

11042-07-007



Groundwater Monitoring Report for October 1999

**HAMILTON BEACH ♦ PROCTOR-SILEX, INC.
Washington, North Carolina**

Prepared for
HAMILTON BEACH ♦ PROCTOR-SILEX, INC.
4421 Waterfront Drive
Glen Allen, Virginia 23060

Prepared by
Radian International
1600 Perimeter Park Drive
Morrisville, North Carolina 27560

November 1999

HAMILTON BEACH ♦ PROCTOR-SILEX, INC.

VIA FEDERAL EXPRESS

December 7, 1999

R. L. Willoughby
City Manager
City of Washington
102 East Second Street
Washington, NC 27889



Dear R.L.:

I enclose herein Radian's quarterly Groundwater Monitoring Report for our Washington plant site. We are required to file with NCDENR such quarterly reports until our Corrective Action Plan is approved and remediation begins.

Please let me know if you have any questions or would like to discuss this matter.

Sincerely yours,

George P. Manson, Jr.

GPM, Jr/ajj

Enclosure

cc (w/o enclosure): B. A. DeVore
F. N. Holscher
C. S. Leslie

**GROUNDWATER MONITORING REPORT
FOR OCTOBER 1999
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

**Groundwater Incident No. 14338
Site Priority Ranking B**

**Prepared for:
Hamilton Beach◇Proctor-Silex, Inc.
4421 Waterfront Drove
Glen Allen, Virginia 23060**

**Prepared by:
Radian International
P.O. Box 13000
Research Triangle Park, North Carolina 27709**

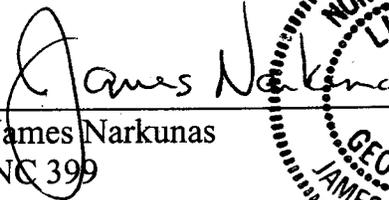
November 1999

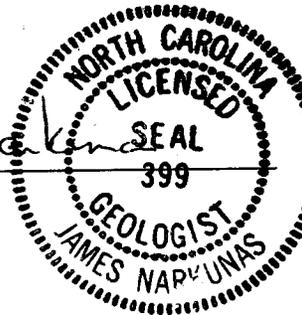
CERTIFICATION PAGE

GROUNDWATER MONITORING REPORT
FOR OCTOBER 1999
Hamilton Beach ♦ Proctor-Silex, Inc.
Washington, North Carolina

Groundwater Incident No. 14338
Site Priority Ranking B

I, James Narkunas, a Licensed Geologist in the State of North Carolina, certify that this report and its contents have been prepared under my direct control and personal supervision.


James Narkunas
NC 399



11/24/99
Date

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1.0 INTRODUCTION

The Hamilton Beach Proctor-Silex (HBPS) facility is located at 234 Springs Road, north of the City of Washington, in Beaufort County, North Carolina (Figure 1-1). The facility and surrounding land parcel are owned by the City of Washington and have been leased by HBPS since 1990 and previously leased by predecessor companies. The facility is involved in the final assembly, packaging, and warehousing of small electrical household appliances.

Since 1992, when organic compounds were initially detected in groundwater at the site, several phases of investigation have been performed, including a comprehensive site assessment (CSA). The results of the CSA indicated that a plume of organic compounds is present in groundwater underlying the site. The specific nature, volume, and time period of any releases contributing to the plume are unknown. However, the principal constituents of the plume are no longer used at the facility.

A plan for corrective action at the site has been proposed. Until corrective action is implemented, groundwater will be sampled and analyzed on a quarterly schedule according to a monitoring program requested and approved by the North Carolina Department of Environment and Natural Resources, Groundwater Section. The purpose of the monitoring program is to sample selected downgradient monitoring wells to detect potential migration of the plume.

Radian International (Radian) conducted groundwater sampling at the facility in October 1999. The sampling event included the measurement of water levels, temperature, pH, and specific conductance; and the collection and analysis of samples from seven monitoring wells. This report describes the sampling methods and presents the results for the second quarterly sampling event.

2.0

FIELD METHODS

Groundwater was sampled on October 20, 1999, in general accordance with the methods outlined in the *Field Sampling and Analysis Plan* prepared in April 1997 for this site.

Seven monitoring wells were sampled. They included MW-220, MW-222, MW-224 through MW-226, MW-230, and MW-234. The locations of the seven monitoring wells are shown in Figure 2-1. Details of well construction are provided in Table 2-1.

Prior to sampling, the water level in each well was measured using an electric water-level indicator. The wells were then purged using dedicated inertial foot-valve pumps. Temperature, pH, and specific conductance were measured and the data were recorded in a field notebook. Purging continued until temperature, pH, and specific conductance stabilized; a minimum of three well volumes was extracted; or the well was pumped dry. Each of the wells was then sampled immediately following well purging using the dedicated inertial foot-valve pump.

The groundwater samples were sent by overnight courier to Radian Analytical Services in Austin, Texas, for analysis of volatile organic compounds by EPA Method 8260B.

3.0 RESULTS

3.1 Water Level Measurements

Table 3-1 presents the depth to groundwater and static water-level elevations measured in the seven wells sampled and eight additional wells. Maps showing the generalized direction of groundwater flow in hydrogeologic units A and B are included as Figures 3-1 and 3-2, respectively. Historical water-level elevations in sampled wells are included in Tables 3-2 to 3-8.

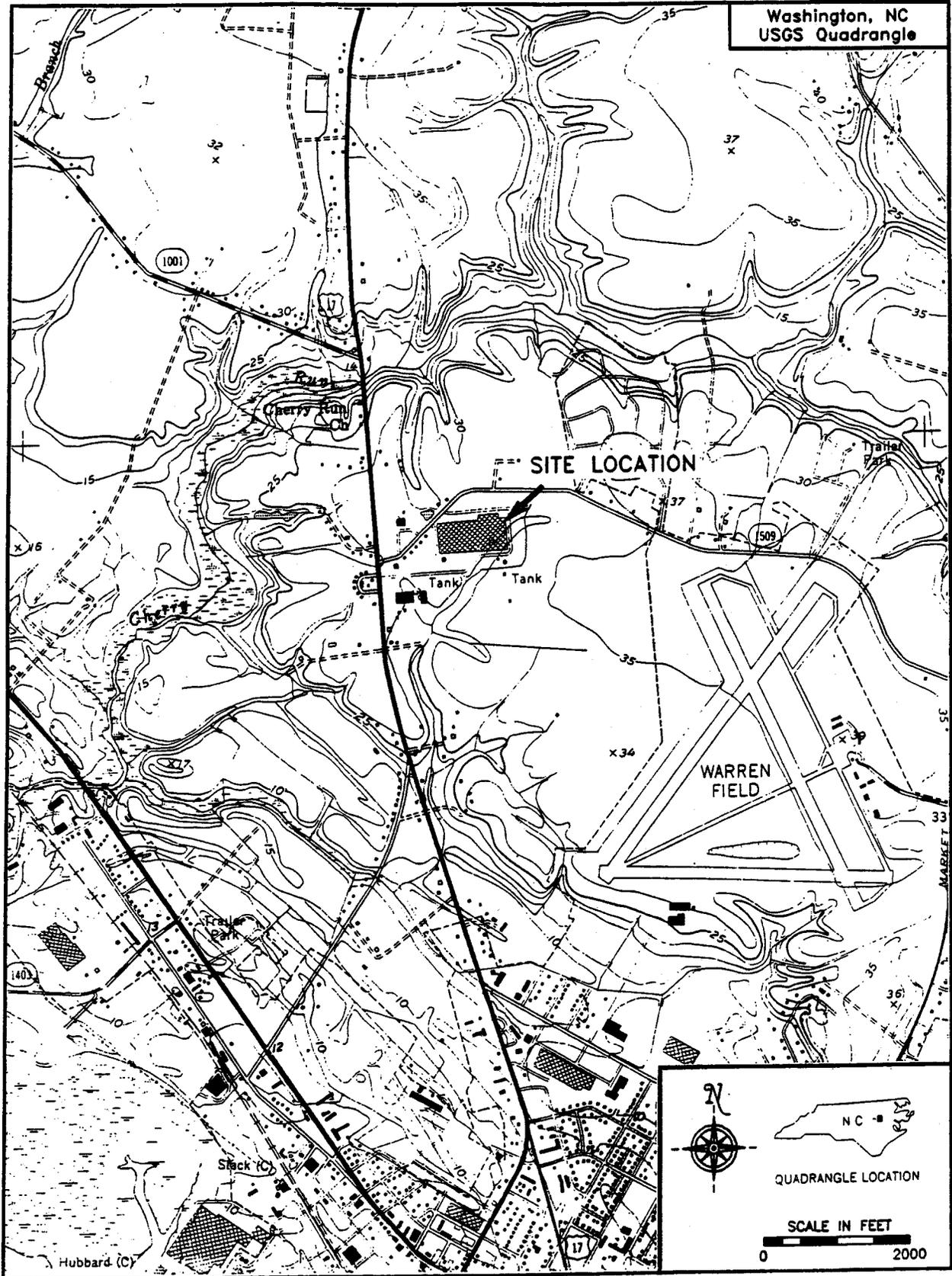
3.2 Analytical Results

Measurements of water temperature, pH, and specific conductance recorded in the field are summarized in Table 3-9.

A summary of qualified analytical results is presented in Table 3-10. No analytes were detected above the groundwater standards in any sample. Qualified data sheets and laboratory reports are included in Appendix A.

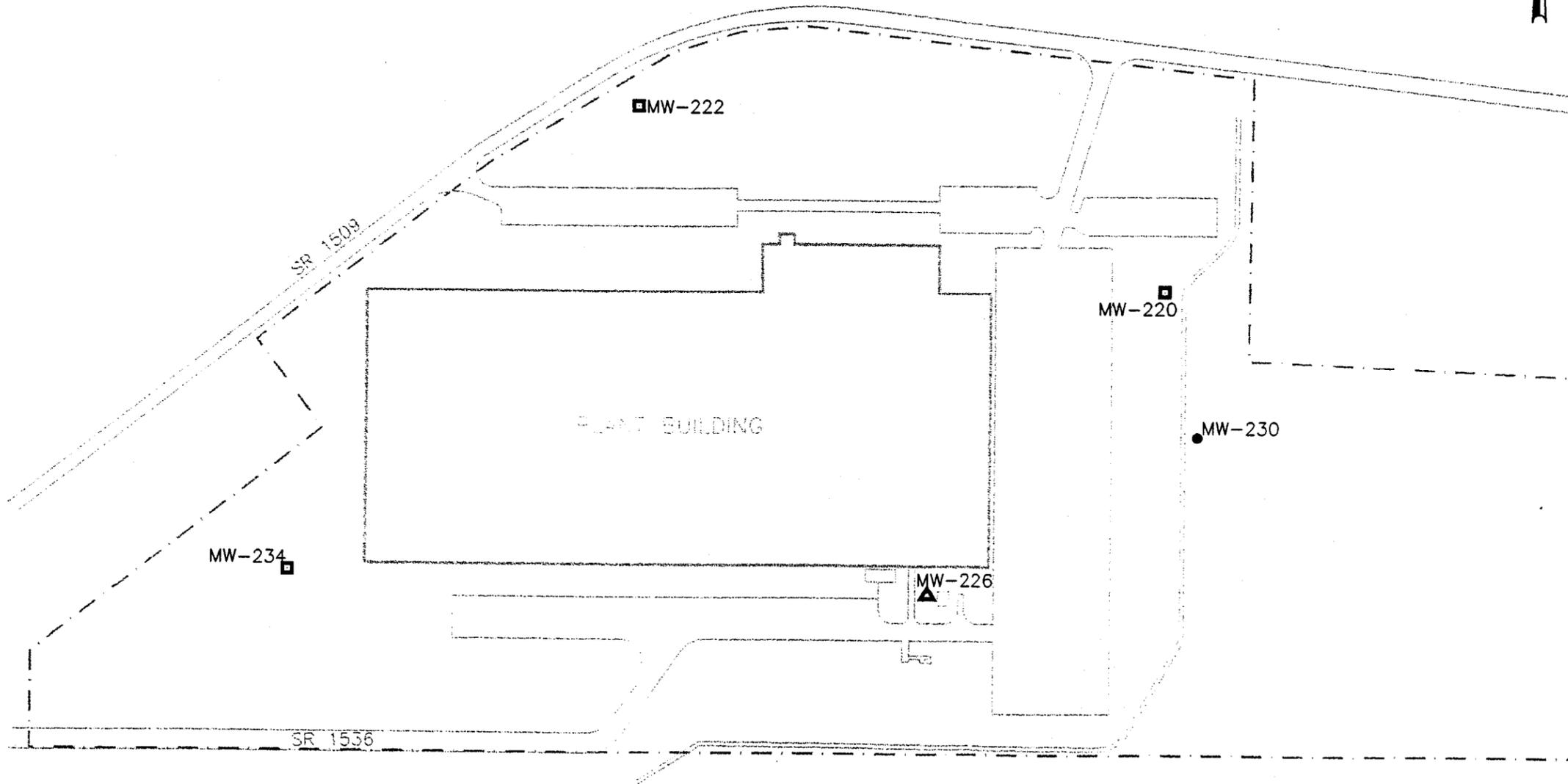
Historical analytical results for the sampled wells are presented in Tables 3-11 to 3-17. A comparison of the latest results with earlier results suggests that the plume remains on-site, at least 200 feet, or approximately ten years time-of-travel, from the potential receptors located north of Spring Road (Figure 3-3). In addition, the results indicate that no vertical migration into the Limestone Aquifer has occurred.

