Final
Soil-Gas and Groundwater Monitoring Report

for the October/November 2006 Sampling Event

Contract F41624-03-D-8597 Task Order 0188

Air Force Plant 59

Johnson City, New York

Prepared for:

Air Force Center for Engineering and the Environment and Aeronautical Systems Center

Prepared by:

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August 2007

PREFACE

This *Final Soil-Gas and Groundwater Monitoring Report for the October/November 2006 Sampling Event* has been prepared by Earth Tech to describe field and laboratory operations conducted as part of the groundwater monitoring and soil-gas investigation at Air Force Plant 59 (AFP 59), Johnson City, New York. Fieldwork followed guidelines set forth in the *Final Work Plan for Groundwater Monitoring at AFP 59* (Earth Tech, 1998), and the Air Force Center for Environmental Excellence *Model Work Plan* (USAF, 1996) and *Model Field Sampling Plan, Version 1.1* (USAF, 1997). Acceptance of this report in performance of the contract under which it is prepared does not mean that the United States Air Force (USAF) adopts the conclusions, recommendations, or other views expressed herein, which are those of Earth Tech only and do not necessarily reflect the official position of the USAF. All work was completed under Air Force Center for Engineering and the Environment (AFCEE) Contract Number F41624-03-D-8597, Task Order 0188. This investigation was conducted to accomplish the following objectives:

- To monitor the effects to groundwater from the soil removal action performed by Earth Tech in July 2005 (Earth Tech, 2005). The excavation activities were designed to remove soil containing trichloroethene (TCE) from the soil pile located against the western wall of the East Basement.
- To define the extent of elevated volatile organic compound (VOC) contamination in soil gas and determine if soil-gas VOC contamination is moving to AFP 59 from another source and/or moving away from AFP 59.
- To determine if there is any correlation between soil-gas and groundwater VOC contamination.

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13. ABSTRACT *(Maximum 200 words)*

This *Final Soil-Gas and Groundwater Monitoring Report for the October/November 2006 Sampling Event at Air Force Plant 59, Johnson City, New York,* summarizes the field work completed and data collected during the soil-gas and groundwater investigation. This investigation was conducted to accomplish the following objectives: To monitor the effects to groundwater from the soil removal action performed by Earth Tech in July 2005 and define the extent of elevated soil-gas contamination, determine if soil-gas contamination is migrating onto and/or away from AFP 59, and determine if there is a correlation between groundwater and soil-gas contamination.

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LIST OF ACRONYMS AND ABBREVIATIONS

AFCEE	Air Force Center for Engineering and the Environment
AFP 59	Air Force Plant 59
bgs	Below Ground Surface
cis-1,2-DCE	Cis-1,2-Dichloroethene
COPCs	Chemicals of Potential Concern
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
LTM	Long-Term Monitoring
µg/L	Micrograms per Liter
µg/m^3	Micrograms per cubic meter
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Non-Detect
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ORP	Oxidation Reduction Potential
PCE	Tetrachloroethene
ppbv	Parts per Billion by Volume
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RI/FS	Remedial Investigation/Feasibility Study
RL	Reporting Limit
STL	Severn Trent Laboratories

LIST OF ACRONYMS AND ABBREVIATIONS (CONTINUED)

1,1,1-TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
trans-1,2-DCE	Trans-1,2-Dichloroethene
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
VC	Vinyl Chloride
VOC	Volatile Organic Compound

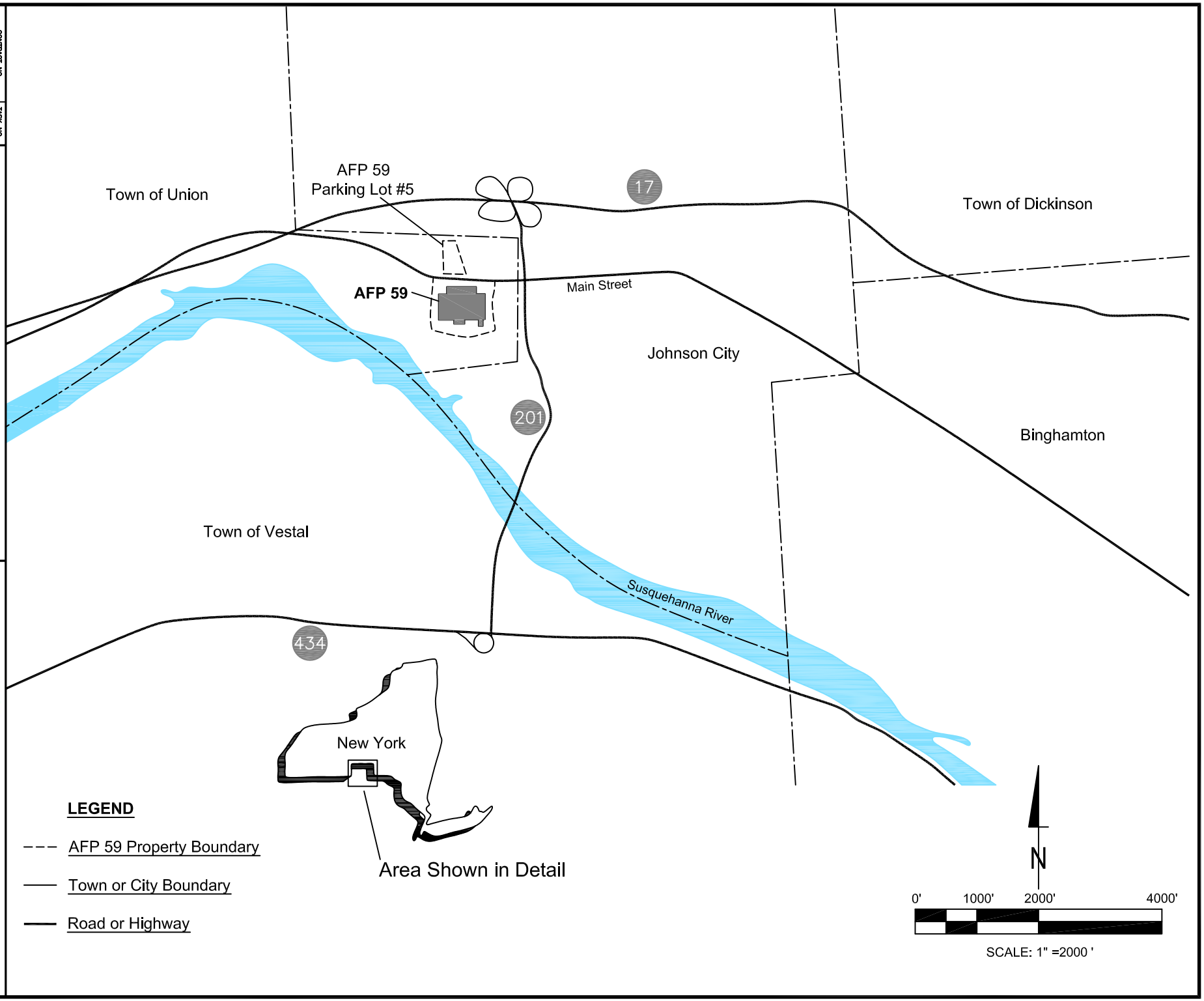
1.0 INTRODUCTION

This *Final Soil-Gas and Groundwater Monitoring Report for the October/November 2006 Sampling Event* has been prepared by Earth Tech to describe field and laboratory operations during the October/November 2006 soil-gas and groundwater sampling event. The October/November 2006 sampling event was conducted as part of the groundwater monitoring and soil-gas investigation at Air Force Plant 59 (AFP 59), Johnson City, New York. Earth Tech was contracted by the Air Force Center for Engineering and the Environment (AFCEE) to perform one round of groundwater sampling and one round of soil-gas sampling at AFP 59. This report documents the findings from the groundwater and soil-gas sampling event. Figure 1-1 shows the regional location of AFP 59. Figure 1-2 shows the site location of AFP 59. This sampling event was conducted to accomplish the following objectives:

- To monitor the effects to groundwater from the soil removal action performed by Earth Tech in July 2005 (Earth Tech, 2005). The excavation activities were designed to remove soil containing trichloroethene (TCE) from the soil pile located against the western wall of the East Basement.
- To define the extent of elevated volatile organic compound (VOC) contamination in soil gas and determine if soil-gas VOC contamination is moving to AFP 59 from another source and/or moving from AFP 59.
- To determine if there is any correlation between soil-gas and groundwater VOC contamination.

All sampling activities followed protocols presented in the *Final Work Plan for Soil Vapor Study and Long-Term Monitoring at AFP 59* (Earth Tech, 2006), the *Final Sampling and Analysis Plan* (Earth Tech, 1994), and the Air Force Center for Environmental Excellence *Model Work Plan* (USAF, 1996) and *Model Field Sampling Plan, Version 1.1* (USAF, 1997).

This report contains the following four sections: Section 1.0 provides the objectives of the sampling event, Section 2.0 provides a summary of the activities conducted during the sampling event, Section 3.0 summarizes the analytical results, and Section 4.0 presents conclusions from the investigation.



Regional Location Map

Figure 1-1

Air Force Plant 59 – Johnson City, New York

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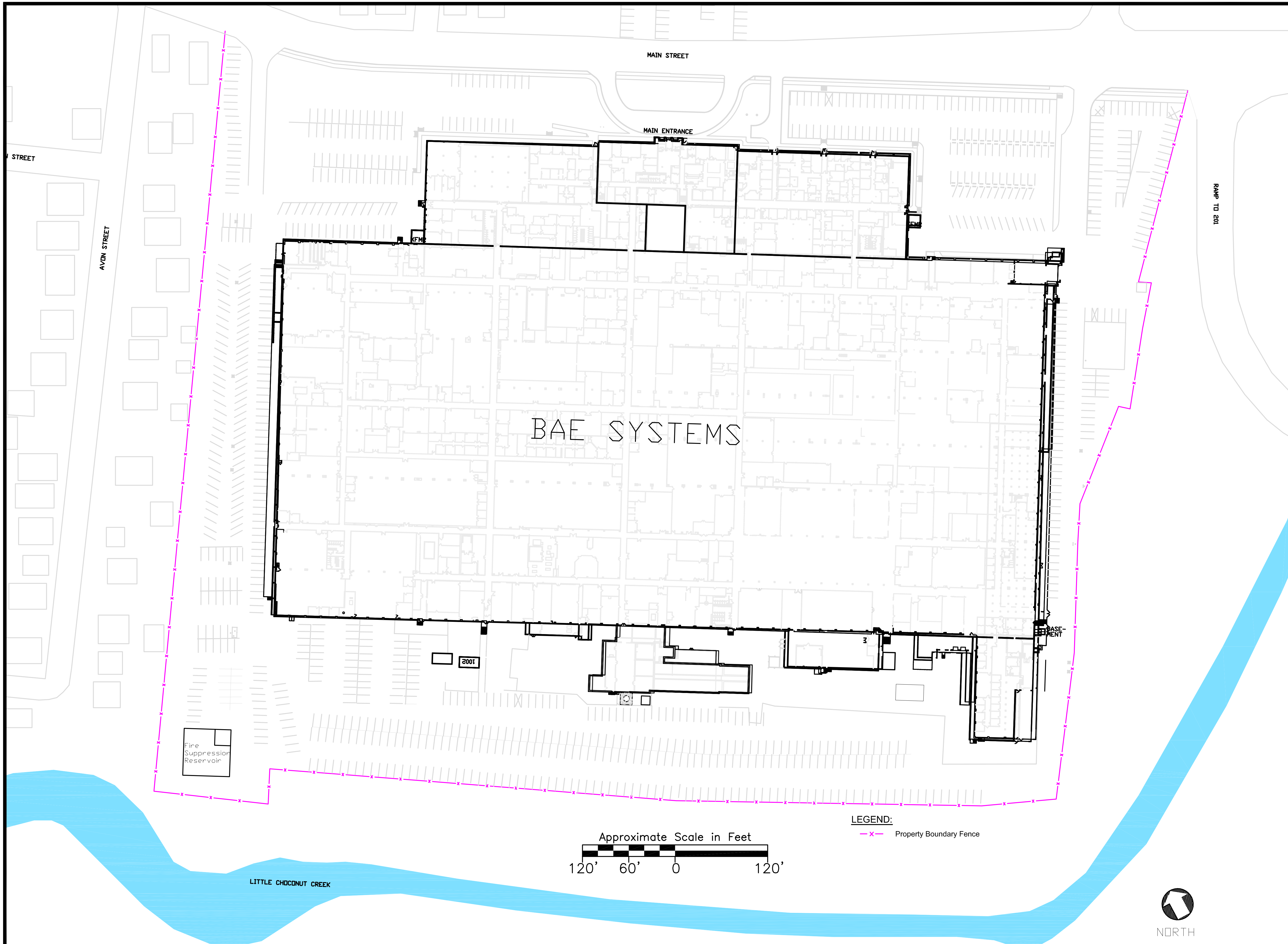

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Air Force Plant 59 – Johnson City, New York

Figure 1-2
Air Force Plant 59
Site Location Map

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2.0 PROJECT ACTIVITIES

The following sections summarize activities conducted during the October/November 2006 sampling event. Section 2.1 summarizes the rationale for selecting the analyses performed on samples collected during the investigation, and Section 2.2 outlines the sampling procedures.

