg/l	< 0.22	< 0.22	< 0.17	< 0.17	< 0.17	0.17	< 0.60	< 0.30	< 0.15	< 1.0
Naphthalene	µg/l	< 0.19	< 0.41	< 0.14	< 0.14	0.29	< 0.29	< 0.94	< 0.80	< 0.40	< 1.0
o Xylene	µg/L	< 0.16	< 0.16	< 0.20	< 0.20	< 0.25	< 0.25	< 0.33	< 0.24	< 0.12	< 1.0
n Propylbenzene	µg/L	< 0.21	< 0.31	< 0.21	< 0.21	< 0.25	< 0.16	< 0.62	2.70	4.30	< 1.0
Methyl t Butyl Ether	µg/L	< 0.28	< 0.080	< 0.34	< 0.34	< 0.18	< 0.18	< 0.58	< 0.11	< 0.053	< 1.0
Sum VOAs (w/o Gases)	µg/l	1445	1698	4196	1830	128	815	968.3	202.1	419.4	4741.0
Methane	mg/L	12	21	250	110	140	920	1040	1030	820	9740
Iron, Total	mg/l	0.54	0.48	0.93	0.76	0.27	5.04	2.31	61.1	2.74	4.31
Sulfate	mg/l	597	509	648	366	222	177	368	442	419	403
Nitrate Nitrogen	mg/l	3.95	4.68	3.84	4.84	2.15	3.42	3.03	0.57	2.16	2.03
Total Organic Carbon	mg/l	9.52	13.3	< 0.94	15.4	< 0.51	6.0	29.8	38.9	24.1	< 0.51

Table 1. Photocircuits Anaerobic Pilot Analytical Summary

Well		RW 1	RW 2	RW 3	RW 4
Date		12/17/2003	12/17/2003	12/17/2003	12/17/2003
Days		0	0	0	0
Tetrachloroethene	µg/L	130	14	57	39
Trichloroethene	µg/l	240	140	470	170
cis 1,2-Dichloroethene	µg/L	2800	710	610	360
trans 1,2 Dichloroethene	µg/l	12	4.4	4.5	2.4
Vinyl Chloride	µg/l	280	82	4.6	< 1.0
1,1,1-Trichloroethane	µg/l	28	< 1.0	< 1.0	1.1
1,1 Dichloroethane	µg/L	73	120	65	99
1,2 Dichloroethane	µg/L	< 1.0	< 1.0	< 1.0	< 1.0
1,1 Dichloroethene	µg/L	68	6.2	18	16
Chloroethane	µg/L	16	< 1.0	< 1.0	< 1.0
Acetone	µg/l	< 1.0	< 1.0	< 1.0	< 1.0
Methylene Chloride	µg/L	< 1.0	< 1.0	< 1.0	< 1.0
2 Butanone	µg/l	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/L	6.4	3.9	< 1.0	< 1.0
Benzene	µg/l	1.1	2.6	< 1.0	< 1.0
p Ethyltoluene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5 Trimethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0
2 Chlorotoluene	µg/l	20	570	< 1.0	< 1.0
4 Chlorotoluene	µg/L	< 1.0	40	< 1.0	< 1.0
1,2,4 Trimethylbenzene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	µg/l	< 1.0	< 1.0	< 1.0	< 1.0
o Xylene	µg/L	< 1.0	< 1.0	< 1.0	< 1.0
n Propylbenzene	µg/L	< 1.0	< 1.0	< 1.0	< 1.0
Methyl t Butyl Ether	µg/L	< 1.0	< 1.0	< 1.0	< 1.0
Chloroform	µg/l	5.3	< 1.0	< 1.0	< 1.0
Chlorodifluoromethane	µg/L	< 1.0	< 1.0	8.0	6.6
Sum VOAs (w/o Gases)	µg/L	3680	1679	1172	649

Table 2. Photocircuits Anaerobic Pilot Chlorinated Solvents in Micromolar Concentrations

Contaminant	Well	MW-14									
Date		8/31/2000	10/19/2000	12/20/2000	3/28/2001	7/11/2001	1/8/2002	1/14/2003	4/28/2003	8/5/2003	12/16/2003
Tetrachloroethene	µM		<0.0081	<0.0023	<0.033	<0.024	<0.014	<0.19	<0.023	<0.023	0.024
Trichloroethene	µM	<0.0065	<0.010	<0.0065	<0.076	<0.026	<0.026	<0.18	<0.16	<0.016	0.044
cis-1,2-Dichloroethene	µM	<0.0098	<0.018	<0.0098	<0.15	<0.029	<0.037	<0.22	<0.17	0.088	0.33
trans-1,2-Dichloroethene	µM	<0.014	<0.014	<0.014	<0.11	<0.021	<0.060	<0.21	<0.23	<0.023	<0.010
Vinyl Chloride	µM	<0.028	0.17	<0.028	1.8	2.3	2.8	<0.41	5.5	2.2	13.0
Ethene	µM	1.5	1.7	2.1	2.3	4.6	3.2		2.4	1.2	2.0
Acetylene	µM						0.22		<0.046	<0.046	<0.046
1,1,1-Trichloroethane	µM	0.11	<0.013	0.067	7.5	15.3	11.4	7.6	12.2	3.8	9.0
1,1-Dichloroethane	µM	1.3	2.2	3.0	93.2	189.9	142.4	86.7	89.5	96.8	61.6
1,2-Dichloroethane	µM	<0.0081	<0.0096	<0.0081	<0.10	0.35	<0.032	<0.12	<0.17	<0.017	0.40
1,1-Dichloroethene	µM	<0.011	0.065	<0.011	4.6	7.8	5.6	3.3	3.1	0.94	8.46
Chloroethane	µM	0.21	<0.019	<0.026	2.0	4.6	7.8	13.1	20.0	33.5	21.7
Ethane	µM	1.7	2.3	1.6	1.1	2.2	1.6		0.60	0.33	0.47