FIGURES



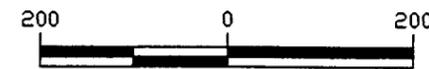
**Figure 1-1. Topographic Map
Hamilton Beach ◊ Proctor-Silex, Inc.**

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LEGEND

- Monitoring Well in Hydrogeologic Unit A
- Monitoring Well in Hydrogeologic Unit B
- ▲ Monitoring Well in the Limestone Aquifer



SCALE	AS SHOWN	DESIGNED BY	DATE	DRAWING TITLE
		TSH	17NOV99	Figure 2-1. Site Map Washington Facility Hamilton Beach & Proctor Silex, Inc
	RADIAN INTERNATIONAL A DAVIS & MOORE GROUP COMPANY	DESIGNED BY	DATE	
		JN	17NOV99	
		APPROVED BY	DATE	
		CONTRACT NO.	DRAWING NO.	REV.
		80396901.01	WASH-SITE	0



Average Groundwater Flow Velocity =

$$\frac{(\text{Hydraulic Conductivity})(\text{Hydraulic Gradient})}{\text{Effective Porosity}} =$$

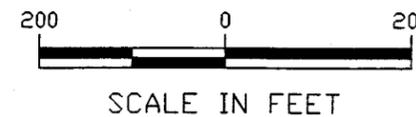
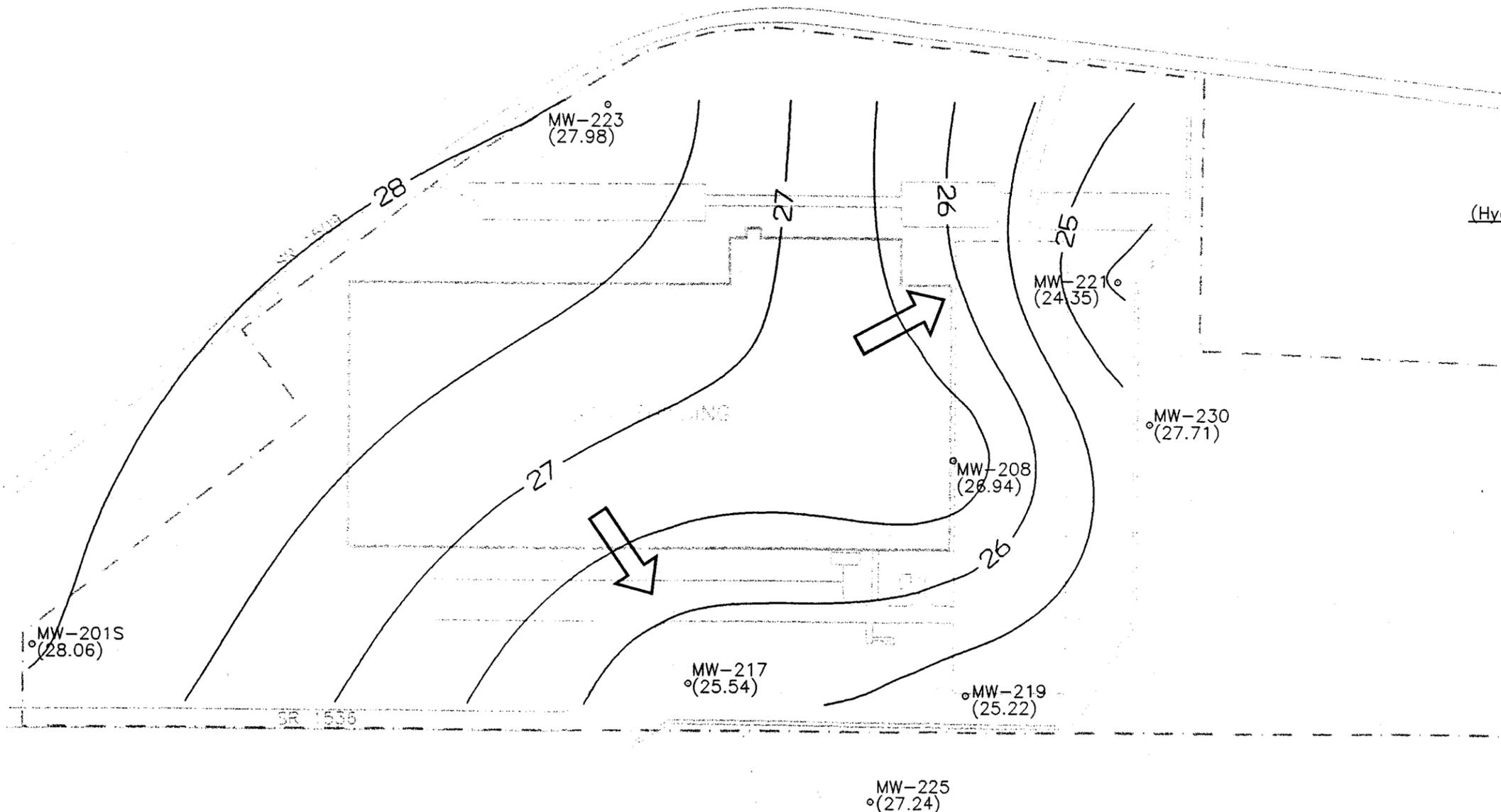
$$\frac{(0.07 \text{ ft/day})(0.006)}{0.12} =$$

$$0.004 \text{ ft/day}$$

LEGEND

- Monitoring Well
- ← Generalized Flow Direction
- 25— Groundwater Elevation Contour

Water level elevations measured on 10/20/99 shown in parentheses.



SCALE	AS SHOWN	DESIGNED BY	TSH	DATE	11NOV99	DRAWING TITLE Figure 3-1. Generalized Groundwater Flow Direction for Hydrogeologic Unit A Washington Facility
		DESIGNED BY	JN	DATE	16NOV99	
		APPROVED BY		DATE		CONTRACT NO. 80396901.01
						DRAWING NO. AFLO-1099
						REV. 0

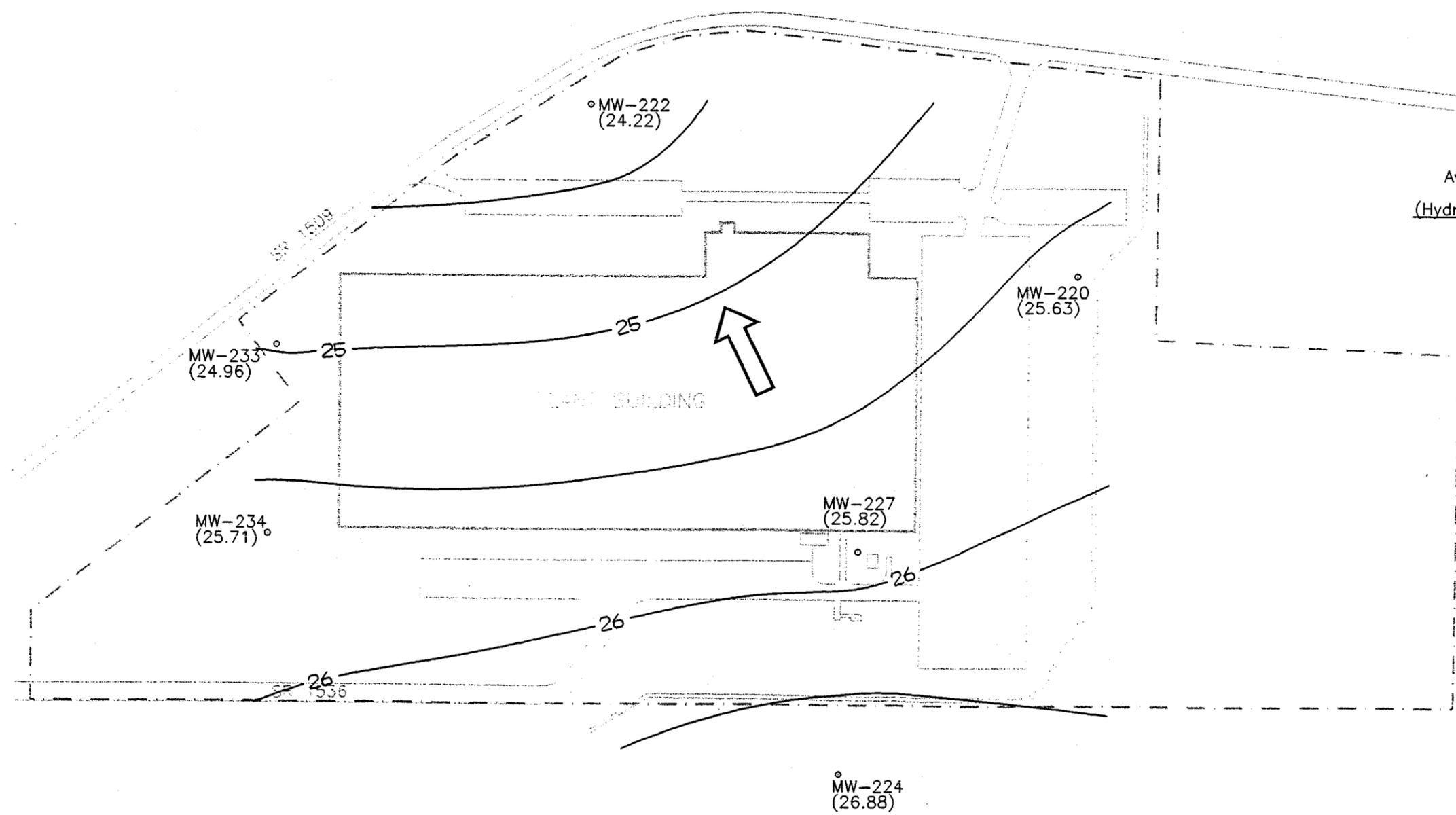


Average Groundwater Flow Velocity =

$$\frac{(\text{Hydraulic Conductivity})(\text{Hydraulic Gradient})}{\text{Effective Porosity}} =$$

$$\frac{(3 \text{ ft/day})(0.002)}{0.20} =$$

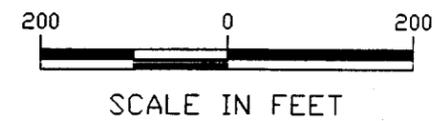
$$0.03 \text{ ft/day}$$



LEGEND

- Monitoring Well
- ← Generalized Flow Direction
- 25 Groundwater Elevation Contour

Water level elevations measured on 10/20/99 shown in parentheses.