2.1 SAMPLE ANALYSIS SUMMARY

Based on the conclusions presented in the *Final Remedial Investigation Report* (Earth Tech, 1996) and recommendations made by the New York State Department of Environmental Conservation (NYSDEC), it was determined that VOCs represent the only chemicals of potential concern (COPCs) in groundwater at AFP 59. As a result, the *Record of Decision* (Earth Tech, 1999b) for AFP 59 describes the remedial alternative (i.e., the upgrade of the Camden Street Well Field groundwater treatment system) chosen as most appropriate for treating the VOCs in groundwater at AFP 59. As part of the requirements defined in the *Record of Decision* (Earth Tech, 1999b), a long-term monitoring (LTM) program was established for AFP 59. The LTM program, which is defined in the April 27, 1999 letter to the NYSDEC (Earth Tech, 1999a), was concluded with the November 2004 sampling event. The LTM included sampling the following monitoring wells: SW1, DW1, SW3, DW3, SW4, and SW7. Monitoring wells SW1 and DW1 represent upgradient (background) wells, and monitoring wells SW3 and DW3 represent downgradient wells. Monitoring wells SW4 and SW7 have historically had the highest concentrations of VOCs.

A soil pile containing TCE contamination in the East Basement of the AFP 59 facility was excavated and removed (Figure 2.1-1) in July 2005, 15 months prior to this sampling event. The soil pile was upgradient of monitoring wells SW3, DW3, SW4, and SW7. This is the second of two groundwater sampling events designed to observe what effect this removal action may have on groundwater.

The groundwater samples collected during the October/November 2006 sampling event were analyzed for VOCs by United States Environmental Protection Agency (USEPA) Method SW8260. Table 2.1-1 lists the total number of groundwater samples collected for each sample type (e.g., environmental sample, duplicate sample) during the October/November 2006 sampling event. Figure 2.1-1 shows the locations of the on-site monitoring wells sampled during the October/November 2006 sampling event, and the location of the TCE contaminated soil removed in July 2005.

The soil-gas samples collected during the October/November 2006 sampling event were analyzed for VOCs by USEPA Method TO15. Table 2.1-1 lists the total number of soil-gas samples collected for each sample type (e.g., environmental sample, duplicate sample) during the October/November 2006 sampling events. Figure 2.1-1 shows the locations of the soil-gas samples collected during the October/November 2006 sampling events.

MAIN STREET

MAIN ENTRANCE

AVON STREET

RAMP TO I 201

BAE SYSTEMS

SG-17
SG-16
SG-15
SG-14
SG-13
SG-12
SG-1
SG-11
SG-10
SG-2
SG-09
SG-18
SG-19
SG-20
SW1
DW1
SG-21
SG-22
SG-23
SG-24
SG-25
SG-26
SG-27
SG-28
SG-29
SG-30
SG-31
SG-32
SG-08
SG-07
SG-06
SG-05
SG-04
SG-03
SW7
SW4
SW3
DW3
Fire Suppression Reservoir
BASEMENT
2001
LITTLE CHOCONUT CREEK

Approximate Scale in Feet

120' 60' 0 120'

LEGEND:

- Soil-Gas Sampling Point
- Soil-Gas Sampling Point not Analyzed
- Previous Soil-Gas Sampling Point
- Monitoring Well Sampled November 2006
- Property Boundary Fence
- TCE Contaminated Soil Removal Area

NORTH

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Air Force Plant 59 – Johnson City, New York

Figure 2.1-1
AFP 59 Sampling Locations
October/November, 2006

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Table 2.1-1
Sample Analysis Summary

Method	Matrix	# Samples	# Equipment Blanks	# MS/MSDs	# Trip Blanks	# Field Duplicates	Total # Samples
SW8260B Volatile Organics	Groundwater	6	0(1)	1(2)	1	1	10
TO15 Volatile Organics	Soil Gas	23	0	0	0	3	26

(1) No equipment blanks were collected because disposable bailers were used during groundwater sampling.

(2) One matrix spike (MS) and one matrix spike duplicate (MSD) was taken.

Two soil-gas samples (SG-1 and SG-2) were collected in October 2004 (Refer to Figure 2.1-1) and analyzed for VOCs by USEPA Method TO15. The results of these previous soil-gas samples led to the additional soil-gas sampling conducted during the October/November 2006 sampling event. Both of these samples had chlorinated VOC detections, with SG-2 having the highest concentrations. The following maximum concentrations were detected in soil-gas sample SG-2: TCE at 720 micrograms per cubic meter (µg/m^3), 1,1-DCE at 23 µg/m^3, 1,1-DCA at 170 µg/m^3, and 1,1,1-TCA at 3,000 µg/m^3.

2.2 FIELD ACTIVITIES

2.2.1 Groundwater Sampling

The primary field activity was the sampling of the six monitoring wells shown in Figure 2.1-1. The following is a summary of the field activities:

- Measure the groundwater level in the six on-site monitoring wells.
- Collect groundwater samples for VOC analysis from six on-site monitoring wells.

The groundwater sampling methods followed protocols presented in the *Final Work Plan for Soil Vapor Study and Long-Term Monitoring at AFP 59* (Earth Tech, 2006) and in the *Final Sampling and Analysis Plan* (Earth Tech, 1994), which was prepared for the remedial investigation conducted at AFP 59. The primary objectives of the sampling event were to monitor the effects to groundwater from the soil removal action performed by Earth Tech in July 2005 and to determine if any correlation exists between elevated concentrations of VOCs in groundwater and soil gas.

Groundwater sampling procedures included the following:

1. Measuring groundwater levels in the six on-site monitoring wells.
2. Purging monitoring wells prior to sampling.
3. Measuring field-derived parameters (including temperature, pH, specific conductance, dissolved oxygen, oxidation reduction potential (ORP), and turbidity) during monitoring well purging.
4. Collecting groundwater and quality assurance (QA)/quality control (QC) samples from the purged monitoring wells using a disposable bailer.
5. Decontaminating all reusable sampling equipment after the sample had been collected.

Refer to the *Final Work Plan for Soil Vapor Study and Long-Term Monitoring at AFP 59* (Earth Tech, 2006) and the *Final Sampling and Analysis Plan* (Earth Tech, 1994) for a detailed description of all sampling activities and protocols.

Water level measurements were taken once within a single 24-hour period in the six monitoring wells to determine the elevation of the water table (in the shallow zone of the aquifer) or

piezometric surface (in the deep zone of the aquifer). Any conditions that affected water levels were recorded in the field log. Water level measurements were taken with an electric sounder and were measured to the nearest 0.01-foot. All measuring equipment was decontaminated according to the specifications in the *Final Sampling and Analysis Plan* (Earth Tech, 1994).

Static water levels were measured each time a monitoring well was sampled and before any equipment entered the monitoring well. If the casing cap was airtight, the air pressure within the monitoring well was allowed to equilibrate after the cap was removed and prior to measurement of the water level.

2.2.2 Soil-Gas Sampling

The soil-gas field activities included collecting soil-gas samples for VOC analysis from 30 soil-gas points. Figure 2.1-1 shows the locations of the soil-gas samples.

The soil-gas sampling methods followed protocols presented in the *Final Work Plan for Soil Vapor Study and Long-Term Monitoring at AFP 59* (Earth Tech, 2006). The primary objectives of the sampling event were to monitor the concentrations of VOCs in the soil gas surrounding the AFP 59 facility to determine if soil-gas contamination is migrating on site and/or migrating off site, and to determine if there is any correlation to VOC contamination in groundwater and soil gas.

Soil-gas sampling procedures included the following:

1. Drive the hollow steel rods to the specified depth of 4 feet below ground surface (bgs) with a direct push rig.
2. Retract rods 6 inches to remove the steel tip and expose soil gas.
3. Place the dedicated polyethylene tubing ($^1/_2$-inch outside diameter) in the steel rods and sealing the annulus at the surface with bentonite slurry.
4. Connect the pre-designated purge vessel (SUMMA® canister) to the ball valve attached to the free end of the tubing.
5. Purge the tubing by opening the canister and then closing it to isolate the tubing.
6. Connect the new sample SUMMA® canister and collect soil-gas sample from the soils at the desired depth.

Refer to the *Final Work Plan for Soil Vapor Study and Long-Term Monitoring at AFP 59* (Earth Tech, 2006) for a detailed description of all sampling activities and protocols.

There were slight variations in the sampling protocols from the New York State Department of Health (NYSDOH) *Guidance for Evaluating Vapor Intrusion in the State of New York* (October 2006). This guidance was finalized and posted on the internet October 19, 2006, two weeks prior to the commencement of field activities. The variations in sampling protocol were unknown to Earth Tech personnel until after the sampling event was completed.

3.0 INVESTIGATION RESULTS

The results of the October/November 2006 sampling event at AFP 59 and the historical trend of contaminants in groundwater are summarized in the following sections. Field data are provided in Appendix B, chain-of-custody forms are provided in Appendix C, analytical data are provided in Appendices D and E, and groundwater contaminant trend analysis graphs are provided in Appendix F.

3.1 SAMPLING AND ANALYSIS RESULTS

This section summarizes the data collection activities completed during the October/November 2006 sampling event, presents the laboratory analytical results, and provides a trend analysis of identified VOCs in groundwater.

3.1.1 Review of Field and Laboratory Data

All field procedures, sample handling documentation, and laboratory procedures followed protocols presented in the *Final Work Plan for Soil Vapor Study and Long-Term Monitoring at AFP 59* (Earth Tech, 2006) and the *Final Sampling and Analysis Plan* (Earth Tech, 1994). All analytical data generated as a result of the October/November 2006 sampling event were reported as AFCEE definitive data. Analytical protocols utilized in sample preparation, analysis, and reporting were in accordance with the specific analytical method and the guidelines given in the Air Force Center for Environmental Excellence *Quality Assurance Project Plan, Version 3.1* (USAF, 2001). Soil-gas laboratory analyses were performed by Severn Trent Laboratories (STL), Knoxville, Tennessee. Groundwater laboratory analyses were performed by Kemron Environmental Services (Kemron), Marietta, Ohio. Analytical methods, method detection limits (MDLs), and reporting limits (RLs) are shown in Appendices D and E. Data validation was performed by Earth Tech.

Data flags were applied to the analytical data by the laboratory. During the data review process, Earth Tech reviewed the analytical data and associated data flags, and assigned data qualifiers as per the guidelines given in the Air Force Center for Environmental Excellence *Quality Assurance Project Plan, Version 3.1* (USAF, 2001); the data validation review is provided in Appendices D and E. The following data qualifiers were assigned to the data as a result of the data validation process and are defined below.