Contaminant	Well	MW-7					
Date		8/31/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002
Tetrachloroethene	µM	<0.0021	<0.0033	<0.0024	<0.013	<0.0012	<0.00072
Trichloroethene	µM	<0.0065	0.15	<0.0065	<0.030	0.12	0.021
cis-1,2-Dichloroethene	µM	0.49	2.9	3.7	1.5	1.9	0.086
trans-1,2-Dichloroethene	µM	<0.014	<0.0058	<0.014	<0.045	0.027	0.022
Vinyl Chloride	µM	0.63	1.1	2.2	1.0	1.0	0.17
Ethene	µM	2.3	6.1	3.9	1.2	3.4	3.9
Acetylene	µM						<0.046
1,1,1-Trichloroethane	µM	<0.0041	<0.046	<0.0041	<0.030	<0.0012	<0.0010
1,1-Dichloroethane	µM	1.2	2.2	2.7	1.4	2.1	1.9
1,2-Dichloroethane	µM	<0.0081	<0.0038	<0.0081	<0.040	<0.0013	0.037
1,1-Dichloroethene	µM	<0.011	<0.0099	<0.011	<0.037	0.020	<0.0023
Chloroethane	µM	4.0	2.8	3.1	2.5	4.2	6.0
Ethane	µM	<0.20	4.3	2.7	1.1	2.4	2.3

Contaminant	Well	SMP-1											
Date		8/31/2000	10/18/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Tetrachloroethene	µM	<0.096	<0.0024	<0.13	<0.033	<0.012	<0.036	<0.091	<0.042	<0.0013	<0.015	<0.0046	<0.023	<0.0060
Trichloroethene	µM	<0.026	0.60	6.5	11.6	0.19	33.6	202.4	0.31	<0.0055	<0.014	<0.0032	<0.016	<0.0076
cis-1,2-Dichloroethene	µM	257	387	311	<0.0028	127	186	439	265	7.0	<0.017	<0.0033	0.017	0.056
trans-1,2-Dichloroethene	µM	<0.56	0.72	<0.41	1.1	0.36	0.71	3.9	<0.16	<0.0063	<0.019	<0.0018	<0.023	0.010
Vinyl Chloride	µM	75	96	81	76	68	56	28	143	41	<0.033	<0.0090	<0.045	0.61
Ethene	µM	33	86	41	32	68	23	29	65	133	42	29	6.8	1.6
Acetylene	µM						<0.12	0.28	<0.046	<0.085	<0.088	<0.21	<0.085	<0.046
1,1,1-Trichloroethane	µM	<0.16	<0.0011	<0.25	2.7	1.2	<0.052	<0.082	<0.097	<0.010	<0.010	<0.0032	<0.016	<0.0075
1,1-Dichloroethane	µM	5.1	4.9	6.3	7.2	5.4	4.6	3.7	3.0	2.0	0.30	0.27	<0.022	0.42
1,2-Dichloroethane	µM	<0.32	<0.0081	<0.17	<0.033	<0.033	<0.081	<0.12	<0.12	<0.0093	<0.0093	<0.0034	<0.017	<0.010
1,1-Dichloroethene	µM	<0.43	0.66	<0.27	1.9	0.57	1.5	3.1	0.52	<0.025	<0.025	<0.0046	<0.024	<0.010
Chloroethane	µM	<1.1	1.1	<0.82	<0.23	<0.23	<0.52	<0.47	<0.19	0.58	0.60	3.7	4.0	10.5
Ethane	µM	<0.20	<0.20	<0.83	<0.83	<0.83	<0.13	<0.43	0.12	0.15	0.060	<0.20	<0.080	<0.043

Table 2. Photocircuits Anaerobic Pilot Chlorinated Solvents in Micromolar Concentrations

Contaminant	Well	DMP-1											
Date		8/31/2000	10/18/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Tetrachloroethene	µM	<0.0024	<0.00048	<0.0024	<0.033	<0.0060	<0.0036	<0.0037	0.0066	<0.00066	<0.019	<0.0046	<0.011	<0.0060
Trichloroethene	µM	<0.0065	<0.0018	<0.0065	<0.076	0.034	<0.0065	0.22	0.080	0.012	<0.018	0.042	<0.0080	<0.0076
cis-1,2-Dichloroethene	µM	0.52	0.018	0.179566563	0.76	0.40	<0.0093	0.46	0.64	1.3	17	11.4	0.44	0.55
trans-1,2-Dichloroethene	µM	<0.014	<0.0028	<0.014	<0.11	<0.0072	<0.014	0.030	0.029	0.043	<0.024	0.059	<0.011	0.054
Vinyl Chloride	µM	3.0	0.056	0.630	2.0	0.68	<0.068	0.99	0.41	2.9	28	16.3	1.2	4.2
Ethene	µM	20	39	33	25	3.9	3.3	5.7	7.5	15.4	39	32.1	11.4	5.9
Acetylene	µM						<0.046	<0.046	<0.046	<0.046	<0.046	<0.085	<0.085	<0.046
1,1,1-Trichloroethane	µM	<0.0041	<0.00082	<0.0041	1.4	0.21	<0.0052	<0.0033	0.0067	<0.0019	<0.0013	<0.0033	<0.0082	<0.0075
1,1-Dichloroethane	µM	0.93	0.18	3.61	11	13	4.3	2.4	4.2	4.2	4.9	4.1	1.6	3.2
1,2-Dichloroethane	µM	<0.0081	<0.0016	<0.0081	<0.10	0.15	<0.0081	<0.0046	0.029	0.023	<0.012	<0.0034	<0.0086	<0.010
1,1-Dichloroethene	µM	<0.011	<0.0022	<0.011	<0.093	<0.0071	<0.011	<0.0062	<0.0028	<0.0027	<0.033	0.47	<0.012	<0.010
Chloroethane	µM	53	0.67	3.60	2.5	3.0	1.5	1.1	0.57	0.24	<0.038	0.54	17.1	8.2
Ethane	µM	<0.20	<0.20	<1.7	<3.3	<1.7	0.027	<0.043	0.060	0.057	0.53	0.80	0.20	0.33