SCALE	AS SHOWN	DESIGNED BY	TSH	DATE	11NOV99	DRAWING TITLE Figure 3-2. Generalized Groundwater Flow Direction for Hydrogeologic Unit B Washington Facility
		DRAWN BY	JN	DATE	16NOV99	
RADIANT INTERNATIONAL A CH2M HILL GROUP COMPANY		APPROVED BY		DATE		CONTRACT NO. 80396901.01
						DRAWING NO. BFL0-1099
						REV. 0

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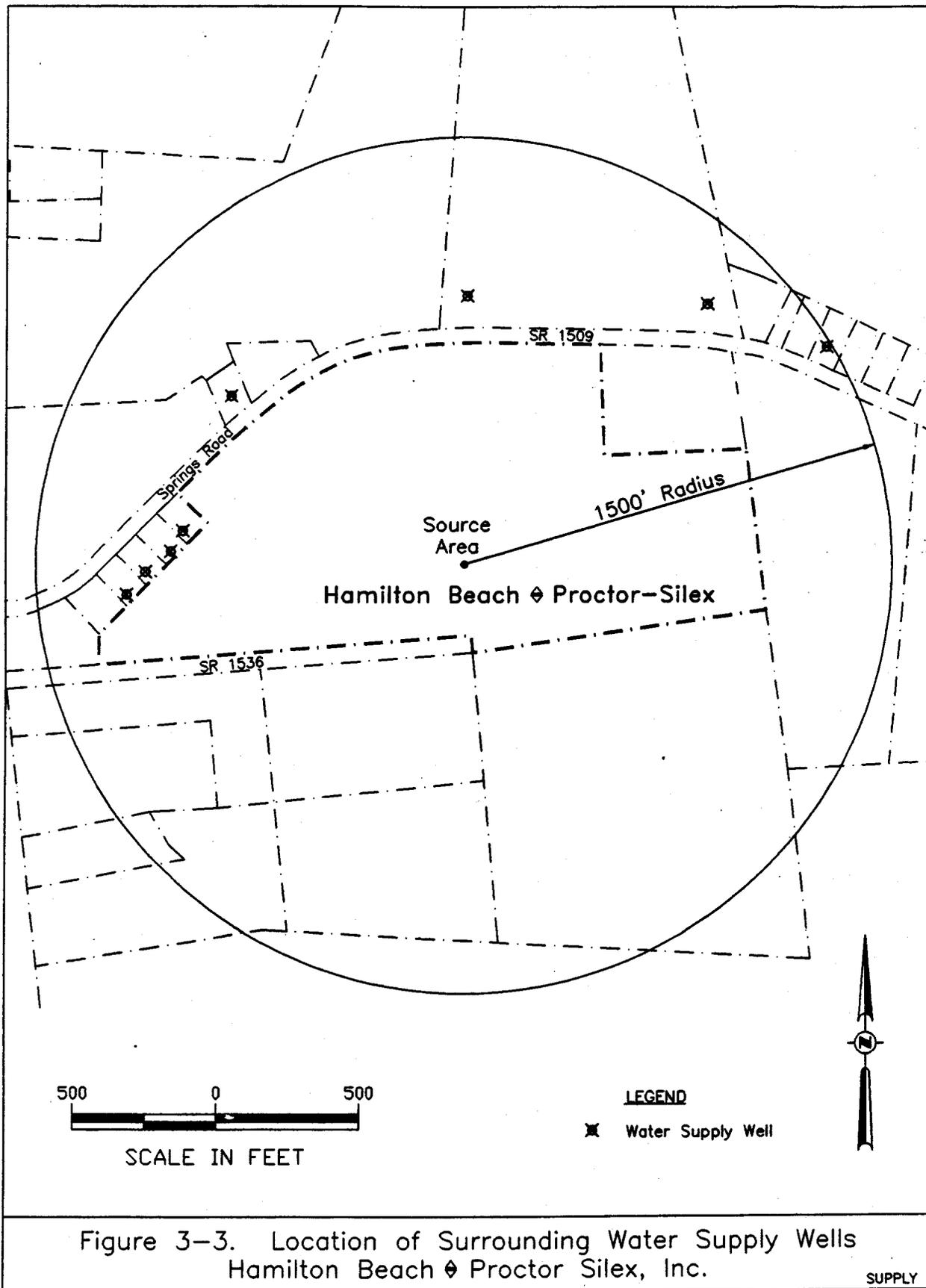


Figure 3-3. Location of Surrounding Water Supply Wells
Hamilton Beach ♦ Proctor Silex, Inc.

TABLES

Table 2-1

**Monitoring Well Construction Data for Sampled Wells
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Well No.	Installation Date	Top of Casing Elevation (ft. above MSL)	Total Depth (ft. bgs)	Screen Interval (ft. bgs)	Filter Pack (ft. bgs)	Bentonite Seal (ft. bgs)	Grout Seal (ft. bgs)
MW-220	5/5/98	31.50	34	25 - 34	24 - 34	23 - 24	0 - 23
MW-222	5/6/98	35.11	40	31 - 40	30 - 40	29 - 30	0 - 29
MW-224	11/13/98	33.43	34	25 - 34	24 - 34	23 - 24	0 - 23
MW-225	11/13/98	33.43	10	4 - 10	3 - 10	2 - 3	0 - 2
MW-226	9/30/98	28.46	75	70 - 75	69 - 75	67 - 69	0 - 67
MW-230	10/26/98	33.47	14	8 - 14	7 - 14	5 - 7	0 - 5
MW-234	6/23/99	35.03	26	17 - 26	16 - 26	13 - 16	0 - 13

Monitoring wells 220 and 222 installed by Radian Mobile Field Services.

Monitoring well 226 installed by Parratt Wolff, Inc.

Monitoring wells 224, 225, 230, and 234 installed by Probe Technology, Inc.

Table 3-1

Water Level Measurements and Elevations
October 20, 1999
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina

Well	Measuring Point Elevation (ft above msl)	Depth to Water (ft)	Water Level Elevation (ft above msl)
MW-201S	29.74	1.68	28.06
MW-208	32.11	5.17	26.94
MW-217	32.75	7.21	25.54
MW-219	31.83	6.61	25.22
MW-220	31.50	5.87	25.63
MW-221	31.39	7.04	24.35
MW-222	35.11	10.89	24.22
MW-223	35.15	7.17	27.98
MW-224	33.43	6.55	26.88
MW-225	33.43	6.19	27.24
MW-226	28.46	17.35	11.11
MW-227	28.47	2.65	25.82
MW-230	33.47	5.76	27.71
MW-233	34.55	9.59	24.96
MW-234	35.03	9.32	25.71

msl = mean sea level

Table 3-2

**Historical Water Level Elevations at MW-220
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Date	Water Level Elevation (ft. above msl)
May 13, 1998	25.13
November 16, 1998	20.55
July 1, 1999	21.50
October 20, 1999	25.63

msl = mean sea level

Table 3-3

**Historical Water Level Elevations at MW-222
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Date	Water Level Elevation (ft. above msl)
May 13, 1998	22.34
November 16, 1998	19.99
July 1, 1999	20.61
October 20, 1999	24.22

msl = mean sea level

Table 3-4

**Historical Water Level Elevations at MW-224
Hamilton Beach ♦ Proctor-Silex, Inc.
Washington, North Carolina**

Date	Water Level Elevation (ft. above msl)
May 13, 1998	NM
November 16, 1998	23.64
July 1, 1999	24.39
October 20, 1999	26.88

msl = mean sea level
NM = Not measured

Table 3-5

**Historical Water Level Elevations at MW-225
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Date	Water Level Elevation (ft. above msl)
May 13, 1998	NM
November 16, 1998	24.36
July 1, 1999	24.50
October 20, 1999	27.24

msl = mean sea level

NM = Not measured

Table 3-6

**Historical Water Level Elevations at MW-226
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Date	Water Level Elevation (ft. above msl)
May 13, 1998	NM
November 16, 1998	8.43
July 1, 1999	8.54
October 20, 1999	11.11

msl = mean sea level
NM = Not measured

Table 3-7

**Historical Water Level Elevations at MW-230
Hamilton Beach ♦ Proctor-Silex, Inc.
Washington, North Carolina**

Date	Water Level Elevation (ft. above msl)
May 13, 1998	NM
November 16, 1998	21.14
July 1, 1999	21.80
October 20, 1999	27.71

msl = mean sea level
NM = Not measured

Table 3-8

**Historical Water Level Elevations at MW-234
Hamilton Beach ♦ Proctor-Silex, Inc.
Washington, North Carolina**

Date	Water Level Elevation (ft. above msl)
May 13, 1998	NM
November 16, 1998	NM
July 1, 1999	23.24
October 20, 1999	25.71

msl = mean sea level
NM = Not measured

Table 3-9

Field Measurements
October 20, 1999
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina

Well	Time	Volume Purged (Gal)	Purging Criteria	Temperature (°C)	Specific Conductance (μS)	pH
MW-225	09:20	0.2	3 well volumes	20.0	220	6.2
MW-224	09:34	0.9	3 well volumes	18.5	335	7.0
MW-226	09:54	9	Stabilized parameters	20.5	447	7.2
	09:59	10		20.5	450	7.5
	10:04	14		20.5	430	7.4
	10:09	17		20.5	450	7.4
	10:14	20		20.5	450	7.4
MW-234	10:35	0.5	3 well volumes	19.0	140	7.2
MW-222	11:01	0.9	3 well volumes	19.0	330	7.5
MW-230	11:20	0.3	3 well volumes	20.0	300	6.8
MW-220	11:42	0.9	3 well volumes	19.0	100	7.0

Table 3-10

Qualified Analytical Results
Volatile Organic Compounds by Method 8260B
October 1999
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina

Analyte	Groundwater Standard	Monitoring Well Network						
		MW-220	MW-222	MW-224	MW-225	MW-226	MW-230	W-234
Carbon disulfide	700	0.162	0.0944	2.72	0.0691	0.0950	ND (0.0493)	0.0600
Chloroform	0.19	ND (0.0600)	ND (0.0600)	ND (0.0600)	0.171	ND (0.0600)	ND (0.0600)	ND (0.0600)
1,1-Dichloroethane	700	ND (0.0588)	ND (0.0588)	ND (0.0588)	ND (0.0588)	ND (0.0588)	0.265	ND (0.0588)
1,1-Dichloroethene	7	ND (0.0819)	ND (0.0819)	ND (0.0819)	ND (0.0819)	ND (0.0819)	0.133	ND (0.0819)
Cis-1,2-Dichloroethene	70	ND (0.0407)	ND (0.0407)	ND (0.0407)	ND (0.0407)	ND (0.0407)	0.304	ND (0.0407)
Trichloroethene	2.8	ND (0.0499)	ND (0.0499)	ND (0.0499)	ND (0.0499)	ND (0.0499)	0.921	ND (0.0499)

Target analytes not listed were not detected.

All results reported in micrograms per liter.

ND = Not detected at (detection limit).

J = Estimated value.

Table 3-11

**Historical Analytical Results for MW-220
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Analyte	Groundwater Standard	May 1998	November 1998	July 1999	October 1999
Carbon disulfide	700	ND (0.0547)	ND (0.0547)	0.426 J	0.162

Target analytes not listed were not detected.

All samples reported in micrograms per liter.

J = Estimated value.

ND = Not detected at (detection limit).

NS = Not sampled.

U = Not present above the associated level; blank contamination is present.

Table 3-12

**Historical Analytical Results for MW-222
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Analyte	Groundwater Standard	May 1998	November 1998	July 1999	October 1999
Carbon disulfide	700	ND (0.0547)	ND (0.0547)	0.388 J	0.0944
1,1-Dichloroethene	7	0.0908 J	ND (0.0715)	ND (0.102)	ND (0.0819)
Toluene	1,000	0.156 J	ND 90.0522)	ND (0.0766)	ND (0.0645)

Target analytes not listed were not detected.

All samples reported in micrograms per liter.

J = Estimated value.

ND = Not detected at (detection limit).

NS = Not sampled.

U = Not present above the associated level; blank contamination is present.

Table 3-13

**Historical Analytical Results for MW-224
Hamilton Beach ♦ Proctor-Silex, Inc.
Washington, North Carolina**

Analyte	Groundwater Standard	May 1998	November 1998	July 1999	October 1999
Carbon disulfide	700	NS	ND (0.0547)	2.22	2.72

Target analytes not listed were not detected.

All samples reported in micrograms per liter.

J = Estimated value.

ND = Not detected at (detection limit).

NS = Not sampled.

U = Not present above the associated level; blank contamination is present.

Table 3-14

**Historical Analytical Results for MW-225
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Analyte	Groundwater Standard	May 1998	November 1998	July 1999	October 1999
Carbon disulfide	700	NS	ND (0.0547)	ND (0.864)	0.0691
Chloroform	0.19	NS	ND (0.0480)	ND (0.0424)	0.171

Target analytes not listed were not detected.

All samples reported in micrograms per liter.

J = Estimated value.

ND = Not detected at (detection limit).