- **J** The analyte was positively identified, but the quantitation is an estimated value.
- **U** The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

3.1.2 Groundwater Data Summary

The number and locations of groundwater samples are outlined below. Figure 2.1-1 shows the locations of the monitoring wells sampled during the October/November 2006 sampling event.

The following monitoring wells were sampled and analyzed for VOCs using USEPA Method SW8260:

- Shallow monitoring wells SW1, SW3, SW4, and SW7, and
- Deep monitoring wells DW1 and DW3.

3.1.2.1 Volatile Organic Compounds Detected in Groundwater Samples

This section discusses the VOCs that were detected in the groundwater samples, including those samples collected from both site and background monitoring wells. The analytical results for groundwater samples collected from monitoring wells installed in the shallow and deep zones of the aquifer are discussed separately in the following paragraphs. The analytical results for all groundwater samples collected during the October/November 2006 sampling event are summarized in Table 3.1-1. Appendix D provides a complete listing of all groundwater analytical results.

Shallow Zone of the Aquifer. VOCs detected in groundwater samples are shown in Figure 3.1-1. Table 3.1-2 summarizes all VOCs detected in groundwater samples collected from monitoring wells screened in the shallow zone, the number of samples above the laboratory MDL, the minimum and maximum concentrations detected, and the location of the maximum concentration.

VOCs were detected in the groundwater samples collected from shallow monitoring wells SW3, SW4, and SW7 (Refer to Figure 3.1-1). Chlorinated hydrocarbons, chloroform, and methylene chloride were the only detected VOCs in the samples collected from the shallow zone of the aquifer. No VOCs were detected in the groundwater sample collected from monitoring well SW1.

The following maximum concentrations were detected in the groundwater sample collected from monitoring well SW4: 1,1,1-trichloroethane (1,1,1-TCA) at 3.35 micrograms per liter (µg/L), 1,1-dichloroethane (1,1-DCA) at 1.72 µg/L, tetrachloroethene (PCE) at 0.664 J µg/L, cis-1,2-dichloroethene (cis-1,2-DCE) at 2.65 µg/L, and TCE at 5.62 µg/L. The following maximum concentrations were detected in the groundwater sample collected from monitoring well SW3: chloroform at 0.151J µg/L and methylene chloride at 0.339J µg/L.

Deep Zone of the Aquifer. VOCs detected in groundwater samples are shown in Figure 3.1-1. Table 3.1-3 summarizes all VOCs detected in groundwater samples collected from monitoring wells screened in the deep zone, the number of samples above the laboratory MDL, the minimum and maximum concentrations detected, and the location of the maximum concentration.

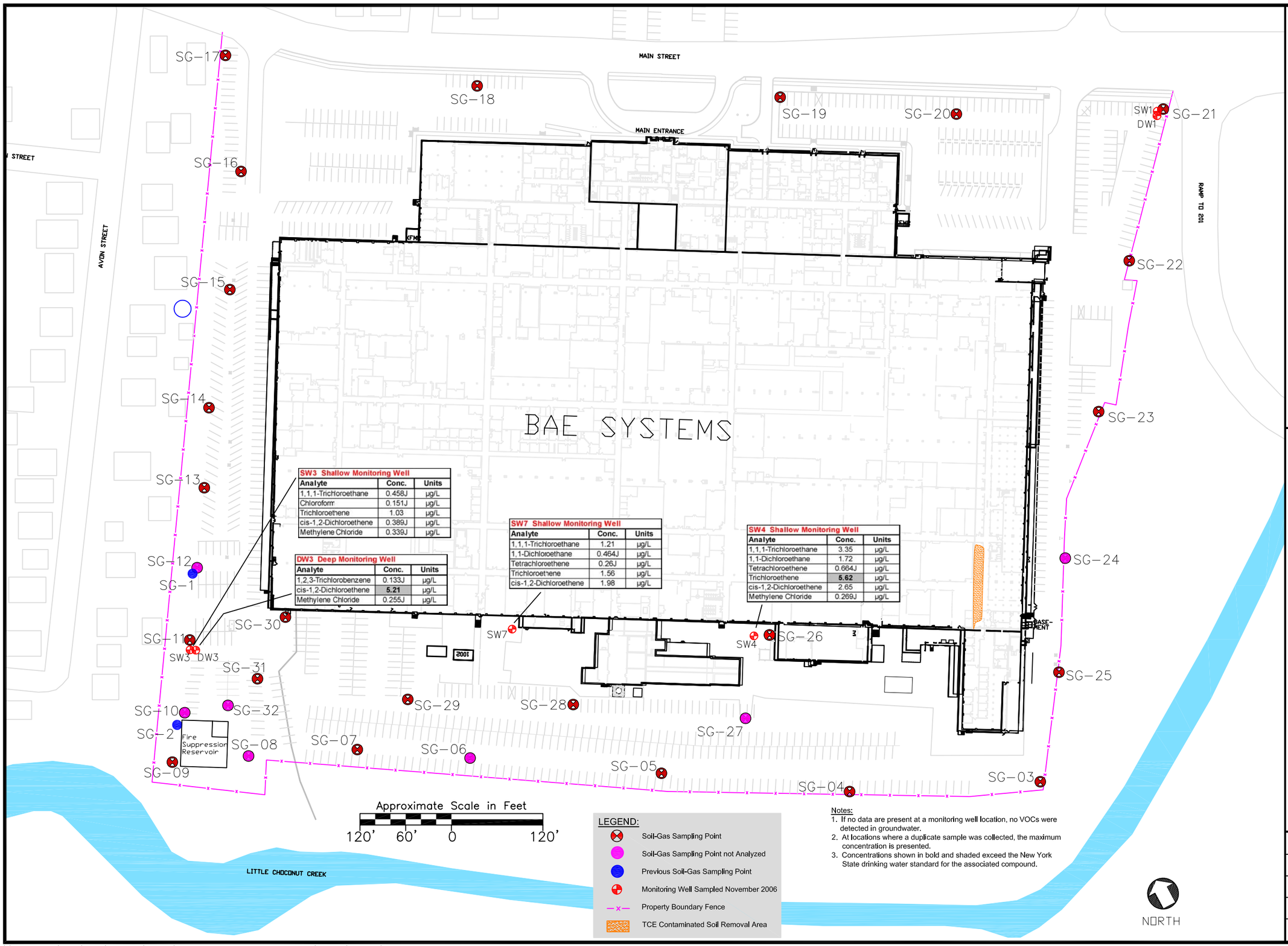
Table 3.1-1
Groundwater Data Summary for Volatile Organic Compounds (µg/L)

Parameters	Action Levels*	DW1 11/1/2006	DW3 11/1/2006	SW1 11/1/2006	SW3 11/1/2006	SW4 11/1/2006	SW7 11/1/2006	SW7 (DUP) 11/1/2006
1,1,1-Trichloroethane	5	--	--	--	0.458 J	3.35	1.19	1.21
1,1-Dichloroethane	5	--	--	--	--	1.72	0.429 J	0.464 J
1,2,3-Trichlorobenzene	5	--	0.133 J	--	--	--	--	--
Chloroform	5	--	--	--	0.151 J	--	--	--
cis-1,2-Dichloroethene	5	--	**5.21**	--	0.389 J	2.65	1.72	1.98
Methylene Chloride	5	--	0.255 J	--	0.339 J	0.269 J	--	--
Tetrachloroethene	5	--	--	--	--	0.664 J	--	0.26 J
Trichloroethene	5	--	--	--	1.03	**5.62**	1.43	1.56

Key: * = New York State Drinking Water Standard.
-- = Analyte was analyzed for but not detected.

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.

Note: Concentrations in bold font and shaded cells exceed the New York State Drinking Water Standard for the associated compound.



SW3 Shallow Monitoring Well

Analyte	Conc.	Units
1,1,1-Trichloroethane	0.458J	µg/L
Chloroform	0.151J	µg/L
Trichloroethene	1.03	µg/L
cis-1,2-Dichloroethene	0.389J	µg/L
Methylene Chloride	0.339J	µg/L

DW3 Deep Monitoring Well

Analyte	Conc.	Units
1,2,3-Trichlorobenzene	0.133J	µg/L
cis-1,2-Dichloroethene	**5.21**	µg/L
Methylene Chloride	0.255J	µg/L

SW7 Shallow Monitoring Well

Analyte	Conc.	Units
1,1,1-Trichloroethane	1.21	µg/L
1,1-Dichloroethane	0.464J	µg/L
Tetrachloroethene	0.26J	µg/L
Trichloroethene	1.56	µg/L
cis-1,2-Dichloroethene	1.98	µg/L

SW4 Shallow Monitoring Well

Analyte	Conc.	Units
1,1,1-Trichloroethane	3.35	µg/L
1,1-Dichloroethane	1.72	µg/L
Tetrachloroethene	0.664J	µg/L
Trichloroethene	**5.62**	µg/L
cis-1,2-Dichloroethene	2.65	µg/L
Methylene Chloride	0.269J	µg/L

Approximate Scale in Feet

120' 60' 0 120'

LEGEND:

- Soil-Gas Sampling Point
- Soil-Gas Sampling Point not Analyzed
- Previous Soil-Gas Sampling Point
- Monitoring Well Sampled November 2006
- Property Boundary Fence
- TCE Contaminated Soil Removal Area

Notes:

1. If no data are present at a monitoring well location, no VOCs were detected in groundwater.
2. At locations where a duplicate sample was collected, the maximum concentration is presented.
3. Concentrations shown in bold and shaded exceed the New York State drinking water standard for the associated compound.

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Figure 3.1-1

VOCs Detected in Groundwater
November, 2006

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Table 3.1-2
Volatile Organic Compounds Detected in Shallow Zone Groundwater Samples

Analyte	Number of Samples Above MDL	Range (µg/L)		Location of Maximum Detection
		Minimum Detected	Maximum Detected	
1,1,1-Trichloroethane	4 of 5	0.458J	3.35	SW4
1,1-Dichloroethane	3 of 5	0.429J	1.72	SW4
Chloroform	1 of 5	0.151J	0.151J	SW3
cis-1,2-Dichloroethene	4 of 5	0.389J	2.65	SW4
Methylene Chloride	2 of 5	0.269J	0.339J	SW3
Tetrachloroethene	2 of 5	0.26J	0.664J	SW4
Trichloroethene	4 of 5	1.03	5.62	SW4

Key: µg/L = Micrograms per liter

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.

Note: Only analytes detected in one or more of the groundwater samples are included in this summary table.

Table 3.1-3
Volatile Organic Compounds Detected in Deep Zone Groundwater Samples

Analyte	Number of Samples Above MDL	Range (µg/L)		Location of Maximum Detection
		Minimum Detected	Maximum Detected	
1,2,3-Trichlorobenzene	1 of 2	0.133J	0.133J	DW3
cis-1,2-Dichloroethene	1 of 2	5.21	5.21	DW3
Methylene Chloride	1 of 2	0.255J	0.255J	DW3

Key: µg/L = Micrograms per liter

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.

Note: Only analytes detected in one or more of the groundwater samples are included in this summary table.

DW3 was the only well in the deep zone of the aquifer where VOCs were detected. The following concentrations of VOCs were detected in DW3: cis-1,2-DCE at 5.21 µg/L, 1,2,3-trichlorobenzene at 0.133J µg/L, and methylene chloride at 0.255J µg/L. No VOCs were detected in the groundwater sample collected from monitoring well DW1.

3.1.3 Soil-Gas Data Summary

The number and locations of soil-gas samples are outlined below. Figure 2.1-1 shows the locations of the soil-gas points sampled during the October/November 2006 sampling event.

The following soil-gas points were sampled and analyzed for VOCs using USEPA Method TO15:

- SG-03, -04, -05, -07, -09, -11, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -25, -26, -28, -29, -30, and -31.
- SG-06, -08, -10, -12, -24, -27, and -32 were sampled but not analyzed. Soil-gas samples were collected from these locations using the same methodology as the other soil-gas samples. The lab attempted to analyze the samples and found that the SUMMA® canisters were still under partial vacuum. As a result, no analytical data was generated from these locations.