Contaminant	Well	SMP-3											
Date		9/1/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Tetrachloroethene	µM	<0.48	<0.48	<0.048	0.083	0.074	<0.036	<0.14	<0.033	0.058	<0.038	<0.023	<0.023	<0.0060
Trichloroethene	µM	<1.3	<1.3	<0.13	<0.0015	<0.013	<0.065	<0.26	<0.14	0.073	<0.035	<0.016	<0.016	<0.0076
cis-1,2-Dichloroethene	µM	<2.0	<2.0	<0.20	0.024	0.17	<0.093	<0.37	<0.12	0.077	<0.043	<0.017	<0.017	0.026
trans-1,2-Dichloroethene	µM	<2.8	<2.8	<0.28	<0.0023	<0.014	<0.14	<0.58	<0.16	0.018	<0.047	<0.023	<0.023	<0.010
Vinyl Chloride	µM	<5.6	<5.6	<0.56	0.62	1.6	<0.68	<2.72	1.9	1.7	<0.082	1.2	0.37	3.0
Ethene	µM	3.0	3.5	1.4	0.61	3.9	6.4	7.9	9.3	4.6	3.4	3.4	5.0	3.3
Acetylene	µM						0.081	0.21	0.085	0.24	<0.046	<0.046	<0.046	<0.046
1,1,1-Trichloroethane	µM	1334	1762	241	253	98	109	57	60	42	43	34	2.8	17.2
1,1-Dichloroethane	µM	386	483	48	<0.0051	178	89	207	109	77	72	59	147	192
1,2-Dichloroethane	µM	<1.6	<1.6	<0.16	0.061	0.21	<0.081	<0.32	<0.12	0.017	<0.023	<0.017	<0.017	0.077
1,1-Dichloroethene	µM	<2.2	<2.2	<0.22	<0.0028	1.7	1.5	<0.45	1.2	3.5	3.2	2.5	0.40	0.52
Chloroethane	µM	<5.1	<5.1	<0.51	1.2	6.4	5.4	<2.1	5.5	7.9	8.0	18.9	144	71
Ethane	µM	1.3	1.5	1.4	0.77	0.97	0.57	1.20	1.1	0.37	0.37	0.25	0.28	0.31

Contaminant	Well	DMP-3											
Date		9/1/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Tetrachloroethene	µM	<0.097	0.36	<0.024	<0.0066	0.44	0.21	<0.072	<0.013	<0.00066	<0.19	0.13	<0.11	<0.0060
Trichloroethene	µM	<0.26	<0.10	<0.065	<0.015	0.065	<0.065	<0.061	<0.055	<0.0029	<0.18	<0.032	<0.080	<0.0076
cis-1,2-Dichloroethene	µM	<0.39	<0.18	<0.098	<0.031	0.15	<0.093	<0.11	<0.050	0.017	<0.22	0.44	<0.083	<0.010
trans-1,2-Dichloroethene	µM	<0.56	<0.14	<0.14	<0.023	<0.014	<0.14	<0.10	<0.064	0.013	<0.24	<0.045	<0.11	0.032
Vinyl Chloride	µM	17	15	13	2.3	12.6	10.5	6.1	1.8	1.0	<0.41	2.3	5.5	8.3
Ethene	µM	15.1	16.1	11.1	10.4	17.5	12.9	7.9	22	19.6	35	12.1	17.5	16.0
Acetylene	µM						<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046
1,1,1-Trichloroethane	µM	148	107	175	5.9	180	146	87	10	1.8	45	11.3	27.1	4.0
1,1-Dichloroethane	µM	53	49	42	7.7	32.8	22.8	38.1	24	40.2	109	84.0	103.0	51.5
1,2-Dichloroethane	µM	<0.32	<0.096	<0.081	<0.020	0.26	<0.081	<0.112	0.37	0.30	<0.12	<0.034	<0.086	0.24
1,1-Dichloroethene	µM	1.6	<0.25	<0.11	<0.018	1.7	<0.11	<0.15	0.18	0.058	<0.32	0.37	0.67	0.19
Chloroethane	µM	83	108	58	11	103	35	29	157	134	140	25	127	60
Ethane	µM	0.19	0.31	1.5	0.40	0.27	0.29	0.53	1.0	0.87	1.2	0.57	0.37	0.33

Table 2. Photocircuits Anaerobic Pilot Chlorinated Solvents in Micromolar Concentrations