NS = Not sampled.

U = Not present above the associated level; blank contamination is present.

Table 3-15

**Historical Analytical Results for MW-226
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Analyte	Groundwater Standard	May 1998	November 1998	July 1999	October 1999
Carbon disulfide	700	NS	ND (0.0547)	ND (0.864)	0.0950

Target analytes not listed were not detected.

All samples reported in micrograms per liter.

J = Estimated value.

ND = Not detected at (detection limit).

NS = Not sampled.

U = Not present above the associated level; blank contamination is present.

Table 3-16

**Historical Analytical Results for MW-230
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Analyte	Groundwater Standard	May 1998	November 1998	July 1999	October 1999
1,1-Dichloroethane	700	NS	ND (0.0576)	ND (0.0736)	0.265
1,1-Dichloroethene	7	NS	ND (0.306) U	ND (0.102)	0.133
Cis-1,2-Dichloroethene	70	NS	ND (2.67) U	ND (0.0595)	0.304
Toluene	1,000	NS	ND (0.0522)	0.286	ND (0.309) U
Trichloroethene	2.8	NS	ND (2.05) U	ND (0.0929)	0.921

Target analytes not listed were not detected.

All samples reported in micrograms per liter.

J = Estimated value.

ND = Not detected at (detection limit).

NS = Not sampled.

U = Not present above the associated level; blank contamination is present.

Table 3-17

**Historical Analytical Results for MW-234
Hamilton Beach◇Proctor-Silex, Inc.
Washington, North Carolina**

Analyte	Groundwater Standard	May 1998	November 1998	July 1999	October 1999
Carbon disulfide	700	NS	NS	ND (0.864)	0.0600

Target analytes not listed were not detected.

All samples reported in micrograms per liter.

J = Estimated value.

ND = Not detected at (detection limit).

NS = Not sampled.

U = Not present above the associated level; blank contamination is present.

APPENDIX A

GROUNDWATER SAMPLING ANALYTICAL REPORTS

Introduction

Radian International collected seven groundwater samples (1099HBWW-220, -222, -224-226, -230, and -234) at the Hamilton Beach-Proctor Silex facility in Washington, NC. The samples were submitted to Radian's Analytical Services (RAS) laboratory in Austin, Texas for the determination of volatile organic compounds (VOC) by SW-846 Method 8260B. A trip blank was included in the shipment of samples to the laboratory for the analysis of VOC.

Radian reviewed the analytical results, which were reported by the laboratory under work order number 9910408. The data evaluation was modeled after the *National Functional Guidelines for Organic Data Review* (EPA, February 1994). Accuracy was determined from the review of holding times, spike recoveries, initial and continuing calibration, and blank contamination. Precision was based on the evaluation of laboratory duplicate results. Sample results, presented in the Results Summary, have been appropriately qualified based on criteria of the review process. The results of the data evaluation are summarized below.

Sample Condition upon Receipt and Holding Times

All samples were received intact and in good condition by RAS laboratory on October 21, 1999. The temperature of the sample containers was within laboratory specification limits of 2-6°C upon receipt. A small air bubble (4 millimeters in diameter) was observed in one of the volatile organic analysis (VOA) vials that were received by the laboratory for the trip blank. Qualification of the trip blank results is not required since vials were available for the VOA that did not contain air bubbles greater than 6 millimeters in size.

Technical hold times were assessed by comparing the sampling dates with that of the analysis date. Samples were analyzed within EPA-established holding times of seven days for unpreserved samples.

Calibration

Control limits for initial and continuing instrument calibrations are established to ensure that the instrument is capable of producing accurate quantitative and qualitative data at the beginning and throughout each of the analyses.

Laboratory specifications were met during volatile organic initial and continuing calibrations. Except for a few analytes, project¹ specifications were also met during the calibration of the instrument. During the initial calibration of October 18 on instrument MSDC, the response factor for acrolein (0.0282) and acetonitrile (0.0234) was less than 0.05. Non-detect sample results for these two VOC were qualified as unusable (R) because of poor instrument sensitivity.

Blank Contamination

Laboratory blanks are clean liquid and/or solid matrix samples prepared by the analytical laboratory and analyzed in the same manner as the field samples. Laboratory blanks are used to ensure that the field samples are not contaminated during the sample preparation, sample analysis, or from previous sample (instrument carry-over). Trip blanks are analyte-free water samples that accompany volatile investigative samples during all stages of shipment, storage, and analysis. The trip blanks are used to assess the potential for artificial introduction of volatile compounds into the investigative samples during the transportation and sample handling processes.

Methylene chloride, a common blank contaminant, was detected at a concentration of 0.0297 J ppb and 0.120 parts per billion (ppb) in the laboratory and trip blanks, respectively. The trip blank also contained

¹ Response factor is greater than or equal to 0.05 and the percent relative standard deviation is less than or equal to 30 for all target analytes during the initial calibration. The recovery of the continuing calibration verification standard is within 80-120% of the true value during the continuing calibration.

toluene at a concentration of 0.0974 ppb. The result for methylene chloride in sample 1099HBWW230 is not significantly greater than that detected in the blanks; therefore, it has been flagged "ND" and the detection limit elevated to the amount present in the sample and flagged with a "U". Further qualification of data due to blank contamination is not required since methylene chloride and toluene were not detected in any other samples.

Surrogate Spikes and Internal Standards

System monitoring compounds (surrogates) are those compounds that are not expected to be detected in the field samples, but which are chemically similar to the analytes of interest. Surrogate compound percent recoveries are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy. Internal standards are analytes of interest that are added to each sample prior to analysis to ensure that GC/MS sensitivity and responses remain stable.

Surrogate and internal standard results met laboratory specification limits for all samples.

Laboratory Control Samples

Laboratory control samples (LCS) are blank samples fortified (spiked) with known concentrations of analyte of interest. The percent recoveries and/or duplicate results of the LCS and their duplicates are used to assess extraction efficiencies and overall analytical accuracy and precision.

Laboratory and project² specifications were met during the LCS VOA.

Matrix Spikes

Matrix spikes are samples spiked with known concentrations of analytes of interest. MS percent recoveries and duplicate results are used to assess extraction efficiencies, possible matrix effects, and overall analytical accuracy and precision.

Accuracy and precision criteria were met during the matrix spike (MS) and MS duplicate analysis of the batch sample for VOC.

² The recovery of either the LCS or LCSD must be within 60-140%.

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW220		1099HBWW222		1099HBWW224		1099HBWW225	
Lab ID:	9910408-07A		9910408-05A		9910408-01A		9910408-02A	
File ID:	C1021914		C1021912		C1021908		C1021909	
Date Collected:	10/20/99 11:45		10/20/99 11:05		10/20/99 09:40		10/20/99 09:25	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 22:38:00		10/21/99 21:41:00		10/21/99 19:48:00		10/21/99 20:16:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	ND	1.04	ND	1.04	ND	1.04	ND	1.04
Acetonitrile	ND	3.79	ND	3.79	ND	3.79	ND	3.79
Acrolein	ND	3.71	ND	3.71	ND	3.71	ND	3.71
Acrylonitrile	ND	0.305	ND	0.305	ND	0.305	ND	0.305
Benzene	ND	0.0469	ND	0.0469	ND	0.0469	ND	0.0469
1-Bromo-2-chloroethane	ND	0.0507	ND	0.0507	ND	0.0507	ND	0.0507
Bromobenzene	ND	0.0566	ND	0.0566	ND	0.0566	ND	0.0566
Bromochloromethane	ND	0.0990	ND	0.0990	ND	0.0990	ND	0.0990
Bromodichloromethane	ND	0.0619	ND	0.0619	ND	0.0619	ND	0.0619
Bromoform	ND	0.0756	ND	0.0756	ND	0.0756	ND	0.0756
Bromomethane	ND	0.0962	ND	0.0962	ND	0.0962	ND	0.0962
2-Butanone (MEK)	ND	0.179	ND	0.179	ND	0.179	ND	0.179
n-Butylbenzene	ND	0.0655	ND	0.0655	ND	0.0655	ND	0.0655
sec-Butylbenzene	ND	0.0744	ND	0.0744	ND	0.0744	ND	0.0744
tert-Butylbenzene	ND	0.0619	ND	0.0619	ND	0.0619	ND	0.0619
Carbon disulfide	0.162	0.0493	0.0944	0.0493	2.72	0.0493	0.0691	0.0493
Carbon tetrachloride	ND	0.0778	ND	0.0778	ND	0.0778	ND	0.0778
2-Chloro-1,3-butadiene	ND	0.0836	ND	0.0836	ND	0.0836	ND	0.0836
Chlorobenzene	ND	0.0527	ND	0.0527	ND	0.0527	ND	0.0527
Chloroethane	ND	0.0819	ND	0.0819	ND	0.0819	ND	0.0819

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW220		1099HBWW222		1099HBWW224		1099HBWW225	
Lab ID:	9910408-07A		9910408-05A		9910408-01A		9910408-02A	
File ID:	C1021914		C1021912		C1021908		C1021909	
Date Collected:	10/20/99 11:45		10/20/99 11:05		10/20/99 09:40		10/20/99 09:25	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 22:38:00		10/21/99 21:41:00		10/21/99 19:48:00		10/21/99 20:16:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Chloroform	ND	0.0600	ND	0.0600	ND	0.0600	0.171	0.0600
1-Chlorohexane	ND	0.0586	ND	0.0586	ND	0.0586	ND	0.0586
Chloromethane	ND	0.109	ND	0.109	ND	0.109	ND	0.109
3-Chloropropene	ND	0.0693	ND	0.0693	ND	0.0693	ND	0.0693
2-Chlorotoluene	ND	0.0581	ND	0.0581	ND	0.0581	ND	0.0581
4-Chlorotoluene	ND	0.0733	ND	0.0733	ND	0.0733	ND	0.0733
1,2-Dibromo-3-chloropropane	ND	0.266	ND	0.266	ND	0.266	ND	0.266
Dibromochloromethane	ND	0.0665	ND	0.0665	ND	0.0665	ND	0.0665
1,2-Dibromoethane	ND	0.0782	ND	0.0782	ND	0.0782	ND	0.0782
Dibromomethane	ND	0.0300	ND	0.0300	ND	0.0300	ND	0.0300
trans-1,4-Dichloro-2-butene	ND	0.264	ND	0.264	ND	0.264	ND	0.264
1,2-Dichlorobenzene	ND	0.0454	ND	0.0454	ND	0.0454	ND	0.0454
1,3-Dichlorobenzene	ND	0.0556	ND	0.0556	ND	0.0556	ND	0.0556
1,4-Dichlorobenzene	ND	0.0651	ND	0.0651	ND	0.0651	ND	0.0651
Dichlorodifluoromethane	ND	0.270	ND	0.270	ND	0.270	ND	0.270
1,1-Dichloroethane	ND	0.0588	ND	0.0588	ND	0.0588	ND	0.0588
1,2-Dichloroethane	ND	0.0408	ND	0.0408	ND	0.0408	ND	0.0408
1,1-Dichloroethene	ND	0.0819	ND	0.0819	ND	0.0819	ND	0.0819
cis-1,2-Dichloroethene	ND	0.0407	ND	0.0407	ND	0.0407	ND	0.0407
trans-1,2-Dichloroethene	ND	0.0422	ND	0.0422	ND	0.0422	ND	0.0422