3.1.3.1 Volatile Organic Compounds Detected in Soil-Gas Samples

This section discusses the VOCs that were detected in the soil-gas samples. The analytical results for all soil-gas samples collected during the October/November 2006 sampling event are summarized in Table 3.1-4. VOCs detected in soil-gas samples are shown in Figure 3.1-2. Appendix E provides a complete listing of all soil-gas analytical results, including the analytical reporting limits (RLs) for all of the detected chemicals.

There were 13 VOCs detected in soil-gas samples. Eleven of the 13 maximum detections occurred in SG-09: 1,1,1-TCA at 251 µg/m^3, 1,1-DCA at 8.1 µg/m^3, benzene at 179 µg/m^3, chloroform at 9.8 µg/m^3, ethylbenzene at 69.5 µg/m^3, m,p-xylene at 243 µg/m^3, o-xylene at 74 µg/m^3, styrene at 17.5 µg/m^3, PCE at 19 µg/m^3, toluene at 294 µg/m^3, and TCE at 699 µg/m^3. Chloromethane was detected at a maximum concentration of 5.6 J µg/m^3 in SG-20 and SG-28. Methylene chloride was detected at a maximum concentration of 23.3 µg/m^3 in the duplicate sample from SG-31.

3.1.4 Groundwater Contaminant Trend Analysis

Table 3.1-5 presents concentrations of the most commonly detected chlorinated hydrocarbons in groundwater at AFP 59 over time. Only monitoring wells that were sampled as part of the groundwater monitoring program are included in this table. A trend analysis was not performed for the soil-gas data because there is no historical data. Trend analysis graphs of the wells sampled are provided in Appendix F.

Table 3.1-4
Soil-Gas Data Summary for Volatile Organic Compounds (µg/m^3)

Parameters	SG-03 10/30/2006	SG-04 10/30/2006	SG-05 10/30/2006	SG-07 10/30/2006	SG-09 10/30/2006	SG-11 10/30/2006	SG-13 10/30/2006
1,1,1-Trichloroethane	--	--	3 J	8.2 J	**251**	25.6	--
1,1-Dichloroethane	--	--	--	--	**8.1**	--	--
Benzene	3.5 J	--	1.8 J	5.1 J	**179**	--	2.4 J
Chloroform	--	--	--	2.7 J	**9.8**	--	--
Chloromethane	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	7.8 J	**70**	--	7 J
m,p-Xylene	8.3 J	4.3 J	4.8 J	27.4	**243**	3.5 J	27.4
Methylene Chloride	2.4 J	2.6 J	2.3 J	2.4 J	15.6 J	2.3 J	4.2 J
o-Xylene	3.1 J	--	--	9.6	**74**	--	9.6
Styrene	--	--	--	--	**17.5**	--	2.9 J
Tetrachloroethene	--	--	--	--	**19**	2.4 J	--
Toluene	7.5	3.8 J	5.7 J	68	**294**	3.3 J	21.1
Trichloroethene	--	--	1.8 J	--	**699**	33.3	--

Key: -- = Analyte was analyzed for but not detected.

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.

Note: Concentrations in bold font represent the maximum detection for the associated compound.

Units converted from ppb (v) to µg/m^3 using the formula: µg/m^3 = (ppbv * Molecular Weight) / 24.45

Table 3.1-4
Soil-Gas Data Summary for Volatile Organic Compounds (µg/m^3) (Continued)

Parameters	SG-14 10/30/2006	SG-15 10/30/2006	SG-16 10/30/2006	SG-17 10/30/2006	SG-17 (DUP) 10/30/2006	SG-18 10/30/2006	SG-18 (DUP) 10/30/2006
1,1,1-Trichloroethane	--	35	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--
Benzene	3.5 J	1.9 J	2 J	3.2 J	4.2 J	1.8 J	2.2 J
Chloroform	--	6.8 J	--	--	--	--	--
Chloromethane	--	--	--	--	--	--	--
Ethylbenzene	2.7 J	--	8.7	4.3 J	5.2 J	2.7 J	3.1 J
m,p-Xylene	10.4	7.4 J	34.3	15.2	17.4	9.6	11.3
Methylene Chloride	2.4 J	2.3 J	3.5 J	2.5 J	3.1 J	2.6 J	2.6 J
o-Xylene	3.8 J	2.7 J	12.2	5.2 J	7 J	3.5 J	4.3 J
Styrene	--	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	--	--
Toluene	10.6	7.5	45.2	19.6	23	9	11
Trichloroethene	--	10.8	--	--	--	--	--

Key: -- = Analyte was analyzed for but not detected.

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.

Note: Concentrations in bold font represent the maximum detection for the associated compound.

Units converted from ppb (v) to µg/m^3 using the formula: µg/m^3 = (ppbv * Molecular Weight) / 24.45

Table 3.1-4
Soil-Gas Data Summary for Volatile Organic Compounds (µg/m^3) (Continued)

Parameters	SG-19 10/30/2006	SG-20 10/30/2006	SG-21 10/30/2006	SG-22 10/30/2006	SG-23 10/30/2006	SG-25 10/31/2006	SG-26 10/31/2006
1,1,1-Trichloroethane	--	2.2 J	5.5 J	18.6	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--
Benzene	2.9 J	32	--	1.6 J	--	5.4 J	15.7
Chloroform	--	--	--	--	--	--	--
Chloromethane	4.8 J	**5.6 J**	--	--	--	--	--
Ethylbenzene	8.3 J	29.1	--	3 J	--	5.7 J	10.4
m,p-Xylene	31.7	109	4.8 J	11.3	4.3 J	19.5	39.1
Methylene Chloride	4.2 J	7.6 J	2.3 J	2.4 J	--	4.2 J	3.1 J
o-Xylene	10.9	37	--	4.3 J	--	7.8 J	14.3
Styrene	2.6 J	9.4	--	--	--	--	2.6 J
Tetrachloroethene	--	--	--	--	--	--	--
Toluene	25.6	98	4.2 J	8.3	4.2 J	25.6	52.8
Trichloroethene	--	--	--	--	1.8 J	2.2 J	--

Key: -- = Analyte was analyzed for but not detected.

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.

Note: Concentrations in bold font represent the maximum detection for the associated compound.

Units converted from ppb (v) to µg/m^3 using the formula: µg/m^3 = (ppbv * Molecular Weight) / 24.45

Table 3.1-4
Soil-Gas Data Summary for Volatile Organic Compounds (µg/m^3) (Continued)

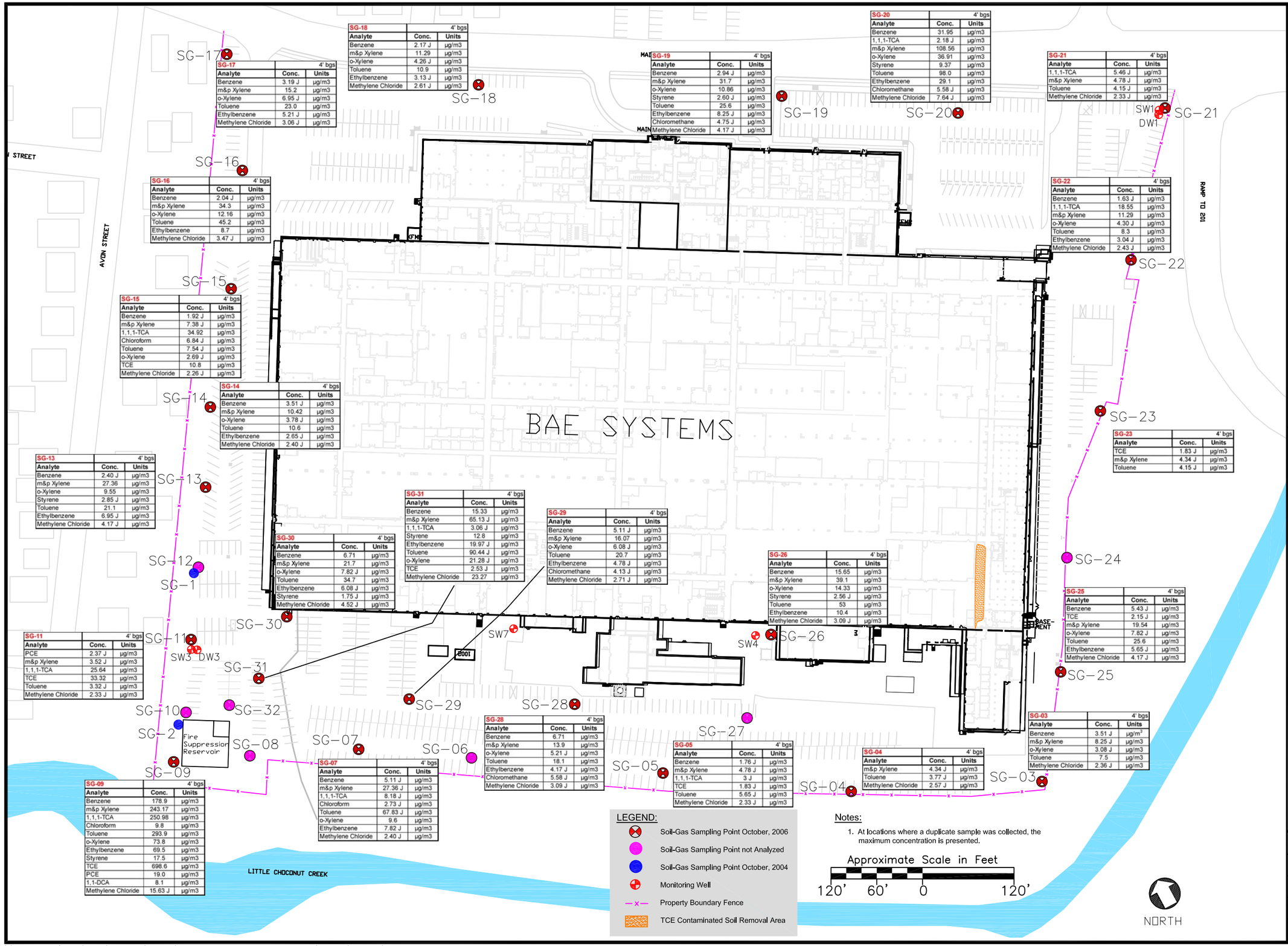
Parameters	SG-28 10/31/2006	SG-29 10/31/2006	SG-30 10/31/2006	SG-31 10/31/2006	SG-31 (DUP) 10/31/2006
1,1,1-Trichloroethane	--	--	--	2.5 J	3.1 J
1,1-Dichloroethane	--	--	--	--	--
Benzene	6.7	5.1 J	6.7	12.1	15.3
Chloroform	--	--	--	--	--
Chloromethane	**5.6 J**	4.1 J	--	--	--
Ethylbenzene	4.2 J	4.8 J	6.1 J	14 J	20 J
m,p-Xylene	14	16.1	21.7	47.8 J	65.1 J
Methylene Chloride	3.1 J	2.7 J	4.5 J	22	**23**
o-Xylene	5.2 J	6.1 J	7.8 J	15.2 J	21.3 J
Styrene	--	--	1.8 J	9.4	12.8
Tetrachloroethene	--	--	--	--	--
Toluene	18.1	20.7	34.7	67.8 J	90.4 J
Trichloroethene	--	--	--	2 J	2.5 J

Key: -- = Analyte was analyzed for but not detected.

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.

Note: Concentrations in bold font represent the maximum detection for the associated compound.