Contaminant	Well	SMP-4											
Date		9/1/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Tetrachloroethene	µM	0.080	<0.0034	<0.00048	<0.033	0.056	0.193	0.42	0.23	<0.19	0.62	0.40	1.1
Trichloroethene	µM	<0.0065	<0.041	<0.013	<0.076	<0.076	<0.076	0.049	<0.0027	<0.18	0.075	<0.016	0.099
cis-1,2-Dichloroethene	µM	1.5	<0.070	<0.0020	<0.15	0.11	<0.026	0.31	0.28	<0.22	0.32	0.35	1.9
trans-1,2-Dichloroethene	µM	<0.014	<0.058	<0.0028	<0.11	<0.014	<0.058	<0.0064	<0.0032	<0.24	<0.011	<0.023	<0.010
Vinyl Chloride	µM	2.8	0.55	0.60	1.2	1.8	2.0	0.078	0.034	<0.41	0.16	<0.045	1.2
Ethene	µM	7.9	6.8	7.9	6.1	5.7	12.1	3.1	1.0	1.0	2.9	0.61	0.86
Acetylene	µM						<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046
1,1,1-Trichloroethane	µM	21	1.8	7.5	23	20	20	0.17	0.086	<0.13	0.061	<0.016	0.031
1,1-Dichloroethane	µM	41	18	12	23	33	29	1.4	1.5	1.9	0.81	0.55	1.1
1,2-Dichloroethane	µM	0.26	<0.038	<0.016	<0.10	0.20	<0.032	<0.0046	0.030	<0.12	<0.0086	<0.017	<0.010
1,1-Dichloroethene	µM	1.1	<0.099	<0.022	<0.093	0.50	1.3	<0.0056	<0.0028	<0.32	<0.012	<0.023	<0.010
Chloroethane	µM	19	13	47	25	15	12	2.3	7.1	16	15.7	20.0	11.5
Ethane	µM	<0.20	<0.20	1.3	<0.33	<0.33	0.080	0.40	0.090	0.10	0.13	<0.043	0.10

Contaminant	Well	DMP-4											
Date		9/1/2000	10/19/2000	12/20/2000	3/27/2001	7/11/2001	1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Tetrachloroethene	µM	<0.0024	<0.00048	<0.00048	<0.00066	<0.012	<0.0072	<0.0029	<0.0033	<0.00066	<0.19	<0.11	<0.023	<0.0060
Trichloroethene	µM	<0.0065	<0.013	<0.013	<0.0015	<0.013	<0.013	<0.0024	<0.14	<0.0027	<0.18	<0.080	<0.016	<0.076
cis-1,2-Dichloroethene	µM	<0.0098	<0.070	<0.0026	0.0031	<0.014	<0.019	<0.0033	<0.012	<0.0025	<0.22	<0.083	<0.017	<0.010
trans-1,2-Dichloroethene	µM	<0.014	<0.028	<0.0028	0.035	<0.014	<0.029	<0.0041	<0.016	0.020	<0.24	<0.14	<0.023	<0.010
Vinyl Chloride	µM	<0.028	<0.056	<0.0056	0.046	<0.011	<0.14	<0.0032	<0.018	0.086	<0.41	<0.18	<0.045	<0.016
Ethene	µM	8.9	9.3	7.9	5.7	<0.21	8.2	5.4	7.1	5.0	3.2	6.1	2.9	1.2
Acetylene	µM						<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046
1,1,1-Trichloroethane	µM	0.42	0.97	<0.00082	0.11	0.14	<0.010	<0.0033	<0.0097	<0.0019	<0.13	<0.082	<0.016	<0.0075
1,1-Dichloroethane	µM	0.30	0.20	<0.0014	0.51	0.38	0.16	0.39	0.79	0.79	<0.22	0.93	<0.022	<0.010
1,2-Dichloroethane	µM	<0.0081	<0.016	<0.0016	0.088	<0.013	<0.016	<0.0046	0.066	0.10	<0.12	<0.086	<0.017	<0.010
1,1-Dichloroethene	µM	<0.011	<0.022	<0.0022	<0.0019	<0.014	<0.022	<0.062	<0.014	<0.0028	<0.33	<0.12	<0.024	<0.010
Chloroethane	µM	38	40	51	57	42	19	20	21	50	54	85	55	7.9
Ethane	µM	<0.20	<0.20	1.2	<0.20	<0.20	0.080	<0.043	0.16	0.04	0.077	0.15	0.10	<0.043

Contaminant	Well	MW-8								
Date		3/28/2001	7/12/2001	1/8/2002	4/3/2002	6/25/2002	10/3/2002	1/15/2003	4/28/2003	8/5/2003	12/16/2003
Tetrachloroethene	µM	<0.00066	<0.0012	<0.00072	<0.0014	<0.0013	<0.0066	<0.0037	<0.0046	<0.0023	0.019
Trichloroethene	µM	0.014	0.013	0.0074	<0.0012	<0.0055	<0.0027	<0.0035	0.015	0.032	0.30
cis-1,2-Dichloroethene	µM	<0.0031	0.012	<0.0019	<0.022	<0.0050	<0.0025	<0.0043	0.041	0.16	1.4
trans-1,2-Dichloroethene	µM	<0.0022	<0.0014	<0.0029	<0.0021	<0.0064	<0.0032	<0.047	<0.0045	<0.0023	<0.010
Vinyl Chloride	µM	<0.0040	<0.0011	<0.014	<0.0016	<0.0074	<0.0037	<0.0082	<0.0090	<0.0045	<0.016
Ethene	µM	<0.21	<0.21	<0.046	<0.046	0.043	<0.0046	0.16	<0.046	0.25	<0.046
Acetylene	µM			<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046
1,1,1-Trichloroethane	µM	<0.0015	<0.0012	<0.0010	<0.0016	<0.0039	<0.0020	<0.0026	<0.0033	<0.0016	<0.0075
1,1-Dichloroethane	µM	<0.0014	<0.0012	<0.0025	<0.0022	<0.0062	<0.0030	0.043	<0.0041	<0.0022	0.17
1,2-Dichloroethane	µM	<0.0020	<0.0013	<0.0036	<0.0023	<0.0046	<0.0023	<0.0023	<0.0034	<0.0017	<0.010
1,1-Dichloroethene	µM	<0.0019	<0.0014	<0.0023	<0.0030	<0.0056	<0.0028	<0.0065	<0.0047	<0.0024	<0.010
Chloroethane	µM	<0.0047	<0.0028	<0.010	<0.0095	<0.0074	0.057	<0.0076	<0.014	<0.0068	<0.016
Ethane	µM	<0.20	<0.20	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043