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW220		1099HBWW222		1099HBWW224		1099HBWW225	
Lab ID:	9910408-07A		9910408-05A		9910408-01A		9910408-02A	
File ID:	C1021914		C1021912		C1021908		C1021909	
Date Collected:	10/20/99 11:45		10/20/99 11:05		10/20/99 09:40		10/20/99 09:25	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 22:38:00		10/21/99 21:41:00		10/21/99 19:48:00		10/21/99 20:16:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloropropane	ND	0.0527	ND	0.0527	ND	0.0527	ND	0.0527
1,3-Dichloropropane	ND	0.0591	ND	0.0591	ND	0.0591	ND	0.0591
2,2-Dichloropropane	ND	0.0903	ND	0.0903	ND	0.0903	ND	0.0903
1,1-Dichloropropene	ND	0.0712	ND	0.0712	ND	0.0712	ND	0.0712
cis-1,3-Dichloropropene	ND	0.0375	ND	0.0375	ND	0.0375	ND	0.0375
trans-1,3-Dichloropropene	ND	0.0430	ND	0.0430	ND	0.0430	ND	0.0430
Ethyl methacrylate	ND	0.0412	ND	0.0412	ND	0.0412	ND	0.0412
Ethylbenzene	ND	0.0563	ND	0.0563	ND	0.0563	ND	0.0563
Hexachlorobutadiene	ND	0.0763	ND	0.0763	ND	0.0763	ND	0.0763
2-Hexanone	ND	0.144	ND	0.144	ND	0.144	ND	0.144
Iodomethane	ND	0.0436	ND	0.0436	ND	0.0436	ND	0.0436
Isopropylbenzene	ND	0.0815	ND	0.0815	ND	0.0815	ND	0.0815
p-Isopropyltoluene	ND	0.0662	ND	0.0662	ND	0.0662	ND	0.0662
Methyl methacrylate	ND	0.0916	ND	0.0916	ND	0.0916	ND	0.0916
Methyl t-butyl ether	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
4-Methyl-2-pentanone (MIBK)	ND	0.0775	ND	0.0775	ND	0.0775	ND	0.0775
Methylene chloride	ND	0.0607	ND	0.0607	ND	0.0607	ND	0.0607
Naphthalene	ND	0.0576	ND	0.0576	ND	0.0576	ND	0.0576
Propanenitrile	ND	0.408	ND	0.408	ND	0.408	ND	0.408
n-Propylbenzene	ND	0.0558	ND	0.0558	ND	0.0558	ND	0.0558

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW220		1099HBWW222		1099HBWW224		1099HBWW225	
Lab ID:	9910408-07A		9910408-05A		9910408-01A		9910408-02A	
File ID:	C1021914		C1021912		C1021908		C1021909	
Date Collected:	10/20/99 11:45		10/20/99 11:05		10/20/99 09:40		10/20/99 09:25	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 22:38:00		10/21/99 21:41:00		10/21/99 19:48:00		10/21/99 20:16:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Styrene	ND	0.0500	ND	0.0500	ND	0.0500	ND	0.0500
1,1,1,2-Tetrachloroethane	ND	0.0728	ND	0.0728	ND	0.0728	ND	0.0728
1,1,2,2-Tetrachloroethane	ND	0.0785	ND	0.0785	ND	0.0785	ND	0.0785
Tetrachloroethene	ND	0.0591	ND	0.0591	ND	0.0591	ND	0.0591
Tetrahydrofuran	ND	0.527	ND	0.527	ND	0.527	ND	0.527
Toluene	ND	0.0645	ND	0.0645	ND	0.0645	ND	0.0645
1,2,3-Trichlorobenzene	ND	0.0682	ND	0.0682	ND	0.0682	ND	0.0682
1,2,4-Trichlorobenzene	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
1,1,1-Trichloroethane	ND	0.0631	ND	0.0631	ND	0.0631	ND	0.0631
1,1,2-Trichloroethane	ND	0.0576	ND	0.0576	ND	0.0576	ND	0.0576
Trichloroethene	ND	0.0499	ND	0.0499	ND	0.0499	ND	0.0499
Trichlorofluoromethane	ND	0.0632	ND	0.0632	ND	0.0632	ND	0.0632
1,2,3-Trichloropropane	ND	0.0795	ND	0.0795	ND	0.0795	ND	0.0795
1,1,2-Trichlorotrifluoroethane	ND	0.0599	ND	0.0599	ND	0.0599	ND	0.0599
1,2,4-Trimethylbenzene	ND	0.0590	ND	0.0590	ND	0.0590	ND	0.0590
1,3,5-Trimethylbenzene	ND	0.0668	ND	0.0668	ND	0.0668	ND	0.0668
Vinyl acetate	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
Vinyl chloride	ND	0.0957	ND	0.0957	ND	0.0957	ND	0.0957
m&p-Xylene	ND	0.112	ND	0.112	ND	0.112	ND	0.112
o-Xylene	ND	0.0732	ND	0.0732	ND	0.0732	ND	0.0732

RESULTS SUMMARY (Cont'd)

Method Volatile Organics SW8260B

Test Code 826SWACM

Project Sample ID:	1099HBWW220	1099HBWW222	1099HBWW224	1099HBWW225
Lab ID:	9910408-07A	9910408-05A	9910408-01A	9910408-02A
File ID:	C1021914	C1021912	C1021908	C1021909
Date Collected:	10/20/99 11:45	10/20/99 11:05	10/20/99 09:40	10/20/99 09:25
Date Prepared:	00:00:00	00:00:00	00:00:00	00:00:00
Date Analyzed:	10/21/99 22:38:00	10/21/99 21:41:00	10/21/99 19:48:00	10/21/99 20:16:00
Dilution Factor:	1	1	1	1
Matrix:	Water	Water	Water	Water
Units:	ug/L	ug/L	ug/L	ug/L
Report as:	received	received	received	received
Column:				
Analyte	Conc. DL	Conc. DL	Conc. DL	Conc. DL

Surrogate (s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	97	98	99	99
1,2-Dichloroethane-d4	107	104	100	99
Toluene-d8	102	102	102	102

Sample results have been qualified by Radian International based on the results of the data review process, which is modeled after the National Functional Guidelines for Organic and Inorganic Data Review (US EPA, February 1994).

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW226		1099HBWW230		1099HBWW234		TRIP BLANK	
Lab ID:	9910408-03A		9910408-06A		9910408-04A		9910408-08A	
File ID:	C1021910		C1021913		C1021911		C1021907	
Date Collected:	10/20/99 10:20		10/20/99 11:25		10/20/99 10:40		10/20/99	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 20:44:00		10/21/99 22:09:00		10/21/99 21:13:00		10/21/99 19:19:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	ND	1.04	ND	1.04	ND	1.04	ND	1.04
Acetonitrile	ND	3.79	ND	3.79	ND	3.79	ND	3.79
Acrolein	ND	3.71	ND	3.71	ND	3.71	ND	3.71
Acrylonitrile	ND	0.305	ND	0.305	ND	0.305	ND	0.305
Benzene	ND	0.0469	ND	0.0469	ND	0.0469	ND	0.0469
1-Bromo-2-chloroethane	ND	0.0507	ND	0.0507	ND	0.0507	ND	0.0507
Bromobenzene	ND	0.0566	ND	0.0566	ND	0.0566	ND	0.0566
Bromochloromethane	ND	0.0990	ND	0.0990	ND	0.0990	ND	0.0990
Bromodichloromethane	ND	0.0619	ND	0.0619	ND	0.0619	ND	0.0619
Bromoform	ND	0.0756	ND	0.0756	ND	0.0756	ND	0.0756
Bromomethane	ND	0.0962	ND	0.0962	ND	0.0962	ND	0.0962
2-Butanone (MEK)	ND	0.179	ND	0.179	ND	0.179	ND	0.179
n-Butylbenzene	ND	0.0655	ND	0.0655	ND	0.0655	ND	0.0655
sec-Butylbenzene	ND	0.0744	ND	0.0744	ND	0.0744	ND	0.0744
tert-Butylbenzene	ND	0.0619	ND	0.0619	ND	0.0619	ND	0.0619
Carbon disulfide	0.0950	0.0493	ND	0.0493	0.0600	0.0493	ND	0.0493
Carbon tetrachloride	ND	0.0778	ND	0.0778	ND	0.0778	ND	0.0778
2-Chloro-1,3-butadiene	ND	0.0836	ND	0.0836	ND	0.0836	ND	0.0836
Chlorobenzene	ND	0.0527	ND	0.0527	ND	0.0527	ND	0.0527
Chloroethane	ND	0.0819	ND	0.0819	ND	0.0819	ND	0.0819

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW226		1099HBWW230		1099HBWW234		TRIP BLANK	
Lab ID:	9910408-03A		9910408-06A		9910408-04A		9910408-08A	
File ID:	C1021910		C1021913		C1021911		C1021907	
Date Collected:	10/20/99 10:20		10/20/99 11:25		10/20/99 10:40		10/20/99	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 20:44:00		10/21/99 22:09:00		10/21/99 21:13:00		10/21/99 19:19:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Chloroform	ND	0.0600	ND	0.0600	ND	0.0600	ND	0.0600
1-Chlorohexane	ND	0.0586	ND	0.0586	ND	0.0586	ND	0.0586
Chloromethane	ND	0.109	ND	0.109	ND	0.109	ND	0.109
3-Chloropropene	ND	0.0693	ND	0.0693	ND	0.0693	ND	0.0693
2-Chlorotoluene	ND	0.0581	ND	0.0581	ND	0.0581	ND	0.0581
4-Chlorotoluene	ND	0.0733	ND	0.0733	ND	0.0733	ND	0.0733
1,2-Dibromo-3-chloropropane	ND	0.266	ND	0.266	ND	0.266	ND	0.266
Dibromochloromethane	ND	0.0665	ND	0.0665	ND	0.0665	ND	0.0665
1,2-Dibromoethane	ND	0.0782	ND	0.0782	ND	0.0782	ND	0.0782
Dibromomethane	ND	0.0300	ND	0.0300	ND	0.0300	ND	0.0300
trans-1,4-Dichloro-2-butene	ND	0.264	ND	0.264	ND	0.264	ND	0.264
1,2-Dichlorobenzene	ND	0.0454	ND	0.0454	ND	0.0454	ND	0.0454
1,3-Dichlorobenzene	ND	0.0556	ND	0.0556	ND	0.0556	ND	0.0556
1,4-Dichlorobenzene	ND	0.0651	ND	0.0651	ND	0.0651	ND	0.0651
Dichlorodifluoromethane	ND	0.270	ND	0.270	ND	0.270	ND	0.270
1,1-Dichloroethane	ND	0.0588	0.265	0.0588	ND	0.0588	ND	0.0588
1,2-Dichloroethane	ND	0.0408	ND	0.0408	ND	0.0408	ND	0.0408
1,1-Dichloroethene	ND	0.0819	0.133	0.0819	ND	0.0819	ND	0.0819
cis-1,2-Dichloroethene	ND	0.0407	0.304	0.0407	ND	0.0407	ND	0.0407
trans-1,2-Dichloroethene	ND	0.0422	ND	0.0422	ND	0.0422	ND	0.0422

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW226		1099HBWW230		1099HBWW234		TRIP BLANK	
Lab ID:	9910408-03A		9910408-06A		9910408-04A		9910408-08A	
File ID:	C1021910		C1021913		C1021911		C1021907	
Date Collected:	10/20/99 10:20		10/20/99 11:25		10/20/99 10:40		10/20/99	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 20:44:00		10/21/99 22:09:00		10/21/99 21:13:00		10/21/99 19:19:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloropropane	ND	0.0527	ND	0.0527	ND	0.0527	ND	0.0527
1,3-Dichloropropane	ND	0.0591	ND	0.0591	ND	0.0591	ND	0.0591
2,2-Dichloropropane	ND	0.0903	ND	0.0903	ND	0.0903	ND	0.0903
1,1-Dichloropropene	ND	0.0712	ND	0.0712	ND	0.0712	ND	0.0712
cis-1,3-Dichloropropene	ND	0.0375	ND	0.0375	ND	0.0375	ND	0.0375
trans-1,3-Dichloropropene	ND	0.0430	ND	0.0430	ND	0.0430	ND	0.0430
Ethyl methacrylate	ND	0.0412	ND	0.0412	ND	0.0412	ND	0.0412
Ethylbenzene	ND	0.0563	ND	0.0563	ND	0.0563	ND	0.0563
Hexachlorobutadiene	ND	0.0763	ND	0.0763	ND	0.0763	ND	0.0763
2-Hexanone	ND	0.144	ND	0.144	ND	0.144	ND	0.144
Iodomethane	ND	0.0436	ND	0.0436	ND	0.0436	ND	0.0436
Isopropylbenzene	ND	0.0815	ND	0.0815	ND	0.0815	ND	0.0815
p-Isopropyltoluene	ND	0.0662	ND	0.0662	ND	0.0662	ND	0.0662
Methyl methacrylate	ND	0.0916	ND	0.0916	ND	0.0916	ND	0.0916
Methyl t-butyl ether	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
4-Methyl-2-pentanone (MIBK)	ND	0.0775	ND	0.0775	ND	0.0775	ND	0.0775
Methylene chloride	ND	0.0607	ND	0.0607	ND	0.0607	0.120	0.0607
Naphthalene	ND	0.0576	ND	0.0576	ND	0.0576	ND	0.0576
Propanenitrile	ND	0.408	ND	0.408	ND	0.408	ND	0.408
n-Propylbenzene	ND	0.0558	ND	0.0558	ND	0.0558	ND	0.0558