Units converted from ppb (v) to µg/m^3 using the formula: µg/m^3 = (ppbv * Molecular Weight) / 24.45



SG-17	4' bgs	
Analyte	Conc.	Units
Benzene	3.19 J	µg/m3
m&p Xylene	15.2	µg/m3
o-Xylene	6.95 J	µg/m3
Toluene	23.0	µg/m3
Ethylbenzene	5.21 J	µg/m3
Methylene Chloride	3.06 J	µg/m3

SG-16	4' bgs	
Analyte	Conc.	Units
Benzene	2.04 J	µg/m3
m&p Xylene	34.3	µg/m3
o-Xylene	12.16	µg/m3
Toluene	45.2	µg/m3
Ethylbenzene	8.7	µg/m3
Methylene Chloride	3.47 J	µg/m3

SG-15	4' bgs	
Analyte	Conc.	Units
Benzene	1.92 J	µg/m3
m&p Xylene	7.38 J	µg/m3
1,1,1-TCA	34.92	µg/m3
Chloroform	6.84 J	µg/m3
Toluene	7.54 J	µg/m3
o-Xylene	2.69 J	µg/m3
TCE	10.8	µg/m3
Methylene Chloride	2.26 J	µg/m3

SG-14	4' bgs	
Analyte	Conc.	Units
Benzene	3.51 J	µg/m3
m&p Xylene	10.42	µg/m3
o-Xylene	3.78 J	µg/m3
Toluene	10.6	µg/m3
Ethylbenzene	2.65 J	µg/m3
Methylene Chloride	2.40 J	µg/m3

SG-13	4' bgs	
Analyte	Conc.	Units
Benzene	2.40 J	µg/m3
m&p Xylene	27.36	µg/m3
o-Xylene	9.55	µg/m3
Styrene	2.85 J	µg/m3
Toluene	21.1	µg/m3
Ethylbenzene	6.95 J	µg/m3
Methylene Chloride	4.17 J	µg/m3

SG-18	4' bgs	
Analyte	Conc.	Units
Benzene	2.17 J	µg/m3
m&p Xylene	11.29	µg/m3
o-Xylene	4.26 J	µg/m3
Toluene	10.9	µg/m3
Ethylbenzene	3.13 J	µg/m3
Methylene Chloride	2.61 J	µg/m3

SG-19	4' bgs	
Analyte	Conc.	Units
Benzene	2.94 J	µg/m3
m&p Xylene	31.7	µg/m3
o-Xylene	10.86	µg/m3
Styrene	2.60 J	µg/m3
Toluene	25.6	µg/m3
Ethylbenzene	8.25 J	µg/m3
Chloromethane	4.75 J	µg/m3
Methylene Chloride	4.17 J	µg/m3

SG-20	4' bgs	
Analyte	Conc.	Units
Benzene	31.95	µg/m3
1,1,1-TCA	2.18 J	µg/m3
m&p Xylene	108.56	µg/m3
o-Xylene	36.91	µg/m3
Styrene	9.37	µg/m3
Toluene	98.0	µg/m3
Ethylbenzene	29.1	µg/m3
Chloromethane	5.58 J	µg/m3
Methylene Chloride	7.64 J	µg/m3

SG-21	4' bgs	
Analyte	Conc.	Units
1,1,1-TCA	5.46 J	µg/m3
m&p Xylene	4.78 J	µg/m3
Toluene	4.15 J	µg/m3
Methylene Chloride	2.33 J	µg/m3

SG-22	4' bgs	
Analyte	Conc.	Units
Benzene	1.63 J	µg/m3
1,1,1-TCA	18.55	µg/m3
m&p Xylene	11.29	µg/m3
o-Xylene	4.30 J	µg/m3
Toluene	8.3	µg/m3
Ethylbenzene	3.04 J	µg/m3
Methylene Chloride	2.43 J	µg/m3

SG-23	4' bgs	
Analyte	Conc.	Units
TCE	1.83 J	µg/m3
m&p Xylene	4.34 J	µg/m3
Toluene	4.15 J	µg/m3

SG-24	4' bgs	
Analyte	Conc.	Units
Benzene	5.43 J	µg/m3
TCE	2.15 J	µg/m3
m&p Xylene	19.54	µg/m3
o-Xylene	7.82 J	µg/m3
Toluene	25.6	µg/m3
Ethylbenzene	5.65 J	µg/m3
Methylene Chloride	4.17 J	µg/m3

SG-03	4' bgs	
Analyte	Conc.	Units
Benzene	3.51 J	µg/m3
m&p Xylene	8.25 J	µg/m3
o-Xylene	3.08 J	µg/m3
Toluene	7.5	µg/m3
Methylene Chloride	2.36 J	µg/m3

SG-04	4' bgs	
Analyte	Conc.	Units
m&p Xylene	4.34 J	µg/m3
Toluene	3.77 J	µg/m3
Methylene Chloride	2.57 J	µg/m3

SG-05	4' bgs	
Analyte	Conc.	Units
Benzene	1.76 J	µg/m3
m&p Xylene	4.78 J	µg/m3
1,1,1-TCA	3 J	µg/m3
TCE	1.83 J	µg/m3
Toluene	5.65 J	µg/m3
Methylene Chloride	2.33 J	µg/m3

SG-06	4' bgs	
Analyte	Conc.	Units
Benzene	6.71	µg/m3
m&p Xylene	13.9	µg/m3
o-Xylene	5.21 J	µg/m3
Toluene	18.1	µg/m3
Ethylbenzene	4.17 J	µg/m3
Chloromethane	5.58 J	µg/m3
Methylene Chloride	3.09 J	µg/m3

SG-07	4' bgs	
Analyte	Conc.	Units
Benzene	5.11 J	µg/m3
m&p Xylene	27.36 J	µg/m3
1,1,1-TCA	8.18 J	µg/m3
Chloroform	2.73 J	µg/m3
Toluene	67.83 J	µg/m3
o-Xylene	9.6	µg/m3
Ethylbenzene	7.82 J	µg/m3
Methylene Chloride	2.40 J	µg/m3

SG-08	4' bgs	
Analyte	Conc.	Units
Benzene	178.9	µg/m3
m&p Xylene	243.17	µg/m3
1,1,1-TCA	250.98	µg/m3
Chloroform	9.8	µg/m3
Toluene	293.9	µg/m3
o-Xylene	73.8	µg/m3
Ethylbenzene	69.5	µg/m3
Styrene	17.5	µg/m3
TCE	698.6	µg/m3
PCE	19.0	µg/m3
1,1-DCA	8.1	µg/m3
Methylene Chloride	15.63 J	µg/m3

SG-11	4' bgs	
Analyte	Conc.	Units
PCE	2.37 J	µg/m3
m&p Xylene	3.52 J	µg/m3
1,1,1-TCA	25.64	µg/m3
TCE	33.32	µg/m3
Toluene	3.32 J	µg/m3
Methylene Chloride	2.33 J	µg/m3

SG-30	4' bgs	
Analyte	Conc.	Units
Benzene	6.71	µg/m3
m&p Xylene	21.7	µg/m3
o-Xylene	7.82 J	µg/m3
Toluene	34.7	µg/m3
Ethylbenzene	6.08 J	µg/m3
Styrene	1.75 J	µg/m3
Methylene Chloride	4.52 J	µg/m3

SG-31	4' bgs	
Analyte	Conc.	Units
Benzene	15.33	µg/m3
m&p Xylene	65.13 J	µg/m3
1,1,1-TCA	3.06 J	µg/m3
Styrene	12.8	µg/m3
Ethylbenzene	19.97 J	µg/m3
Toluene	90.44 J	µg/m3
o-Xylene	21.28 J	µg/m3
TCE	2.53 J	µg/m3
Methylene Chloride	23.27	µg/m3

SG-29	4' bgs	
Analyte	Conc.	Units
Benzene	5.11 J	µg/m3
m&p Xylene	16.07	µg/m3
o-Xylene	6.08 J	µg/m3
Toluene	20.7	µg/m3
Ethylbenzene	4.78 J	µg/m3
Chloromethane	4.13 J	µg/m3
Methylene Chloride	2.71 J	µg/m3

SG-26	4' bgs	
Analyte	Conc.	Units
Benzene	15.65	µg/m3
m&p Xylene	39.1	µg/m3
o-Xylene	14.33	µg/m3
Styrene	2.56 J	µg/m3
Toluene	53	µg/m3
Ethylbenzene	10.4	µg/m3
Methylene Chloride	3.09 J	µg/m3

SG-09	4' bgs	
Analyte	Conc.	Units
Benzene	178.9	µg/m3
m&p Xylene	243.17	µg/m3
1,1,1-TCA	250.98	µg/m3
Chloroform	9.8	µg/m3
Toluene	293.9	µg/m3
o-Xylene	73.8	µg/m3
Ethylbenzene	69.5	µg/m3
Styrene	17.5	µg/m3
TCE	698.6	µg/m3
PCE	19.0	µg/m3
1,1-DCA	8.1	µg/m3
Methylene Chloride	15.63 J	µg/m3

LEGEND:

- Soil-Gas Sampling Point October, 2006
- Soil-Gas Sampling Point not Analyzed
- Soil-Gas Sampling Point October, 2004
- Monitoring Well
- Property Boundary Fence
- TCE Contaminated Soil Removal Area

Notes:

1. At locations where a duplicate sample was collected, the maximum concentration is presented.

Approximate Scale in Feet

120' 60' 0 120'

NORTH

EarthTech
A Tyco International Ltd. Company
675 N. Washington Street, Suite 300, Alexandria VA 22314
Phone: 703.549.8728 Fax: 703.549.9134 earthtech.com

Air Force Plant 59 – Johnson City, New York

Figure 3.1-2
VOCs Detected in Soil-Gas
October, 2006

CONTRACT NO.	TASK NO.
F41624-03-D-8597	0188
DESIGNED BY: P. Granger	DRAWN BY: P. Granger
CHECKED BY:	DATE: Nov 29, 2006
SCALE: 1" = 120'	SHEET: 1 of 1

Soil-Gas Detects 10-06 .dwg

\\USWDCS01\data\work\Projects\AFP59\94679 AFP 59 Soil Vapor Study\Report\Figures\Soil-Gas Detects 10-06.dwg

Table 3.1-5
Trend Analysis of Volatile Organic Compounds in Groundwater

Well ID	Date Sampled	Concentration of Analyte in Groundwater (µg/L)					
		TCA	TCE	VC	1,1-DCE	1,2-DCE	1,1-DCA
SW1	Sept. 1986[1]	--	--	--	--	--	--
	Jan. 1992[2]	0.5	--	--	--	--	--
	Dec. 1994[3]	--	--	--	--	--	--
	Nov. 1999[3]	--	--	--	--	--	--
	May 2000[3]	--	--	--	--	--	--
	Nov. 2000[3]	--	--	--	--	--	--
	May 2001[3]	--	--	--	--	--	--
	Nov. 2001[3]	0.11 J	--	--	--	--	--
	May 2002[3]	--	--	--	--	--	--
	May 2003[3]	--	--	--	--	--	--
	Nov. 2003[3]	--	--	--	--	--	--
	Jun. 2004[3]	--	--	--	--	--	--
	Nov. 2004[3]	--	--	--	--	--	--
	Oct. 2005[3]	--	--	--	--	--	--
	Oct. 2006[3]	--	--	--	--	--	--
DW1	Jan. 1992[2]	0.6	--	--	--	--	--
	Dec. 1994[3]	--	--	--	--	1.8 (c)	--
	Nov. 1999[3]	--	--	--	--	--	--
	May 2000[3]	--	--	--	--	--	--
	Nov. 2000[3]	--	--	--	--	--	--
	May 2001[3]	--	--	--	--	--	--
	Nov. 2001[3]	--	--	--	--	--	--
	May 2002[3]	--	--	--	--	--	--
	May 2003[3]	--	--	--	--	--	--
	Nov. 2003[3]	--	--	--	--	--	--
	Jun. 2004[3]	--	--	--	--	--	--
	Nov. 2004[3]	--	--	--	--	--	--
	Oct. 2005[3]	--	--	--	--	--	--
	Oct. 2006[3]	--	--	--	--	--	--