Table 2. Photocircuits Anaerobic Pilot Chlorinated Solvents in Micromolar Concentrations

Contaminant	Well	MW-9			MW-10		MW-11		
Date		3/28/2001	7/12/2001	1/8/2002	1/14/2003	1/22/2002	1/14/2003	1/22/2002	1/14/2003
Tetrachloroethene	µM	<0.00066	<0.0012	<0.0014	<0.0037	0.014	<0.0037	<0.00072	<0.0037
Trichloroethene	µM	<0.0015	<0.0013	<0.0012	<0.0035	0.051	0.036	<0.0013	0.075
cis-1,2-Dichloroethene	µM	<0.0031	<0.014	<0.0022	<0.0043	2.4	2.5	<0.0029	0.19
trans-1,2-Dichloroethene	µM	<0.0022	<0.0014	<0.0021	<0.047	<0.0021	<0.0047	<0.0029	<0.0047
Vinyl Chloride	µM	<0.0040	<0.0011	<0.0016	<0.0082	0.043	<0.0082	<0.14	<0.0082
Ethene	µM	<0.21	<0.21						
Acetylene	µM								
1,1,1-Trichloroethane	µM	<0.0015	<0.0012	<0.0016	<0.0026	<0.0016	<0.0026	<0.0010	<0.0026
1,1-Dichloroethane	µM	<0.0014	<0.0012	<0.0023	<0.043	2.1	1.9	<0.0025	0.064
1,2-Dichloroethane	µM	<0.0020	<0.0013	<0.0023	<0.0023	0.051	0.059	<0.0016	<0.0023
1,1-Dichloroethene	µM	<0.0019	<0.0014	<0.0030	<0.0065	0.52	0.42	<0.0025	<0.0065
Chloroethane	µM	<0.0047	<0.0028	<0.0095	<0.0076	<0.0047	0.21	<0.010	<0.0076
Ethane	µM	<0.20	<0.20						

Contaminant	Well	MW-12									
Date		3/28/2001	7/12/2001	1/9/2002	4/3/2002	6/26/2002	10/3/2002	1/15/2003	4/28/2003	8/5/2003	12/16/2003
Tetrachloroethene	µM	<0.00066	<0.0012	<0.0144	<0.014	<0.00066	<0.0033	<0.0037	<0.00046	<0.0023	<0.00660
Trichloroethene	µM	0.93	0.0071	0.13	0.24	0.52	0.63	0.37	0.79	0.29	0.43
cis-1,2-Dichloroethene	µM	13.2	0.19	4.4	5.2	4.8	5.0	3.2	3.8	2.3	2.4
trans-1,2-Dichloroethene	µM	0.075	<0.0034	0.058	<0.023	<0.032	<0.016	<0.047	0.040	0.018	0.034
Vinyl Chloride	µM	3.9	0.091	1.8	5.3	2.4	1.3	0.78	1.2	0.48	0.72
Ethene	µM	0.24	2.8	6.1	4.6	6.8	0.61	<0.046	0.57	0.61	0.15
Acetylene	µM			<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046
1,1,1-Trichloroethane	µM	<0.0015	<0.0012	<0.0016	<0.016	<0.019	<0.0097	<0.0026	<0.0033	<0.0016	<0.0075
1,1-Dichloroethane	µM	0.73	0.037	3.3	6.9	3.5	1.0	0.39	0.39	1.1	1.9
1,2-Dichloroethane	µM	0.029	<0.0013	0.014	<0.023	<0.023	<0.012	<0.0023	<0.0034	<0.0017	<0.010
1,1-Dichloroethene	µM	0.087	<0.0011	0.021	<0.0031	<0.011	<0.013	0.0065	0.027	0.072	0.026
Chloroethane	µM	<0.0047	<0.0017	0.095	<0.095	<0.037	<0.019	<0.0076	<0.0093	0.59	<0.016
Ethane	µM	<0.20	0.43	0.73	0.37	0.60	0.027	<0.043	0.097	0.16	0.14

Contaminant	Well	MW-13									
Date		3/28/2001	7/12/2001	1/10/2002	4/3/2002	6/26/2002	10/3/2002	1/14/2003	4/29/2003	8/5/2003	12/17/2003
Tetrachloroethene	µM	0.50	0.72	1.3	1.4	0.10	0.49	0.42	0.078	0.12	4.6
Trichloroethene	µM	0.65	0.87	1.6	1.0	0.11	0.59	0.53	0.092	0.16	4.4
cis-1,2-Dichloroethene	µM	8.1	9.3	20.1	10.2	0.72	5.2	7.2	1.39	3.36	20.6
trans-1,2-Dichloroethene	µM	0.037	0.049	0.123	0.083	<0.0032	0.031	<0.0047	<0.0045	<0.0045	0.22
Vinyl Chloride	µM	0.62	0.91	1.8	1.2	0.074	0.42	0.26	0.042	0.11	4.8
Ethene	µM	<0.21	<0.21	0.057	<0.046	0.039	<0.046	<0.046	0.16	0.21	0.00
Acetylene	µM			<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046
1,1,1-Trichloroethane	µM	0.30	0.28	0.24	0.15	0.0090	0.032	0.029	<0.0033	0.0082	0.43
1,1-Dichloroethane	µM	3.3	3.5	4.8	3.1	0.17	0.98	1.0	0.089	0.314	7.8
1,2-Dichloroethane	µM	0.026	0.023	0.028	<0.002	<0.0023	<0.0023	<0.0023	<0.0034	<0.0017	<0.010
1,1-Dichloroethene	µM	0.63	0.62	0.78	0.45	0.029	0.14	0.11	<0.0034	0.039	2.2
Chloroethane	µM	<0.0047	<0.0025	<0.0095	<0.0095	<0.0037	<0.0037	<0.0076	<0.014	<0.0068	<0.016
Ethane	µM	0.19	0.22	0.77	0.29	0.090	0.060	<0.043	<0.043	<0.043	0.67