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW226		1099HBWW230		1099HBWW234		TRIP BLANK	
Lab ID:	9910408-03A		9910408-06A		9910408-04A		9910408-08A	
File ID:	C1021910		C1021913		C1021911		C1021907	
Date Collected:	10/20/99 10:20		10/20/99 11:25		10/20/99 10:40		10/20/99	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 20:44:00		10/21/99 22:09:00		10/21/99 21:13:00		10/21/99 19:19:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Styrene	ND	0.0500	ND	0.0500	ND	0.0500	ND	0.0500
1,1,1,2-Tetrachloroethane	ND	0.0728	ND	0.0728	ND	0.0728	ND	0.0728
1,1,2,2-Tetrachloroethane	ND	0.0785	ND	0.0785	ND	0.0785	ND	0.0785
Tetrachloroethene	ND	0.0591	ND	0.0591	ND	0.0591	ND	0.0591
Tetrahydrofuran	ND	0.527	ND	0.527	ND	0.527	ND	0.527
Toluene	ND	0.0645	ND, 0.309 0.309u	0.0645	ND	0.0645	0.0974	0.0645
1,2,3-Trichlorobenzene	ND	0.0682	ND	0.0682	ND	0.0682	ND	0.0682
1,2,4-Trichlorobenzene	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
1,1,1-Trichloroethane	ND	0.0631	ND	0.0631	ND	0.0631	ND	0.0631
1,1,2-Trichloroethane	ND	0.0576	ND	0.0576	ND	0.0576	ND	0.0576
Trichloroethene	ND	0.0499	0.921	0.0499	ND	0.0499	ND	0.0499
Trichlorofluoromethane	ND	0.0632	ND	0.0632	ND	0.0632	ND	0.0632
1,2,3-Trichloropropane	ND	0.0795	ND	0.0795	ND	0.0795	ND	0.0795
1,1,2-Trichlorotrifluoroethane	ND	0.0599	ND	0.0599	ND	0.0599	ND	0.0599
1,2,4-Trimethylbenzene	ND	0.0590	ND	0.0590	ND	0.0590	ND	0.0590
1,3,5-Trimethylbenzene	ND	0.0668	ND	0.0668	ND	0.0668	ND	0.0668
Vinyl acetate	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
Vinyl chloride	ND	0.0957	ND	0.0957	ND	0.0957	ND	0.0957
m&p-Xylene	ND	0.112	ND	0.112	ND	0.112	ND	0.112
o-Xylene	ND	0.0732	ND	0.0732	ND	0.0732	ND	0.0732

Method Volatile Organics SW8260B

Test Code 826SWACM

Project Sample ID:	1099HBWW226	1099HBWW230	1099HBWW234	TRIP BLANK
Lab ID:	9910408-03A	9910408-06A	9910408-04A	9910408-08A
File ID:	C1021910	C1021913	C1021911	C1021907
Date Collected:	10/20/99 10:20	10/20/99 11:25	10/20/99 10:40	10/20/99
Date Prepared:	00:00:00	00:00:00	00:00:00	00:00:00
Date Analyzed:	10/21/99 20:44:00	10/21/99 22:09:00	10/21/99 21:13:00	10/21/99 19:19:00
Dilution Factor:	1	1	1	1
Matrix:	Water	Water	Water	Water
Units:	ug/L	ug/L	ug/L	ug/L
Report as:	received	received	received	received
Column:				
Analyte	Conc. DL	Conc. DL	Conc. DL	Conc. DL

Surrogate (s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	98	97	97	98
1,2-Dichloroethane-d4	103	104	104	99
Toluene-d8	102	100	101	101

Sample results have been qualified by Radian International based on the results of the data review process, which is modeled after the National Functional Guidelines for Organic and Inorganic Data Review (US EPA, February 1994).

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RADIAN ANALYTICAL SERVICES
FPAS REPORT
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Work Order # 9910408

Client HAMILTON BEACH
Facility WASHINGTON, NC
Client Code HAM BEACH NC

Certified By *[Signature]*

Date 11/4/99

Report Form	Analytical Batch ID	Pages	
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WORK ORDER SUMMARY

Report RADIAN INTERNATIONAL
To 3200 E. CHAPEL HILL RD.
P.O. BOX 13000
Attention JIM NARKUNAS

Client Code HAM BEACH NC
Client HAMILTON BEACH
Facility WASHINGTON, NC
Work ID VOLATILES

Work Order # 9910408
Page 1
RCN 80396901.01

Prepared Radian International, LLC
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

Case # NA
SDG # NA
RAS # 91014AJAL

New York ELAP ID #: 10915

CSC JALINDSEY

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Description
1099HBWW224	01A	826SWACM	Volatile Organics by GC/MS
	01B	SPAREB00	Spare Sample
	01C	SPAREB00	Spare Sample
1099HBWW225	02A	826SWACM	Volatile Organics by GC/MS
	02B	SPAREB00	Spare Sample
	02C	SPAREB00	Spare Sample
1099HBWW226	03A	826SWACM	Volatile Organics by GC/MS
	03B	SPAREB00	Spare Sample
	03C	SPAREB00	Spare Sample
1099HBWW234	04A	826SWACM	Volatile Organics by GC/MS
	04B	SPAREB00	Spare Sample
	04C	SPAREB00	Spare Sample
1099HBWW222	05A	826SWACM	Volatile Organics by GC/MS
	05B	SPAREB00	Spare Sample
	05C	SPAREB00	Spare Sample
1099HBWW230	06A	826SWACM	Volatile Organics by GC/MS
	06B	SPAREB00	Spare Sample
	06C	SPAREB00	Spare Sample
1099HBWW220	07A	826SWACM	Volatile Organics by GC/MS
	07B	SPAREB00	Spare Sample
	07C	SPAREB00	Spare Sample
TRIP BLANK	08A	826SWACM	Volatile Organics by GC/MS
	08B	SPAREB00	Spare Sample

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WORK ORDER COMMENTS

Work Order # 9910408

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The standard Method 8260A surrogate tolerances are laboratory derived from historical data. Project specific tolerances may differ.

STATE CERTIFICATIONS

State	Agency	Certification ID
Arkansas	Department of Pollution Control and Ecology	
California	California Environmental Laboratory Accreditation Program	2257
Kansas	Kansas Department of Health and Environment	E-10165
Louisiana	Louisiana Department of Health and Hospitals	LA 97-29
North Carolina	Department of Environment, Health and Natural Resources	302
New Jersey	New Jersey Department of Environmental Protection	82005
New York	New York State Department of Health	10915
Oklahoma	Oklahoma Water Resources Board	8720
South Carolina	Department of Health and Environmental Control	82003001
Utah	Utah Department of Health	RADC
Wisconsin	Wisconsin Department of Natural Resources	99885260

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
A	Presence of hydrocarbon mix eluting in the Lube Oil range. The pattern does not match that of Lube Oil.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
D	Presence of hydrocarbon mix eluting in the Diesel range. The pattern does not match that of Diesel.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
G	Presence of hydrocarbon mix eluting in the Jet Fuel range. The pattern does not match that of Jet Fuel.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

Client HAMILTON BEACHFacility WASHINGTON, NCClient Code HAM BEACH NCMethod Volatile Organics SW8260B

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
1099HBWW220	9910408-07A	826SWACM	NA	MSMSDC91021172601
1099HBWW222	9910408-05A	826SWACM	NA	MSMSDC91021172601
1099HBWW224	9910408-01A	826SWACM	NA	MSMSDC91021172601
1099HBWW225	9910408-02A	826SWACM	NA	MSMSDC91021172601
1099HBWW226	9910408-03A	826SWACM	NA	MSMSDC91021172601
1099HBWW230	9910408-06A	826SWACM	NA	MSMSDC91021172601
1099HBWW234	9910408-04A	826SWACM	NA	MSMSDC91021172601
TRIP BLANK	9910408-08A	826SWACM	NA	MSMSDC91021172601

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW220		1099HBWW222		1099HBWW224		1099HBWW225	
Lab ID:	9910408-07A		9910408-05A		9910408-01A		9910408-02A	
File ID:	C1021914		C1021912		C1021908		C1021909	
Date Collected:	10/20/99 11:45		10/20/99 11:05		10/20/99 09:40		10/20/99 09:25	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 22:38:00		10/21/99 21:41:00		10/21/99 19:48:00		10/21/99 20:16:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	ND	1.04	ND	1.04	ND	1.04	ND	1.04
Acetonitrile	ND	3.79	ND	3.79	ND	3.79	ND	3.79
Acrolein	ND	3.71	ND	3.71	ND	3.71	ND	3.71
Acrylonitrile	ND	0.305	ND	0.305	ND	0.305	ND	0.305
Benzene	ND	0.0469	ND	0.0469	ND	0.0469	ND	0.0469
1-Bromo-2-chloroethane	ND	0.0507	ND	0.0507	ND	0.0507	ND	0.0507
Bromobenzene	ND	0.0566	ND	0.0566	ND	0.0566	ND	0.0566
Bromochloromethane	ND	0.0990	ND	0.0990	ND	0.0990	ND	0.0990
Bromodichloromethane	ND	0.0619	ND	0.0619	ND	0.0619	ND	0.0619
Bromoform	ND	0.0756	ND	0.0756	ND	0.0756	ND	0.0756
Bromomethane	ND	0.0962	ND	0.0962	ND	0.0962	ND	0.0962
2-Butanone (MEK)	ND	0.179	ND	0.179	ND	0.179	ND	0.179
n-Butylbenzene	ND	0.0655	ND	0.0655	ND	0.0655	ND	0.0655
sec-Butylbenzene	ND	0.0744	ND	0.0744	ND	0.0744	ND	0.0744
tert-Butylbenzene	ND	0.0619	ND	0.0619	ND	0.0619	ND	0.0619
Carbon disulfide	0.162	0.0493	0.0944	0.0493	2.72	0.0493	0.0691	0.0493
Carbon tetrachloride	ND	0.0778	ND	0.0778	ND	0.0778	ND	0.0778
2-Chloro-1,3-butadiene	ND	0.0836	ND	0.0836	ND	0.0836	ND	0.0836
Chlorobenzene	ND	0.0527	ND	0.0527	ND	0.0527	ND	0.0527
Chloroethane	ND	0.0819	ND	0.0819	ND	0.0819	ND	0.0819

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW220		1099HBWW222		1099HBWW224		1099HBWW225	
Lab ID:	9910408-07A		9910408-05A		9910408-01A		9910408-02A	
File ID:	C1021914		C1021912		C1021908		C1021909	
Date Collected:	10/20/99 11:45		10/20/99 11:05		10/20/99 09:40		10/20/99 09:25	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 22:38:00		10/21/99 21:41:00		10/21/99 19:48:00		10/21/99 20:16:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Chloroform	ND	0.0600	ND	0.0600	ND	0.0600	0.171	0.0600
1-Chlorohexane	ND	0.0586	ND	0.0586	ND	0.0586	ND	0.0586
Chloromethane	ND	0.109	ND	0.109	ND	0.109	ND	0.109
3-Chloropropene	ND	0.0693	ND	0.0693	ND	0.0693	ND	0.0693
2-Chlorotoluene	ND	0.0581	ND	0.0581	ND	0.0581	ND	0.0581
4-Chlorotoluene	ND	0.0733	ND	0.0733	ND	0.0733	ND	0.0733
1,2-Dibromo-3-chloropropane	ND	0.266	ND	0.266	ND	0.266	ND	0.266
Dibromochloromethane	ND	0.0665	ND	0.0665	ND	0.0665	ND	0.0665
1,2-Dibromoethane	ND	0.0782	ND	0.0782	ND	0.0782	ND	0.0782
Dibromomethane	ND	0.0300	ND	0.0300	ND	0.0300	ND	0.0300
trans-1,4-Dichloro-2-butene	ND	0.264	ND	0.264	ND	0.264	ND	0.264
1,2-Dichlorobenzene	ND	0.0454	ND	0.0454	ND	0.0454	ND	0.0454
1,3-Dichlorobenzene	ND	0.0556	ND	0.0556	ND	0.0556	ND	0.0556
1,4-Dichlorobenzene	ND	0.0651	ND	0.0651	ND	0.0651	ND	0.0651
Dichlorodifluoromethane	ND	0.270	ND	0.270	ND	0.270	ND	0.270
1,1-Dichloroethane	ND	0.0588	ND	0.0588	ND	0.0588	ND	0.0588
1,2-Dichloroethane	ND	0.0408	ND	0.0408	ND	0.0408	ND	0.0408
1,1-Dichloroethene	ND	0.0819	ND	0.0819	ND	0.0819	ND	0.0819
cis-1,2-Dichloroethene	ND	0.0407	ND	0.0407	ND	0.0407	ND	0.0407
trans-1,2-Dichloroethene	ND	0.0422	ND	0.0422	ND	0.0422	ND	0.0422