Table 3.1-5
Trend Analysis of Volatile Organic Compounds in Groundwater (Continued)

Well ID	Date Sampled	Concentration of Analyte in Groundwater (µg/L)					
		TCA	TCE	VC	1,1-DCE	1,2-DCE	1,1-DCA
SW3	Sept. 1986[1]	--	**6**	--	--	--	--
	Jan. 1992[2]	**12**	**9**	--	--	--	**5**
	Dec. 1994[3]	0.50	1.8	--	--	--	--
	Dec. 1995[3]	0.86	2.8	--	--	0.44 (c)	--
	July 1997[4]	--	1	--	--	--	--
	Nov. 1998[3]	0.22	0.81	--	--	0.10 (c)	--
	Apr. 1999[3]	0.51	0.71	--	--	0.17 (c)	--
	Nov. 1999[3]	0.29	0.9	--	--	0.39 (c)	--
	May 2000[3]	0.69	1	--	--	1.29 (c)	0.55
	Nov. 2000[3]	0.43	0.9	--	--	0.22 (c)	--
	May 2001[3]	0.46	0.8	--	--	1.29 (c)	0.32
	Nov. 2001[3]	0.32 J	0.5 J	--	--	--	--
	May 2002[3]	0.42 J	0.8 J	--	--	0.46 J	--
	May 2003[3]	0.584 J	0.893 J	--	--	1.37 J (c)	0.302 J
	Nov. 2003[3]	0.398 J	0.856 J	--	--	0.511 J (c)	--
	Jun. 2004[3]	0.9 J	0.94 J	--	--	3.7 (c)	0.95 J
	Nov. 2004[3]	0.52 J	1.0	0.26 J	--	1.5 (c)	0.38 J
	Oct. 2005[3]	0.47 J	0.86 J	--	--	0.55 J (c)	--
	Oct. 2006[3]	0.458 J	1.03	--	--	0.389 J (c)	--
DW3	Jan. 1992[2]	0.3	--	--	--	--	0.3
	Dec. 1994[3]	--	--	0.28	--	**36 (c)**	0.26
	Dec. 1995[3]	--	--	--	--	**5.2 (c)**	--
	April 1997[4]	--	--	--	--	**41 (c)**	--
	July 1997[4]	--	--	--	--	**49 (c)**	--
	Nov. 1998[3]	--	--	0.35	--	**66 (c)**	0.34
	Apr. 1999[3]	--	--	0.28	0.11	**67 (c)**	0.35
	Nov 1999[3]	--	--	--	--	--	0.11
	May 2000[3]	--	--	--	--	0.25 (t) **24.98 (c)**	0.16
	Nov. 2000[3]	--	--	--	--	**16.85 (c)**	--
	May 2001[3]	--	--	--	--	**13.29 (c)**	--

Table 3.1-5
Trend Analysis of Volatile Organic Compounds in Groundwater (Continued)

Well ID	Date Sampled	Concentration of Analyte in Groundwater (µg/L)					
		TCA	TCE	VC	1,1-DCE	1,2-DCE	1,1-DCA
DW3 (cont'd)	Nov. 2001[3]	--	--	--	--	**13.58 (c)**	--
	May 2002[3]	--	--	--	--	**21.08 (c)**	0.1 J
	May 2003[3]	--	--	--	--	--	--
	Nov. 2003[3]	--	--	--	--	1.18 J (c)	--
	Jun. 2004[3]	--	--	--	--	1.3 (c)	--
	Nov. 2004[3]	--	--	--	--	2.1 (c)	--
	Oct. 2005[3]	--	--	--	--	3 (c)	--
	Oct. 2006[3]	--	--	--	--	**5.21 (c)**	--
SW4	Jan. 1992[2]	2	**97**	--	0.3	--	0.6
	Dec. 1994[3]	**20**	**370**	--	2.1	**19 (c)**	**8.5**
	Dec. 1995[3]	**34**	**1200**	--	4.9	2.1 (t) **34 (c)**	**6.9**
	April 1997[4]	--	--	--	--	**71 (c)**	**7.1**
	July 1997[4]	**23**	**290**	--	--	**15 (c)**	--
	Nov. 1998[3]	**8.0**	**46**	0.42	0.82	**10 (c)**	**9.0**
	Apr. 1999[3]	1.9	**9.53**	--	--	1.85 (c)	0.87
	Nov. 1999[3]	2.13	**9.5**	--	0.18	**7.15·(c)**	**7.7**
	May 2000[3]	2.88	**8**	0.11	0.21	0.49 (t) 4.3 (c)	1.67
	Nov. 2000[3]	1.14	**15.2**	1.49	0.29	**11.18 (c)**	**15.25**
	May 2001[3]	3.35	**34**	--	0.36	0.38 (t) 3.19 (c)	1.3
	Nov. 2001[3]	0.88	**5.7**	0.43 J	0.12 J	**5.27 (c)**	**7.18**
	May 2002[3]	2.54	**21.63**	--	0.34 J	2.07 (c)	0.79 J
	May 2003[3]	3.05 J	**9.09 J**	--	--	3.36 J (c)	1.44 J
	Nov. 2003[3]	2.03	4.63	--	--	1.93 (c)	0.93
	Jun. 2004[3]	2.8	**41**	--	0.57 J	0.11 (t) 3.3 (c)	1.3
	Nov. 2004[3]	3.1	**56**	--	0.88 J	0.19 J (t) 4.1(c)	1.4
	Oct. 2005[3]	2.2	**43**	--	1	**6.3 (c)**	1.7
	Oct. 2006[3]	3.35	**5.62**	--	--	2.65 (c)	1.72

Table 3.1-5
Trend Analysis of Volatile Organic Compounds in Groundwater (Continued)

Well ID	Date Sampled	Concentration of Analyte in Groundwater (µg/L)					
		TCA	TCE	VC	1,1-DCE	1,2-DCE	1,1-DCA
SW7	Jan. 1992[2]	0.2	0.4	--	--	--	--
	Dec. 1994[3]	4.6	**15**	**6.2**	1	0.3(t) **150(c)**	33
	Dec. 1995[3]	2.2	**7.9**	**6.8**	0.80	**130 (c)**	20
	July 1997[4]	--	4	--	--	2 (c)	--
	Nov. 1998[3]	2.5	**11**	**3.4**	0.65	0.28 (t) **82 (c)**	12
	Apr. 1999[3]	1.23	3.95	--	--	**5.25 (c)**	1.46
	Nov. 1999[3]	1.01	**5.7**	--	0.19	**18.8·(c)**	3.38
	May 2000[3]	0.67	1.5	--	--	0.12 (t) 2.43 (c)	0.71
	Nov. 2000[3]	0.91	3.8	0.52	0.15	**16.06 (c)**	3.48
	May 2001[3]	1.18	1.9	--	--	1.46 (c)	0.47
	Nov. 2001[3]	0.8 J	4.7	0.85 J	0.19 J	0.13 J (t) **25.89 (c)**	3.02
	May 2002[3]	0.87 J	1.65	--	--	2.79 (c)	0.47 J
	May 2003[3]	1.5 J	1.44 J	--	--	1.43 J (c)	0.409 J
	Nov. 2003[3]	0.674 J	1.64	--	--	2.76 (c)	0.509
	Jun. 2004[3]	1	1	--	--	1.1 (c)	0.3 J
	Nov. 2004[3]	1.5	2.1	0.47 J	0.25 J	**10 J (c)**	1.5 J
	Oct. 2005[3]	0.73 J	3.1	--	--	**12 (c)**	1.4
	Oct. 2006[3]	1.21	1.56	--	--	1.98 (c)	0.464 J

Key:

µg/L	=	Micrograms per liter	VC	=	Vinyl chloride
(c)	=	cis-1,2-Dichloroethene	1,1-DCE	=	1,1-Dichloroethene
(t)	=	trans-1,2-Dichloroethene	1,2-DCE	=	1,2-Dichloroethene
TCA	=	1,1,1-Trichloroethane	1,1-DCA	=	1,1-Dichloroethane
TCE	=	Trichloroethene	DPW	=	Deep production well
(1)	=	Fred C. Hart Associates	(3)	=	Earth Tech
(2)	=	Argonne National Laboratories	(4)	=	United States Geological Services

Notes:

1. At monitoring well locations where a duplicate groundwater sample was collected, the higher analytical value between the normal and duplicate samples is reported in this table.
2. For 1992 data, the maximum value of either round A or B of sampling was used.
3. Concentrations in bold font exceed the New York State Drinking Water Standard for the associated compound.

In the groundwater samples collected from the monitoring wells during the October 2006 sampling event, concentrations of chlorinated hydrocarbons in monitoring wells SW1, DW1, SW3, and DW 3 remained relatively constant, showing only slight variations when compared to the previous sampling event of October 2005.

The concentrations of the chlorinated hydrocarbons in monitoring well SW4 remained relatively constant with the exception of TCE, which dropped from 43 µg/L to 5.62 µg/L when compared to the October 2005 sampling event. The concentrations of the chlorinated hydrocarbons in monitoring well SW7 remained relatively constant with the exception of cis-1,2-DCE, which dropped from 12 µg/L to 1.98 µg/L when compared to the October 2005 sampling event.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

This section provides conclusions from analytical data generated as a result of the October/November 2006 sampling event. As defined in Section 1.0, the objective of this sampling event was to monitor the effects of the TCE contaminated soil removal on the groundwater at AFP 59, to define the extent of elevated VOC contamination in soil gas and determine if soil-gas VOC contamination is moving to AFP 59 from another source and/or moving from AFP 59, and to determine if there is a correlation between VOC contamination in groundwater and soil gas.

The VOCs detected in groundwater samples collected from monitoring wells during the October 2006 sampling event are similar to the VOCs that had been detected during previous investigations. TCE, 1,1,1-TCA, 1,1-DCA, PCE, and cis-1,2-DCE were the most commonly detected contaminants during this sampling event. No VOCs were detected in background monitoring wells SW1 and DW1.

Historically, the highest concentrations of VOCs in the shallow zone of the aquifer at AFP 59 have been detected in groundwater samples collected from monitoring wells SW4 and SW7, which are located immediately downgradient of the Plating Room. In October 2006, the highest concentrations of VOCs were detected in SW3, SW4, and DW3. The concentrations of TCE detected at SW4 and cis-1,2-DCE detected at SW7 were significantly lower than concentrations detected during the October 2005 event. The concentrations of TCE in SW4 (5.62 µg/L) and cis-1,2-DCE in DW3 (5.21 J µg/L) were the only VOC detections that exceeded New York State Drinking Water Standards in any of the wells monitored during the October 2006 sampling event.

A trend analysis of chlorinated hydrocarbon levels over time at AFP 59 is presented in Section 3.1.6. The October 2006 sampling event was consistent with previous events and indicates that levels of chlorinated hydrocarbons have remained relatively constant or decreased through time (Refer to Table 3.1-5).

The analytical data generated during the October 2006 sampling event indicate that the July 2005 soil removal action has had no negative impact to the groundwater quality at AFP 59.

Soil-gas samples were taken around the entire perimeter of the AFP 59 property and close to the southern side of the manufacturing plant, near the areas of the highest groundwater VOC concentrations (Figure 2.1-1). Soil-gas sample SG-09 in the southwestern corner of the property had the highest levels of VOC contaminants, which was consistent with the soil-gas samples collected in October 2004. There were a number of soil-gas samples (SG-05, -07, -26, -28, -29, -30 and -31) collected closer to the area with the highest concentration of groundwater VOC contamination that showed little to no chlorinated VOC contamination. SG-26 was taken within

a few feet of monitoring well SW4 (historically the most contaminated of the monitoring wells) and had no detections of the chlorinated VOCs most commonly seen in groundwater.

The highest concentrations of soil-gas VOC contaminants are located along the southwestern border of the property boundary (Figure 3.1-2), not upgradient from or directly next to the manufacturing facility. The soil-gas data suggest that the low-level groundwater contaminant plume associated with the AFP 59 manufacturing facility is not the source of the soil-gas contamination on site. No soil-gas samples were collected off site to the south and west of SG-09.