Table 2. Photocircuits Anaerobic Pilot Chlorinated Solvents in Micromolar Concentrations

Contaminant	Well	RW-1	RW-2	RW-3	RW-4
Date		12/17/2003	12/17/2003	12/17/2003	12/17/2003
Tetrachloroethene	µM	0.78	0.084	0.34	0.24
Trichloroethene	µM	1.83	1.1	3.6	1.3
cis-1,2-Dichloroethene	µM	28.9	7.3	6.3	3.7
trans-1,2-Dichloroethene	µM	0.12	0.035	0.046	0.028
Vinyl Chloride	µM	4.5	1.3	0.074	<0.016
Ethene	µM				
Acetylene	µM				
1,1,1-Trichloroethane	µM	0.21	<0.075	<0.075	0.0082
1,1-Dichloroethane	µM	0.74	1.21	0.66	1.0
1,2-Dichloroethane	µM	<0.010	<0.010	<0.010	<0.010
1,1-Dichloroethene	µM	0.70	0.86	0.19	0.17
Chloroethane	µM	<0.016	<0.016	<0.016	<0.016
Ethane	µM				

Table 3. Photoclreults Anaerobic Plat Field Data

Well		MW-7		SMP-1					
Well Depth	ft	23.2		9.1					
Well Diameter	inch	4		1					
Date		1/8/2002	4/2/2002	1/8/2002	4/2/2002	6/25/2002	10/2/2002	4/28/2003	8/4/2003
Water Level	ft	7.12		6.42					
pH		7.4	7.1	7.5	7.3	7.5	7.3	7.1	7.4
Temperature	°C	17.9	16.81	21.64	14.84	18.74	24.80	14.82	25.86
Spec. Conductivity	umhos/cm	4235	4100	2660	3250	3468	22	4230	6
Redox PotentIAL	mV	-53	-40	31	-130	-84	-76	-114	132
Dissolved Oxygen	mg/L	0.36	0.45	2.27	1.72	5.37	4.22	3.61	7.91
Bromide	mg/L				20	39			

Well		DMP-1							
Well Depth	ft	19.04							
Well Diameter	Inch	1							
Date		1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Water Level	ft	6.88							
pH		7.3		7.3	7.4	7.6	7.8	6.9	7.7
Temperature	°C	17.85		17.7	21.27	17.4	14.85	18.73	17.6
Spec. Conductivity	umhos/cm	5580		3597	4838	4900	4384	2970	3160
Redox PotentIAL	mV	-142		-154	-153	-85	-155	-41	-130
Dissolved Oxygen	mg/L	1.98		2.55	1.74	2.35	1.56	1.75	1.64
Bromide	mg/L		311	977					

Well		SMP-3							
Well Depth	ft	14.6							
Well Diameter	inch	1							
Date		1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Water Level	ft	6.8							
pH		9.9	8.2	8.8	8.8	7.0	7.4	7.6	7.1
Temperature	°C	12.06	11.47	19.18	22.80	13.35	15.41	21.26	13.91
Spec. Conductivity	umhos/cm	5550	5640	5890	4058	350	650	1760	790
Redox PotentIAL	mV	-44	-52	-95	-120	-62	-161	-72	-108
Dissolved Oxygen	mg/L	3.87	2.94	1.16	2.16	5.41	4.61	5.72	4.83
Bromide	mg/L		5	33					

Well		DMP-3							
Well Depth	ft	24.35							
Well Diameter	Inch	1							
Date		1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Water Level	ft	6.91							
pH		6.9	7.1	6.3	6.6	7.0	7.5	6.7	7.0
Temperature	°C	17.95	16.14	16.94	19.65	17.76	15.57	17.16	17.61
Spec. Conductivity	umhos/cm	3200	3120	3929	5863	5460	4685	4270	1831
Redox PotentIAL	mV	-120	-110	-146	-154	-159	-334	-119	-120
Dissolved Oxygen	mg/L	1.57	1.43	0.21	0.59	0.44	2.15	0.49	0.44
Bromide	mg/L		16	179					

Well		SMP-4							
Well Depth	ft	15.82							
Well Diameter	inch	1							
Date		1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Water Level	ft	6.82							
pH		7.6	7.5	5.3	6.1	5.7	5.8	5.7	6.3
Temperature	°C	16.54	14.82	18.77	22.40	11.68	15.55	21.61	13.95
Spec. Conductivity	umhos/cm	5186	5130	4440	5830	3200	850	2320	2640
Redox PotentIAL	mV	165	170	25	-35	-10	-50	-35	-71
Dissolved Oxygen	mg/L	0.73	0.65	7.5	1.32	7.19	4.4	3.05	4.38
Bromide	mg/L			336					