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW220		1099HBWW222		1099HBWW224		1099HBWW225	
Lab ID:	9910408-07A		9910408-05A		9910408-01A		9910408-02A	
File ID:	C1021914		C1021912		C1021908		C1021909	
Date Collected:	10/20/99 11:45		10/20/99 11:05		10/20/99 09:40		10/20/99 09:25	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 22:38:00		10/21/99 21:41:00		10/21/99 19:48:00		10/21/99 20:16:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloropropane	ND	0.0527	ND	0.0527	ND	0.0527	ND	0.0527
1,3-Dichloropropane	ND	0.0591	ND	0.0591	ND	0.0591	ND	0.0591
2,2-Dichloropropane	ND	0.0903	ND	0.0903	ND	0.0903	ND	0.0903
1,1-Dichloropropene	ND	0.0712	ND	0.0712	ND	0.0712	ND	0.0712
cis-1,3-Dichloropropene	ND	0.0375	ND	0.0375	ND	0.0375	ND	0.0375
trans-1,3-Dichloropropene	ND	0.0430	ND	0.0430	ND	0.0430	ND	0.0430
Ethyl methacrylate	ND	0.0412	ND	0.0412	ND	0.0412	ND	0.0412
Ethylbenzene	ND	0.0563	ND	0.0563	ND	0.0563	ND	0.0563
Hexachlorobutadiene	ND	0.0763	ND	0.0763	ND	0.0763	ND	0.0763
2-Hexanone	ND	0.144	ND	0.144	ND	0.144	ND	0.144
Iodomethane	ND	0.0436	ND	0.0436	ND	0.0436	ND	0.0436
Isopropylbenzene	ND	0.0815	ND	0.0815	ND	0.0815	ND	0.0815
p-Isopropyltoluene	ND	0.0662	ND	0.0662	ND	0.0662	ND	0.0662
Methyl methacrylate	ND	0.0916	ND	0.0916	ND	0.0916	ND	0.0916
Methyl t-butyl ether	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
4-Methyl-2-pentanone (MIBK)	ND	0.0775	ND	0.0775	ND	0.0775	ND	0.0775
Methylene chloride	ND	0.0607	ND	0.0607	ND	0.0607	ND	0.0607
Naphthalene	ND	0.0576	ND	0.0576	ND	0.0576	ND	0.0576
Propanenitrile	ND	0.408	ND	0.408	ND	0.408	ND	0.408
n-Propylbenzene	ND	0.0558	ND	0.0558	ND	0.0558	ND	0.0558

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW220		1099HBWW222		1099HBWW224		1099HBWW225	
Lab ID:	9910408-07A		9910408-05A		9910408-01A		9910408-02A	
File ID:	C1021914		C1021912		C1021908		C1021909	
Date Collected:	10/20/99 11:45		10/20/99 11:05		10/20/99 09:40		10/20/99 09:25	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 22:38:00		10/21/99 21:41:00		10/21/99 19:48:00		10/21/99 20:16:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Styrene	ND	0.0500	ND	0.0500	ND	0.0500	ND	0.0500
1,1,1,2-Tetrachloroethane	ND	0.0728	ND	0.0728	ND	0.0728	ND	0.0728
1,1,2,2-Tetrachloroethane	ND	0.0785	ND	0.0785	ND	0.0785	ND	0.0785
Tetrachloroethene	ND	0.0591	ND	0.0591	ND	0.0591	ND	0.0591
Tetrahydrofuran	ND	0.527	ND	0.527	ND	0.527	ND	0.527
Toluene	ND	0.0645	ND	0.0645	ND	0.0645	ND	0.0645
1,2,3-Trichlorobenzene	ND	0.0682	ND	0.0682	ND	0.0682	ND	0.0682
1,2,4-Trichlorobenzene	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
1,1,1-Trichloroethane	ND	0.0631	ND	0.0631	ND	0.0631	ND	0.0631
1,1,2-Trichloroethane	ND	0.0576	ND	0.0576	ND	0.0576	ND	0.0576
Trichloroethene	ND	0.0499	ND	0.0499	ND	0.0499	ND	0.0499
Trichlorofluoromethane	ND	0.0632	ND	0.0632	ND	0.0632	ND	0.0632
1,2,3-Trichloropropane	ND	0.0795	ND	0.0795	ND	0.0795	ND	0.0795
1,1,2-Trichlorotrifluoroethane	ND	0.0599	ND	0.0599	ND	0.0599	ND	0.0599
1,2,4-Trimethylbenzene	ND	0.0590	ND	0.0590	ND	0.0590	ND	0.0590
1,3,5-Trimethylbenzene	ND	0.0668	ND	0.0668	ND	0.0668	ND	0.0668
Vinyl acetate	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
Vinyl chloride	ND	0.0957	ND	0.0957	ND	0.0957	ND	0.0957
m&p-Xylene	ND	0.112	ND	0.112	ND	0.112	ND	0.112
o-Xylene	ND	0.0732	ND	0.0732	ND	0.0732	ND	0.0732

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW220	1099HBWW222	1099HBWW224	1099HBWW225
Lab ID:	9910408-07A	9910408-05A	9910408-01A	9910408-02A
File ID:	C1021914	C1021912	C1021908	C1021909
Date Collected:	10/20/99 11:45	10/20/99 11:05	10/20/99 09:40	10/20/99 09:25
Date Prepared:	00:00:00	00:00:00	00:00:00	00:00:00
Date Analyzed:	10/21/99 22:38:00	10/21/99 21:41:00	10/21/99 19:48:00	10/21/99 20:16:00
Dilution Factor:	1	1	1	1
Matrix:	Water	Water	Water	Water
Units:	ug/L	ug/L	ug/L	ug/L
Report as:	received	received	received	received
Column:				
Analyte	Conc. DL	Conc. DL	Conc. DL	Conc. DL

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	97	98	99	99
1,2-Dichloroethane-d4	107	104	100	99
Toluene-d8	102	102	102	102

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW226		1099HBWW230		1099HBWW234		TRIP BLANK	
Lab ID:	9910408-03A		9910408-06A		9910408-04A		9910408-08A	
File ID:	C1021910		C1021913		C1021911		C1021907	
Date Collected:	10/20/99 10:20		10/20/99 11:25		10/20/99 10:40		10/20/99	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 20:44:00		10/21/99 22:09:00		10/21/99 21:13:00		10/21/99 19:19:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Acetone	ND	1.04	ND	1.04	ND	1.04	ND	1.04
Acetonitrile	ND	3.79	ND	3.79	ND	3.79	ND	3.79
Acrolein	ND	3.71	ND	3.71	ND	3.71	ND	3.71
Acrylonitrile	ND	0.305	ND	0.305	ND	0.305	ND	0.305
Benzene	ND	0.0469	ND	0.0469	ND	0.0469	ND	0.0469
1-Bromo-2-chloroethane	ND	0.0507	ND	0.0507	ND	0.0507	ND	0.0507
Bromobenzene	ND	0.0566	ND	0.0566	ND	0.0566	ND	0.0566
Bromochloromethane	ND	0.0990	ND	0.0990	ND	0.0990	ND	0.0990
Bromodichloromethane	ND	0.0619	ND	0.0619	ND	0.0619	ND	0.0619
Bromoform	ND	0.0756	ND	0.0756	ND	0.0756	ND	0.0756
Bromomethane	ND	0.0962	ND	0.0962	ND	0.0962	ND	0.0962
2-Butanone (MEK)	ND	0.179	ND	0.179	ND	0.179	ND	0.179
n-Butylbenzene	ND	0.0655	ND	0.0655	ND	0.0655	ND	0.0655
sec-Butylbenzene	ND	0.0744	ND	0.0744	ND	0.0744	ND	0.0744
tert-Butylbenzene	ND	0.0619	ND	0.0619	ND	0.0619	ND	0.0619
Carbon disulfide	0.0950	0.0493	ND	0.0493	0.0600	0.0493	ND	0.0493
Carbon tetrachloride	ND	0.0778	ND	0.0778	ND	0.0778	ND	0.0778
2-Chloro-1,3-butadiene	ND	0.0836	ND	0.0836	ND	0.0836	ND	0.0836
Chlorobenzene	ND	0.0527	ND	0.0527	ND	0.0527	ND	0.0527
Chloroethane	ND	0.0819	ND	0.0819	ND	0.0819	ND	0.0819

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW226		1099HBWW230		1099HBWW234		TRIP BLANK	
Lab ID:	9910408-03A		9910408-06A		9910408-04A		9910408-08A	
File ID:	C1021910		C1021913		C1021911		C1021907	
Date Collected:	10/20/99 10:20		10/20/99 11:25		10/20/99 10:40		10/20/99	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 20:44:00		10/21/99 22:09:00		10/21/99 21:13:00		10/21/99 19:19:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Chloroform	ND	0.0600	ND	0.0600	ND	0.0600	ND	0.0600
1-Chlorohexane	ND	0.0586	ND	0.0586	ND	0.0586	ND	0.0586
Chloromethane	ND	0.109	ND	0.109	ND	0.109	ND	0.109
3-Chloropropene	ND	0.0693	ND	0.0693	ND	0.0693	ND	0.0693
2-Chlorotoluene	ND	0.0581	ND	0.0581	ND	0.0581	ND	0.0581
4-Chlorotoluene	ND	0.0733	ND	0.0733	ND	0.0733	ND	0.0733
1,2-Dibromo-3-chloropropane	ND	0.266	ND	0.266	ND	0.266	ND	0.266
Dibromochloromethane	ND	0.0665	ND	0.0665	ND	0.0665	ND	0.0665
1,2-Dibromoethane	ND	0.0782	ND	0.0782	ND	0.0782	ND	0.0782
Dibromomethane	ND	0.0300	ND	0.0300	ND	0.0300	ND	0.0300
trans-1,4-Dichloro-2-butene	ND	0.264	ND	0.264	ND	0.264	ND	0.264
1,2-Dichlorobenzene	ND	0.0454	ND	0.0454	ND	0.0454	ND	0.0454
1,3-Dichlorobenzene	ND	0.0556	ND	0.0556	ND	0.0556	ND	0.0556
1,4-Dichlorobenzene	ND	0.0651	ND	0.0651	ND	0.0651	ND	0.0651
Dichlorodifluoromethane	ND	0.270	ND	0.270	ND	0.270	ND	0.270
1,1-Dichloroethane	ND	0.0588	0.265	0.0588	ND	0.0588	ND	0.0588
1,2-Dichloroethane	ND	0.0408	ND	0.0408	ND	0.0408	ND	0.0408
1,1-Dichloroethene	ND	0.0819	0.133	0.0819	ND	0.0819	ND	0.0819
cis-1,2-Dichloroethene	ND	0.0407	0.304	0.0407	ND	0.0407	ND	0.0407
trans-1,2-Dichloroethene	ND	0.0422	ND	0.0422	ND	0.0422	ND	0.0422