4.2 RECOMMENDATIONS

The *Record of Decision* (Earth Tech, 1999b) established a LTM program for AFP 59. The 5-year LTM program, defined in the April 27, 1999 letter to the NYSDEC (Earth Tech, 1999a), was concluded with the November 2004 sampling event. The Air Force agreed to conduct two additional rounds of groundwater sampling after the excavation of TCE contaminated soil in the east basement. The October 2006 sampling event concluded this agreement.

Long-term monitoring of groundwater has shown that contaminant concentrations at AFP 59 have decreased over time and are at or below the New York State drinking water standards. The removal of TCE contaminated soils in the east basement of the manufacturing facility has had no adverse effect on groundwater contaminant concentrations, which have continued to decline since the time of the excavation. Therefore, it is recommended that the groundwater monitoring program be discontinued.

However, based on input from the NYSDEC and NYSDOH, a more comprehensive vapor intrusion investigation is recommended. Potential components of a soil vapor intrusion investigation include: re-sampling soil-gas locations where samples were not collected in 2006 (i.e., SG-6, -8, -9, -10, -12, -24 and -32); collecting soil-gas and indoor air samples in the east basement and then an indoor air sample on the main floor of the plant immediately above the basement samples; collecting co-located sub-slab and indoor air samples inside the building at various locations; collecting ambient air samples for background; and collecting an ambient air sample around the reservoir.

At the completion of vapor intrusion-related activities, it is recommended that one additional round of groundwater samples be collected to confirm the results of the groundwater monitoring program and the vapor intrusion-related activities. If the groundwater monitoring results support taking the monitoring wells out of service, the Air Force will consider decommissioning the wells under the guidance of the NYSDEC.

APPENDIX A
References

APPENDIX A
REFERENCES

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APPENDIX B
Field Data

AFP 59
MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: AFP 59	LocID: DW-1	Date: 11/1/06
	Project Name: AFP 59 GW Sampling	Project No.: 94679.07	Recorded By: ~~TC~~ Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-22 #10-244	Water Level Indicator Type/ID #: Solinst #122-1001	PID Type/ID #: -
	Explosimeter Type/ID #: -	Sampling Equipment: Bailer	Equipment Decon.: Liquinox + DI
WELL INFO	Borehole I.D. (in) [a]: 6"	Unit Borehole Volume (gal/lin ft) [b]: 1.5	Initial Depth to Water (ft) [c]: 15.90
	Total Well Depth (ft) [d]: 62.75	Water Column Thickness (ft) [d-c]: 46.85	Borehole Volume (gal) {[d-c] x b}: 70.28x3 = 210.86
	Pump Depth (ft btoc): 60'	Ground Condition of Well:	
	Remarks:		

CASING INFO										
	Borehole I.D. (in) [a]:	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	8.0
	Unit Borehole Volume (gal/lin ft) [b]:	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.6

Pump started @ 705

Date	Time (24 hr)	Water Level (FTOC)	Volume Removed (Gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conduc-tivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
11/1/06	0710	15.90	15	3.0	12.88	8.06	1.58	0.41	49.9	125	
	0715	—①	30	3	12.87	8.15	1.58	0.66	20.8	117	
	0720	—①	45	3	12.88	8.17	1.58	0.69	24.8	115	
	0725	—①	60	3	12.86	8.20	1.58	0.73	1.7	113	
	0730	—①	75	3	12.86	8.21	1.58	0.74	1.1	112	
	0735	—①	90	3	12.88	8.23	1.58	0.75	0.9	112	
	0740	—①	105	3	12.88	8.23	1.58	0.76	1.4	112	
	0745	—①	120	3	12.88	8.22	1.58	0.78	3.2	112	
	0750	—①	135	3	12.87	8.22	1.58	0.79	3.9	114	
	0755	—①	150	3	12.88	8.22	1.58	0.79	3.8	114	
	0800	—①	165	3	12.88	8.22	1.58	0.81	2.7	115	
	0805	—①	180	3	12.86	8.22	1.58	1.50	2.4	115	

Pump Rate: <= 3 GPM **Drawdown:** < 0.33 ft **Measurements:** 3-5 min **Stabilization:** +/- 0.5 C, +/- 0.1 pH, +/- 3% conductivity, +/- 10% DO, +/- 10mv ORP, +/- 10% turb (<= 10 NTU ideal) for 3 consecutive readings

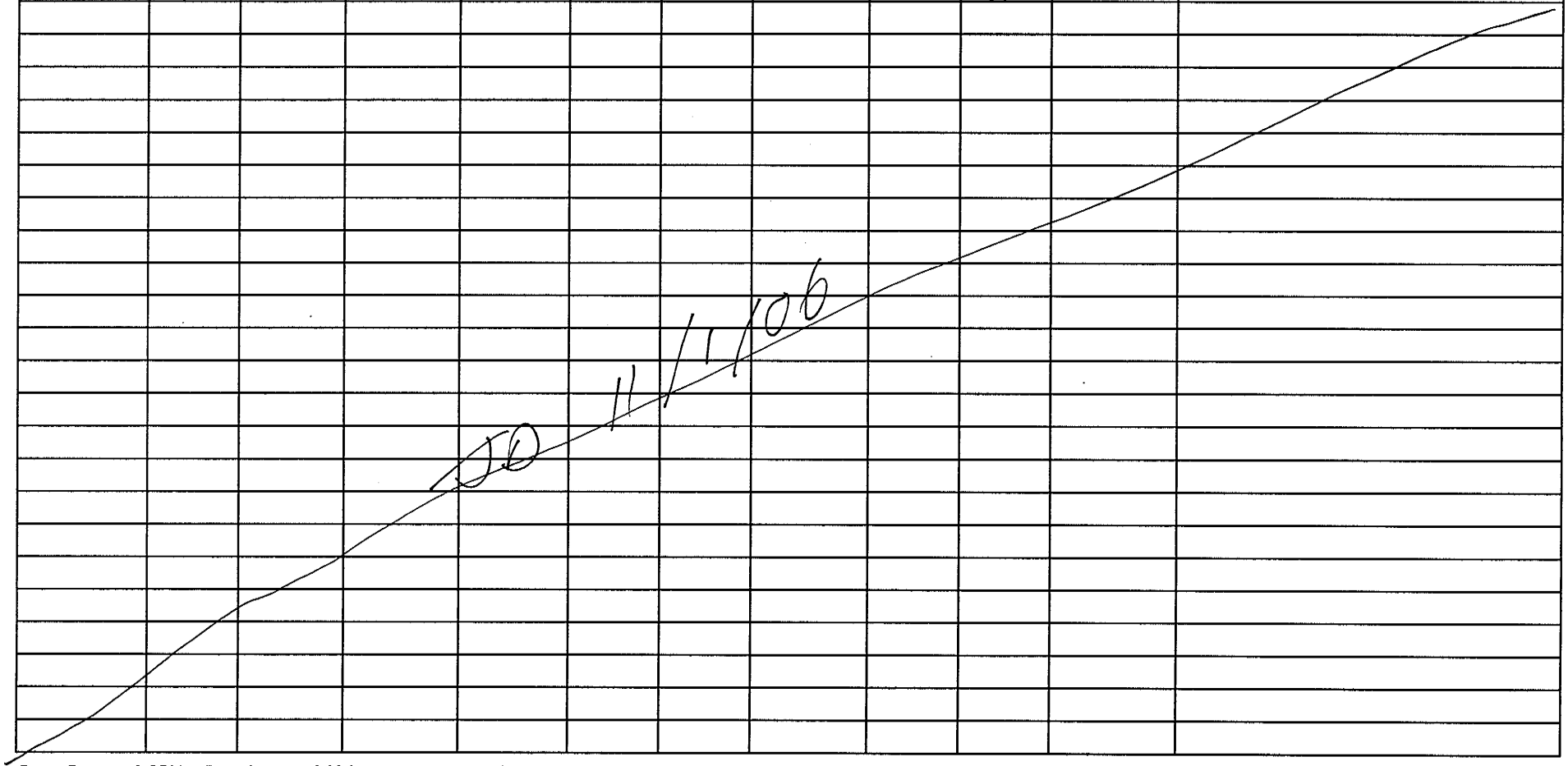
① Solinst batteries weak - went to get new ones - no meas. taken. JD 11/1/06; New batteries didn't work - will go off past data for flow settings. JD 11/1/06

Sample ID #(s)/Time(s)	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
~~0820~~ 0830 59DW1WG1	3 - 40 mL glass vials	HCl	N	Bailer	Volatiles (SW8260)

AFP 59
MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: AFP-59	LocID: DW-1
	Project Name: AFP 59 GW Sampling	Project No: 94679.07

Date	Time (24 hr)	Water Level (FTOC)	Volume Removed (Gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conduc-tivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
11/1/06	0810	—0	195	3	12.87	8.22	1.58	1.13	2.1	116	
11/1/06	0815	—0	210	3	12.88	8.22	1.58	1.04	2.1	116	



Pump Rate: <= 3 GPM **Drawdown:** < 0.33 ft **Measurements:** 3-5 min **Stabilization:** +/- 0.5 C, +/- 0.1 pH, +/- 3% conductivity, +/- 10% DO, +/- 10mv ORP, +/- 10% turb (<= 10 NTU ideal) for 3 consecutive readings

AFP 59
MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: AFP 59	LocID: SW-1	Date: 11/1/06
	Project Name: AFP 59 GW Sampling	Project No.: 94679.07	Recorded By: JD Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-22 #10-244	Water Level Indicator Type/ID #: Solinst #122-1001	PID Type/ID #: —
	Explosimeter Type/ID #: —	Sampling Equipment: Bailer	Equipment Decon.: Liquinox / DI
WELL INFO	Borehole I.D. (in) [a]: 8.0	Unit Borehole Volume (gal/lin ft) [b]: 2.6	Initial Depth to Water (ft) [c]: 15.91
	Total Well Depth (ft) [d]: 28.63	Water Column Thickness (ft) [d-c]: 12.72	Borehole Volume (gal) {[d-c] x b}: 33.07x3=99.21
	Pump Depth (ft btoc): 26	Ground Condition of Well: Good	
	Remarks:		

CASING INFO										
Borehole I.D. (in) [a]:	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	8.0
Unit Borehole Volume (gal/lin ft) [b]:	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.6

Pump Started @ 0850

Date	Time (24 hr)	Water Level (FTOC)	Volume Removed (Gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conduc-tivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
11/1/06	0855	15.91	15	3.0	13.90	8.16	1.76	7.61	26.2	95	
	0900	—	30	3.0	13.88	8.16	1.77	4.53	8.8	95	Solinst stopped working
	0905	—	45	3.0	13.89	8.14	1.77	2.51	7.8	95	after initial WL measurement
	0910	—	60	3.0	13.90	8.13	1.77	1.19	3.3	95	
	0915	—	75	3.0	13.90	8.12	1.77	0.50	3.1	94	
	0920	—	90	3.0	13.89	8.11	1.77	0.06	2.8	94	
	0925	—	105	3.0	13.89	8.18	1.77	0.00	3.1	91	
	0930	—	120	3.0	13.90	8.22	1.80	0.00	2.0	89	
	JD	11/1/06									

Pump Rate: <= 3 GPM **Drawdown:** < 0.33 ft **Measurements:** 3-5 min **Stabilization:** +/- 0.5 C, +/- 0.1 pH, +/- 3% conductivity, +/- 10% DO, +/- 10mv ORP, +/- 10% turb (<= 10 NTU ideal) for 3 consecutive readings

Sample ID #(s)/Time(s)	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
0940 595W1WG1	3 - 40 mL glass vials	HCl	N	Bailer	Volatiles (SW8260)
				▼	