Table 3. Photochromis Anaerobic Pilot Field Data

Well		DMP-4							
Well Depth	ft	20.55							
Well Diameter	Inch	1							
Date		1/8/2002	4/2/2002	6/25/2002	10/2/2002	1/13/2003	4/28/2003	8/4/2003	12/16/2003
Water Level	ft	6.71							
pH		7.1	7.1	6.7	7.1	7.0	7.0	6.4	6.9
Temperature	°C	17.64	16.2	19.2	20.42	16.50	14.74	17.66	17.3
Spec. Conductivity	umhos/cm	2716	3140	2853	4480	3569	4850	4130	2190
Redox Potential	mV	-121	-80	-176	-178	-129	-163	-128	-132
Dissolved Oxygen	mg/L	0.41	0.72	0.58	0.61	2.3	0.78	0.55	0.48
Bromide	mg/L		38	19					

Well		MW-8							
Well Depth	ft	~102							
Well Diameter	Inch	4							
Date		1/8/2002	4/2/2002	6/25/2002	10/3/2002	1/15/2003	4/28/2003	8/5/2003	12/16/2003
Water Level	ft	7.96							
pH		8.7	8.4	6.4	8.2	7.2	7.0	6.3	7.0
Temperature	°C	15.43	14.87	12.89	13.46	14.15	14.49	13.74	13.47
Spec. Conductivity	umhos/cm	183	190	221	173	178	191	175	206
Redox Potential	mV	240	270	273	84	139	98	239.4	61
Dissolved Oxygen	mg/L	8.78	5.32	4.62	10.3	13.66	13.96	11.64	16.18
Bromide	mg/L		5.8	2.0					

Well		MW-9		MW-12					
Well Depth	ft								
Well Diameter	Inch								
Date		4/2/2002	1/14/2003	4/2/2002	6/25/2002	10/3/2002	1/15/2003	4/28/2003	8/5/2003	12/16/2003
Water Level	ft									
pH		7.1	6.8	6.5	6.6	6.6	7.1	6.8	6.5	6.9
Temperature	°C	14.26	15.97	14.2	14.6	16.27	14.89	15.48	16.02	15.55
Spec. Conductivity	umhos/cm	200	120	4120	4689	4130	4860	2998	3808	2108
Redox Potential	mV	290	178	-30	-136	-122	69	-132	-99	-13
Dissolved Oxygen	mg/L	0.92	4.04	0.7	0.38	1.14	11.88	1.28	0.41	4.81
Bromide	mg/L			11	4.1					

Well		MW-13					
Well Depth	ft						
Well Diameter	Inch						
Date		4/2/2002	6/25/2002	10/3/2002	1/14/2003	4/29/2003	8/5/2003
Water Level	ft						
pH		6.2	6.6	6.6	7.6	7.3	6.5
Temperature	°C	16.9	16.00	17.94	17.94	16.76	18.1
Spec. Conductivity	umhos/cm	1520	960	1888	1361	885	1528
Redox Potential	mV	300	279	-10	101	-3	219
Dissolved Oxygen	mg/L	1.21	0.48	0.6	3.87	1.9	4.86
Bromide	mg/L	7.4	9.6				

Table 4. Photocircuits Anaerobic Pilot Percent Change Between 9/1/00 and 1/8/02 or 1/13/03

Compound	MW-14	MW-7	SMP-1	DMP-1	SMP-3	DMP-3	SMP-4	DMP-4
First Sampled	8/31/2000	8/31/2000	8/31/2000	8/31/2000	9/1/2000	9/1/2000	9/1/2000	9/1/2000
Last Sampled	12/16/2003	1/8/2002	12/16/2003	12/16/2003	12/16/2003	12/16/2003	12/16/2003	12/16/2003
Acetone	-10125	0	0	100	0	0	>-12666	0
Methylene Chloride	-761	38	99.8	88	99.0	98	94	81
Toluene	-1067	85	>31	48	0	31	92	-40
2-Chlorotoluene	0	>-888	>87	-81	84	-35	96	61
Sum VOAs (w/o gases)	-5514	-33	97	89	88	68	71	79
Methane	-19127	-665	-87	-189	-20800	-4233	-3589	-15789
Iron	-204	-490	-10	97	82	88	-131	-38
Sulfate	96	-813	87	99.2	-32	76	81	57
TOC	>99.99	96	45	75	>99.8	81	>99	99
PCE	0	0	0	0	0	0	-1264	0
TCE	>-582	>-218	0	0	0	0	>-1429	0
cDCE	>-3268	82	99.98	-5	0	0	-26	0
tDCE	0	>-56	0	>-285	0	>94	0	0
VC	>-46186	73	99.2	-38	>-46	50	55	0
Ethene	-28	-75	95	70	-10	4	89	87
TTCA	-8233	0	0	0	99	97	99.9	>98
DCA	-4741	-58	92	-249	50	2	97	>97
DCE	>-77995	0	0	0	>72	88	>99	0
CA	-8874	-51	>-844	84	>-1294	27	39	79
Ethane	73	>-1033	0	>-67	76	-75	52	0

Table 5. Photocircuits Downgradient Wells Percent Change Between 3/28/01 and 1/14/03