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW226		1099HBWW230		1099HBWW234		TRIP BLANK	
Lab ID:	9910408-03A		9910408-06A		9910408-04A		9910408-08A	
File ID:	C1021910		C1021913		C1021911		C1021907	
Date Collected:	10/20/99 10:20		10/20/99 11:25		10/20/99 10:40		10/20/99	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 20:44:00		10/21/99 22:09:00		10/21/99 21:13:00		10/21/99 19:19:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
1,2-Dichloropropane	ND	0.0527	ND	0.0527	ND	0.0527	ND	0.0527
1,3-Dichloropropane	ND	0.0591	ND	0.0591	ND	0.0591	ND	0.0591
2,2-Dichloropropane	ND	0.0903	ND	0.0903	ND	0.0903	ND	0.0903
1,1-Dichloropropene	ND	0.0712	ND	0.0712	ND	0.0712	ND	0.0712
cis-1,3-Dichloropropene	ND	0.0375	ND	0.0375	ND	0.0375	ND	0.0375
trans-1,3-Dichloropropene	ND	0.0430	ND	0.0430	ND	0.0430	ND	0.0430
Ethyl methacrylate	ND	0.0412	ND	0.0412	ND	0.0412	ND	0.0412
Ethylbenzene	ND	0.0563	ND	0.0563	ND	0.0563	ND	0.0563
Hexachlorobutadiene	ND	0.0763	ND	0.0763	ND	0.0763	ND	0.0763
2-Hexanone	ND	0.144	ND	0.144	ND	0.144	ND	0.144
Iodomethane	ND	0.0436	ND	0.0436	ND	0.0436	ND	0.0436
Isopropylbenzene	ND	0.0815	ND	0.0815	ND	0.0815	ND	0.0815
p-Isopropyltoluene	ND	0.0662	ND	0.0662	ND	0.0662	ND	0.0662
Methyl methacrylate	ND	0.0916	ND	0.0916	ND	0.0916	ND	0.0916
Methyl t-butyl ether	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
4-Methyl-2-pentanone (MIBK)	ND	0.0775	ND	0.0775	ND	0.0775	ND	0.0775
Methylene chloride	ND	0.0607	ND	0.0607	ND	0.0607	0.120 B	0.0607
Naphthalene	ND	0.0576	ND	0.0576	ND	0.0576	ND	0.0576
Propanenitrile	ND	0.408	ND	0.408	ND	0.408	ND	0.408
n-Propylbenzene	ND	0.0558	ND	0.0558	ND	0.0558	ND	0.0558

Method Volatile Organics SW8260BTest Code 826SWACM

Project Sample ID:	1099HBWW226		1099HBWW230		1099HBWW234		TRIP BLANK	
Lab ID:	9910408-03A		9910408-06A		9910408-04A		9910408-08A	
File ID:	C1021910		C1021913		C1021911		C1021907	
Date Collected:	10/20/99 10:20		10/20/99 11:25		10/20/99 10:40		10/20/99	
Date Prepared:	00:00:00		00:00:00		00:00:00		00:00:00	
Date Analyzed:	10/21/99 20:44:00		10/21/99 22:09:00		10/21/99 21:13:00		10/21/99 19:19:00	
Dilution Factor:	1		1		1		1	
Matrix:	Water		Water		Water		Water	
Units:	ug/L		ug/L		ug/L		ug/L	
Report as:	received		received		received		received	
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Styrene	ND	0.0500	ND	0.0500	ND	0.0500	ND	0.0500
1,1,1,2-Tetrachloroethane	ND	0.0728	ND	0.0728	ND	0.0728	ND	0.0728
1,1,2,2-Tetrachloroethane	ND	0.0785	ND	0.0785	ND	0.0785	ND	0.0785
Tetrachloroethene	ND	0.0591	ND	0.0591	ND	0.0591	ND	0.0591
Tetrahydrofuran	ND	0.527	ND	0.527	ND	0.527	ND	0.527
Toluene	ND	0.0645	0.309	0.0645	ND	0.0645	0.0974	0.0645
1,2,3-Trichlorobenzene	ND	0.0682	ND	0.0682	ND	0.0682	ND	0.0682
1,2,4-Trichlorobenzene	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
1,1,1-Trichloroethane	ND	0.0631	ND	0.0631	ND	0.0631	ND	0.0631
1,1,2-Trichloroethane	ND	0.0576	ND	0.0576	ND	0.0576	ND	0.0576
Trichloroethene	ND	0.0499	0.921	0.0499	ND	0.0499	ND	0.0499
Trichlorofluoromethane	ND	0.0632	ND	0.0632	ND	0.0632	ND	0.0632
1,2,3-Trichloropropane	ND	0.0795	ND	0.0795	ND	0.0795	ND	0.0795
1,1,2-Trichlorotrifluoroethane	ND	0.0599	ND	0.0599	ND	0.0599	ND	0.0599
1,2,4-Trimethylbenzene	ND	0.0590	ND	0.0590	ND	0.0590	ND	0.0590
1,3,5-Trimethylbenzene	ND	0.0668	ND	0.0668	ND	0.0668	ND	0.0668
Vinyl acetate	ND	0.0512	ND	0.0512	ND	0.0512	ND	0.0512
Vinyl chloride	ND	0.0957	ND	0.0957	ND	0.0957	ND	0.0957
m&p-Xylene	ND	0.112	ND	0.112	ND	0.112	ND	0.112
o-Xylene	ND	0.0732	ND	0.0732	ND	0.0732	ND	0.0732

Method Volatile Organics SW8260B

Test Code 826SWACM

Project Sample ID:	1099HBWW226	1099HBWW230	1099HBWW234	TRIP BLANK
Lab ID:	9910408-03A	9910408-06A	9910408-04A	9910408-08A
File ID:	C1021910	C1021913	C1021911	C1021907
Date Collected:	10/20/99 10:20	10/20/99 11:25	10/20/99 10:40	10/20/99
Date Prepared:	00:00:00	00:00:00	00:00:00	00:00:00
Date Analyzed:	10/21/99 20:44:00	10/21/99 22:09:00	10/21/99 21:13:00	10/21/99 19:19:00
Dilution Factor:	1	1	1	1
Matrix:	Water	Water	Water	Water
Units:	ug/L	ug/L	ug/L	ug/L
Report as:	received	received	received	received
Column:				
Analyte	Conc. DL	Conc. DL	Conc. DL	Conc. DL

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
1,4-Bromofluorobenzene	98	97	97	98
1,2-Dichloroethane-d4	103	104	104	99
Toluene-d8	102	100	101	101

ANALYSIS BATCH SUMMARY

Work Order # 9910408Analysis Batch # MSMSDC91021172601Page 16Method Volatile Organics SW8260BAnalysis Start Date/Time 10/21/99 17:26:00Instrument MSDCTest Code 826SWA00Analysis Stop Date/Time 10/22/99 04:53:00Analyst MERInitial Calibration # MSDC991018000000Reviewer TLACalibration Date 10/18/99

Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1 10/21/99 16:28:00		SB	Blank, System	C1021901
2 10/21/99 16:57:00		SB	Blank, System	C1021902
3 10/21/99 17:26:00		BFB	GC/MS tune files	C1021903
4 10/21/99 17:26:00		VSTDCAL	Continuing Calibration Verification	C1021903
5 10/21/99 17:54:00		LCS994409	Lab Control Sample	C1021904
6 10/21/99 18:23:00		LCSD994410	Lab Control Sample Duplicate	C1021905
7 10/21/99 18:51:00		BLK992783	Blank, Method	C1021906
8 10/21/99 19:19:00	TRIP BLANK	9910408-08A	Sample	C1021907
9 10/21/99 19:48:00	1099HBWW224	9910408-01A	Sample	C1021908
10 10/21/99 20:16:00	1099HBWW225	9910408-02A	Sample	C1021909
11 10/21/99 20:44:00	1099HBWW226	9910408-03A	Sample	C1021910
12 10/21/99 21:13:00	1099HBWW234	9910408-04A	Sample	C1021911
13 10/21/99 21:41:00	1099HBWW222	9910408-05A	Sample	C1021912
14 10/21/99 22:09:00	1099HBWW230	9910408-06A	Sample	C1021913
15 10/21/99 22:38:00	1099HBWW220	9910408-07A	Sample	C1021914
16 10/21/99 23:06:00		9910310-06A	Sample	C1021915
17 10/21/99 23:35:00		9910310-12A	Matrix Spike	C1021916
18 10/22/99 00:03:00		9910310-13A	Matrix Spike Duplicate	C1021917
19 10/22/99 00:31:00		9910310-07A	Sample	C1021918
20 10/22/99 01:00:00		9910310-08A	Sample	C1021919
21 10/22/99 01:28:00		9910310-09A	Sample	C1021920
22 10/22/99 01:56:00		9910310-11A	Sample	C1021921
23 10/22/99 02:25:00		9910393-04A	Sample	C1021922
24 10/22/99 02:53:00		9910393-05A	Sample	C1021923
25 10/22/99 03:23:00		9910310-10A	Sample	C1021924
26 10/22/99 03:53:00		9910393-01A	Sample	C1021925
27 10/22/99 04:23:00		9910393-02A	Sample	C1021926
28 10/22/99 04:53:00		9910393-03A	Sample	C1021927

ANALYTICAL PROTOCOL SUMMARY
COMMENTS / NARRATIVE

Method Volatile Organics SW8260B Specification# _____

Lab Sample ID	Project Sample				
File ID	ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action

9910408

Laboratory
Chain of Custody Record

PROJECT			MS/MSD	NO. OF CONTAINERS	ANALYSES										REMARKS		
Hamilton Beach-Practor S. lex					8260												
SITE:																	
Washington, NC																	
PREPARED BY (Signature)																	
FIELD SAMPLE I.D.	SAMPLE MATRIX	DATE/TIME															
1099HBWW224	H ₂ O	10/20/99 09:40		3	X												Samples are
1099HBWW225		09:25		3	B												UNPRESERVED
1099HBWW226		10:20		3	B												7 Day FA
1099HBWW234		10:40		3	B												Hold Time
1099HBWW222		11:05		3	B												
1099HBWW230		11:25		3	B												
1099HBWW220		V 11:45		3	B												
Trip Blank	V			2	V												lab, 4mm
REMARKS			Attention:										RELINQUISHED BY:	DATE	TIME		
Shipped FedEx 8132 2234 6973													<i>[Signature]</i>	10/20/99	14:00		
RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME			

LAB USE ONLY

RECEIVED FOR LABORATORY BY:	DATE	TIME	AIRBILL NO.	OPENED BY:	DATE	TIME	TEMP °C	SEAL #	CONDITION
<i>[Signature]</i>	10/21/99	10:00							ADD # 99-1772

REMARKS:

283

500

FedEx USA Airbill

FedEx Tracking Number

8132 2234 6973

Form I.D. No.

0215

RECIPIENT: PEEL HERE

1 From This portion can be removed for Recipient's records.
Date 10/20/97 FedEx Tracking Number 813222346973

Sender's Name Craig Kennedy Phone 919 461-1100

Company RADIAN INTERNATIONAL

Address 1600 PERIMETER PARK DR
Dept./Floor/Suite/Room

City MORRISVILLE State NC ZIP 27560

2 Your Internal Billing Reference 80396901.01

3 To Recipient's Name Sample Control Phone 512 310 5249

Company Radian International

Address 14046 Summit Dr. Suite 101
We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

To "HOLD" at FedEx location, print FedEx address here.
City Austin State TX ZIP 78728



4a Express Package Service

FedEx Priority Overnight Next business morning
 FedEx Standard Overnight Next business afternoon
 FedEx First Overnight Earliest next business morning delivery to select locations
 FedEx 2Day* Second business day
 FedEx Express Saver* Third business day
* FedEx Letter Rate not available. Minimum charge: One pound rate.

Packages up to 150 lbs. Delivery commitment may be later in some areas.

4b Express Freight Service

FedEx 1Day Freight* Next business day
 FedEx 2Day Freight Second business day
 FedEx 3Day Freight Third business day
* Call for Confirmation.

Packages over 150 lbs. Delivery commitment may be later in some areas.

5 Packaging

FedEx Letter*
 FedEx Pak*
 Other Pkg. Includes FedEx Box, FedEx Tube, and customer pkg.
* Declared value limit \$500

6 Special Handling

Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
 Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes
 HOLD Weekday at FedEx Location Not available with FedEx First Overnight
 HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

No Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice Dry Ice, 9 UN 1845 x _____ kg
Dangerous Goods cannot be shipped in FedEx packaging Cargo Aircraft Only

7 Payment Bill to:

Sender Acc't No. in Section I will be billed.
 Recipient Third Party Credit Card Cash/Check
Enter FedEx Acct. No. in Section below.

Total Packages 1 Total Weight 2.5
Total Charges
Credit Card Auth

*Our liability is limited to \$100 unless you declare a higher value. See the FedEx Service Guide for details.

8 Release Signature Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.
Questions? Call 1-800-Go-FedEx (800-463-3339)
Visit our Web site at www.fedex.com

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