Compound	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13
First Sampled	3/28/2001	3/28/2001	1/22/2002	1/22/2002	3/28/2001	3/28/2001
Last Sampled	12/16/2003	1/14/2003	1/14/2003	1/14/2003	12/16/2003	12/16/2003
Acetone	0		0	0	0	0
Methylene Chloride	0		0	0	0	0
Toluene	0		0	0	>-3	0
2-Chlorotoluene	0		0	0	24	-4
Sum VOAs (w/o gases)	-10967		1	>-5617	44	-228
Methane	>-250				20	-81067
Iron	-196				-129	-698
Sulfate	-2				25	32
TOC	>90				98	>95
PCE	0		>73	0	0	-830
TCE	-2067		30	>-5722	53	-575
cDCE	>-46567		-6	>-9956	82	-155
tDCE	0		0	0	55	-483
VC	0		>82	0	82	-677
Ethene	0				36	0
1TCA	0		0	0	0	-43
1DCA	0		8	>-2420	-163	-138
1DCE	0		-16	0	70	-247
CA	0		>-2655	0	0	0
Ethane	0				>28	-245

Table 6. Summary of Changes in Concentrations of Chloroethenes, Chloroethanes, Electron Acceptors Electron Donor by Well

Well	Chlorinated Ethene Dechlorination	Chlorinated Ethane Dechlorination	Electron Acceptors	Electron Donor Availability
MW-14	Ethene high. VC increasing since March 2001 and now primary chlorinated ethene. PCE, TCE, and cDCE detected in December 2003 when substrate limited.	1TCA, 1DCA, 1DCE, and CA, increased between December 2000 and July 2001 as contaminated water displaced by emulsion moved back into well. Concentration of 1DCA decreased since peak in July 2001, but 1DCE and CA increasing. Ethane fairly stable.	Sulfate decreased by 96%, methane and iron up greatly.	Emulsion found 4/02, 6/02, and 10/02 and TOC levels had been above 1,000 mg/L. TOC availability now limited.
MW-7	Ethene generally predominant product, TCE up slightly. cDCE and VC down by 82 and 73% from start of pilot. tDCE up slightly. Not sampled since 1/02 because of emulsion.	1DCA and CA up, CA major product. Ethane produced.	Sulfate increased from 69 to 949 mg/L from 7/11/01 to 1/8/02, methane and iron up greatly.	TOC had fallen to 1.7 mg/L in 1/02. Emulsion found thereafter.
SMP-1	TCE and cDCE up beginning in January 2002, but fell between July and October 2002 and were not detected from January 2003 until August 2003. VC increased and then fell to non-detect as more substrate became available. VC found in December 2003. Ethene increased when substrate levels were higher, but declined in December 2003.	No 1TCA detected since 7/01. 1DCA down by 92% and 1DCE not detected. CA produced. Little ethane.	Sulfate down 87% from start of pilot; sulfate levels decreasing with higher substrate. Methane and iron up from start of pilot.	TOC rebounded to 1,280 mg/L in 4/03; enhanced dechlorination. TOC dropped to 50 mg/L in December 2003.
DMP-1	cDCE, tDCE, and VC concentrations up from start of pilot, but ethene predominant product.	1DCA up 249%, CA down by 84%, little ethane detected.	Sulfate down 99.2% and iron by 97%, methane increased..	TOC increased from 24 mg/L in 6/02 to 284 mg/L in 4/03. Adequate supply in December 2003.
SMP-3	PCE, TCE, and tDCE not detected in December 2003. cDCE and VC detected, but ethene predominant product.	1TCA down by 99%, 1DCA down 50%, 1DCE down 72%, and CA increasing as 1TCA and 1DCA degraded. Some ethane.	Sulfate decreased from 3,640 mg/L in April 2002 to 75 mg/L in April 2003, but increased to 377 mg/L in December 2003. Methane increased greatly and iron variable.	TOC in April 2002 up to 1,600 mg/L, but then fell below optimal levels. Below target levels in December 2003 (<0.51 mg/L).
DMP-3	Low level of tDCE detected 12/03, but VC increasing as substrate limited. Ethene major product.	1TCA down by 97%, 1DCA down by2%, and 1DCE down by 88%. CA decreased by 27%. Ethane up.	Sulfate decreased by 76%. Methane up, but iron decreasing.	TOC increased to 349 mg/L after second emulsion injection, but has fallen below target to 19 mg/L in December 2003.
SMP-4	PCE and TCE, and cDCE up, and VC down. ethene decreased to point where it is no longer predominant chlorinated ethene.	1TCA, 1DCA, and 1DCE down by up to 99.9%, but CA increased. Little ethane.	Sulfate decreased to 178 mg/L in December 2003, methane and iron increased greatly.	High levels of TOC (3,680 mg/L found on 10/2/02) and were elevated until December 2003 when <0.51 mg/L found .

Table 6 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
DMP-4	No detectable PCE, TCE, cDCE, tDCE, or VC in December 2003. Ethene predominants.	1TCA down >80, 1DCA down by >97%, 1DCE non-detect 12/03. CA predominant product and decreasing. Little ethane.	Sulfate down 57%, iron and methane increased.	TOC now below adequate levels.
MW-8	PCE, TCE, and cDCE detected 12/03. No VC or ethene.	1DCA detected in December 2003.	Little sulfate, but iron and methane have increased	Little TOC available.
MW-9	No chlorinated ethenes or ethene detected in January 2002.	No chlorinated ethanes or ethane detected.	Low sulfate, some methane and iron.	Little TOC available.
MW-12	TCE, cDCE, tDCE, VC, and ethene decreasing, ethene lower than in January2002 to June 2002.	1DCA increasing, but 1DCE decreasing, ethane detected at low level	Sulfate decreased by 25%, iron increased, but methane decreased.	TOC level not adequate, <0.51 mg/L. .
MW-13	Increases in PCE, TCE, cDCE, tDCE, and VC concentrations, trace ethene.	Increases in 1TCA (43%), 1DCA (138%), 1DCE (247), and ethane (245%) concentrations. No CA.	Methane and iron increased, and sulfate down 32%.	TOC level of <0.51 mg/L in December 2003, below optimal.