AFP 59
MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: AFP 59	LocID: SW3	Date: 11/1/06
	Project Name: AFP 59 GW Sampling	Project No.: 94679.07	Recorded By: PG Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-22 10244	Water Level Indicator Type/ID #: Solinst 122-1001	PID Type/ID #: —
	Explosimeter Type/ID #: —	Sampling Equipment: bailer	Equipment Decon.: Liquinox + DI
WELL INFO	Borehole I.D. (in) [a]: 8.0	Unit Borehole Volume (gal/lin ft) [b]: 2.6	Initial Depth to Water (ft) [c]: 14.13
	Total Well Depth (ft) [d]: 29.82	Water Column Thickness (ft) [d-c]: 15.69	Borehole Volume (gal) {[d-c] x b}: 40.8 x 3 = 121.2
	Pump Depth (ft btoc): 28.5	Ground Condition of Well: Good	
	Remarks:		

CASING INFO										
Borehole I.D. (in) [a]:	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	8.0
Unit Borehole Volume (gal/lin ft) [b]:	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.6

start pump @ 1015

Date	Time (24 hr)	Water Level (FTOC)	Volume Removed (Gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conduc-tivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
11/1/06	1020	14.13	0	3.0	17.95	8.54	0.726	4.90	106.0	102	Solinst not working
	1025	—	15	3.0	18.01	8.50	0.724	5.02	82.3	95	
	1030	—	30	3.0	18.01	8.50	0.722	5.07	75.7	104	
	1035	—	45	3.0	18.00	8.52	0.720	5.06	85.0	109	
	1040	—	60	3.0	17.99	8.52	0.719	5.06	53.7	117	
	1045	—	75	3.0	17.99	8.51	0.715	7.15	0.0	120	cleaned Horiba Probes
	1050	—	90	3.0	17.99	8.47	0.716	5.83	0.0	129	
	1055	—	105	3.0	17.98	8.46	0.716	5.38	0.0	133	
	1100	—	120	3.0	17.96	8.52	0.716	5.17	0.0	137	
	1105	—	135	3.0	17.96	8.51	0.716	5.06	0.1	142	

Pump Rate: <= 3 GPM **Drawdown:** < 0.33 ft **Measurements:** 3-5 min **Stabilization:** +/- 0.5 C, +/- 0.1 pH, +/- 3% conductivity, +/- 10% DO, +/- 10mv ORP, +/- 10% turb (<= 10 NTU ideal) for 3 consecutive readings

Sample ID #(s)/Time(s)	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
1115 595W3WG1 + MS/MSD	3 - 40 mL glass vials	HCl	N	Bailer	Volatiles (SW8260)
				↓	
				↓	

AFP 59
MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: AFP 59	LocID: DW3	Date: 11/1/06
	Project Name: AFP 59 GW Sampling	Project No.: 94679.07	Recorded By: PG Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-22 10244	Water Level Indicator Type/ID #: Solinst 122-100'	PID Type/ID #: —
	Explosimeter Type/ID #: —	Sampling Equipment: Bailer	Equipment Decon.: Liquinox + DI
WELL INFO	Borehole I.D. (in) [a]: 6"	Unit Borehole Volume (gal/lin ft) [b]: 1.5	Initial Depth to Water (ft) [c]: 12.20
	Total Well Depth (ft) [d]: 86.80	Water Column Thickness (ft) [d-c]: 74.60	Borehole Volume (gal) {[d-c] x b}: 121.9 x 3 = 365.7
	Pump Depth (ft btoc): 84	Ground Condition of Well: Good	
	Remarks:		

CASING INFO										
	Borehole I.D. (in) [a]:	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	8.0
	Unit Borehole Volume (gal/lin ft) [b]:	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.6

Pump start @ 1130

Date	Time (24 hr)	Water Level (FTOC)	Volume Removed (Gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conduc-tivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
11/1/06	1140	12.20	30	3.0	13.96	8.27	1.24	0.65	108	-92	
	1145	—	45	3.0	13.98	8.30	1.23	0.00	90.2	-95	Solinst not working after
	1150	—	60	3.0	13.96	8.31	1.24	0.00	115.0	-97	initial WL readings
	1155	—	75	3.0	13.95	8.32	1.24	0.00	163.0	-99	
	1200	—	90	3.0	13.96	8.31	1.23	0.00	156.0	-99	
	1205	—	105	3.0	13.95	8.30	1.23	0.00	59.8	-99	
	1210	—	120	3.0	13.94	8.29	1.23	0.00	30.5	-99	
	1215	—	135	3.0	13.95	8.29	1.24	0.00	12.0	-100	
	1220	—	150	3.0	13.95	8.29	1.24	0.00	8.7	-106	
	1225	—	165	3.0	13.95	8.27	1.24	0.00	8.0	-100	
	1230	—	180	3.0	13.94	8.31	1.24	0.00	8.9	-102	
	1235	—	195	3.0	13.94	8.36	1.24	0.00	12.0	-104	

Pump Rate: <= 3 GPM **Drawdown:** < 0.33 ft **Measurements:** 3-5 min **Stabilization:** +/- 0.5 C, +/- 0.1 pH, +/- 3% conductivity, +/- 10% DO, +/- 10mv ORP, +/- 10% turb (<= 10 NTU ideal) for 3 consecutive readings

Sample ID #(s)/Time(s)	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
1345 59DW3WG1	3 - 40 mL glass vials	HCl	N	Bailer	Volatiles (SW8260)

AFP 59
MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: AFP 59	LocID: DW3
	Project Name: AFP 59	Project No: 94679.07

Date	Time (24 hr)	Water Level (FTOC)	Volume Removed (Gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conductivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
11/1/06	1240	–	210	3.0	13.94	8.37	1.25	0.00	12.3	-105	
	1245	–	225	3.0	13.93	8.37	1.25	0.00	10.1	-105	
	1250	–	240	3.0	13.93	8.38	1.26	0.00	8.8	-106	
	1255	–	255	3.0	13.93	8.38	1.26	0.00	9.0	-106	
	1300	–	270	3.0	13.92	8.37	1.25	0.00	8.3	-106	
	1305	–	285	3.0	13.93	8.37	1.24	0.00	6.4	-106	
	1310	–	300	3.0	13.93	8.37	1.24	0.00	6.2	-106	
	1315	–	315	3.0	13.93	8.37	1.24	0.00	6.0	-107	
	1320	–	330	3.0	13.93	8.37	1.24	0.00	6.8	-107	
	1325	–	345	3.0	13.93	8.37	1.24	0.00	6.0	-107	
	1330	–	360	3.0	13.93	8.37	1.24	0.00	5.8	-107	
	1335	–	375	3.0	13.93	8.37	1.24	0.00	5.9	-107	

11/1/06

SD

Pump Rate: <= 3 GPM **Drawdown:** < 0.33 ft **Measurements:** 3-5 min **Stabilization:** +/- 0.5 C, +/- 0.1 pH, +/- 3% conductivity, +/- 10% DO, +/- 10mv ORP, +/- 10% turb (<= 10 NTU ideal) for 3 consecutive readings

AFP 59
MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: AFP 59	LocID: SW4		Date: 11/1/06
	Project Name: AFP 59 GW Sampling	Project No.: 94679.07		Recorded By: PG Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-22 10-244	Water Level Indicator Type/ID #: Solinst 122-1001		PID Type/ID #: —
	Explosimeter Type/ID #: —	Sampling Equipment: Bailer		Equipment Decon.: Liquinox + DI
WELL INFO	Borehole I.D. (in) [a]: 8"	Unit Borehole Volume (gal/lin ft) [b]: 2.6		Initial Depth to Water (ft) [c]: 10.68
	Total Well Depth (ft) [d]: 27.81	Water Column Thickness (ft) [d-c]: 17.13		Borehole Volume (gal) {[d-c] x b}: 44.5x3=133.5
	Pump Depth (ft btoc):	Ground Condition of Well:		
	Remarks:			

CASING INFO										
	Borehole I.D. (in) [a]:	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	8.0
	Unit Borehole Volume (gal/lin ft) [b]:	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.6

pump started @ 1425

Date	Time (24 hr)	Water Level (FTOC)	Volume Removed (Gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conduc-tivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
11/1/06	1430	10.68	10	2.0	15.93	8.52	1.27	9.61	657	87	
	1435	—	20	2.0	16.26	8.29	1.39	7.71	127	80	Solinst not working
	1440	—	25	1.0	16.13	8.19	1.43	3.37	244	89	Well out of water
	1445	—	30	1.0	16.15	8.11	1.46	3.78	167	92	-Generator out of gas.
	1500	—	35	1.0	16.04	8.24	1.48	3.69	99.6	112	Restart.
	1505	—	40	1.0	16.16	8.11	1.48	3.63	114.0	106	
	1510	—	45	1.0	16.19	8.08	1.48	3.63	156	102	
	1515	—	50	1.0	16.19	8.07	1.48	3.58	129	103	
	1520	—	55	1.0	16.19	8.05	1.48	3.48	80.2	104	
	1525	—	62.5	1.5	16.03	8.22	1.30	1.16	48.8	90	
	1530	—	70	1.0	16.12	8.07	1.47	4.40	96.5	98	Pumped Dry
1540	~~1535~~	—	75	1.0	16.19	8.00	1.49	4.08	22.0	114	

Pump Rate: <= 3 GPM **Drawdown:** < 0.33 ft **Measurements:** 3-5 min **Stabilization:** +/- 0.5 C, +/- 0.1 pH, +/- 3% conductivity, +/- 10% DO, +/- 10mv ORP, +/- 10% turb (<= 10 NTU ideal) for 3 consecutive readings

Sample ID #(s)/Time(s)	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
1650 SW4WG1	3 - 40 mL glass vials	HCl	N	Bailer	Volatiles (SW8260)
				↓	

AFP 59
MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: AFP 59	LocID: SW 4
	Project Name: AFP 59 GW Sampling	Project No: 94679.07

Date	Time (24 hr)	Water Level (FTOC)	Volume Removed (Gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conductivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
11/1/06	1545	—	80	1.0	16.19	7.99	1.49	4.00	14.6	120	
	1550	-	85	1.0	16.20	7.98	1.49	3.90	27.5	121	
	1555	—	90	1.0	16.19	7.98	1.49	3.86	15.3	123	
	1600	—	95	1.0	16.19	7.98	1.49	3.77	15.5	126	
	1605	—	100	1.0	16.19	7.97	1.49	3.67	14.8	126	
	1610	—	105	1.0	16.19	7.97	1.49	3.58	14.9	125	
	1615	-	110	1.0	16.19	7.97	1.48	3.56	17.3	125	
	1620	—	115	1.0	16.19	7.97	1.49	3.57	13.6	125	
	1625	—	120	1.0	16.19	7.97	1.48	3.53	13.6	127	
	1630	—	125	1.0	16.19	7.97	1.48	3.54	12.7	129	
	1635	—	130	1.0	16.19	7.96	1.48	3.53	16.0	129	
	1640	—	135	1.0	16.18	7.96	1.49	3.51	14.5	129	

11/1/06

JD

Pump Rate: <= 3 GPM **Drawdown:** < 0.33 ft **Measurements:** 3-5 min **Stabilization:** +/- 0.5 C, +/- 0.1 pH, +/- 3% conductivity, +/- 10% DO, +/- 10mv ORP, +/- 10% turb (<= 10 NTU ideal) for 3 consecutive readings

AFP 59
MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: AFP 59	LocID: ~~SD~~ 59SW7	Date: 11/1/06
	Project Name: AFP 59 GW Sampling	Project No.: 94679.07	Recorded By: PE Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-22	Water Level Indicator Type/ID #: Solinst	PID Type/ID #: —
	Explosimeter Type/ID #:	Sampling Equipment: Bailer	Equipment Decon.:
WELL INFO	Borehole I.D. (in) [a]: 8"	Unit Borehole Volume (gal/lin ft) [b]: 2.6	Initial Depth to Water (ft) [c]: 14.95
	Total Well Depth (ft) [d]: 29.07	Water Column Thickness (ft) [d-c]: 14.12	Borehole Volume (gal) {[d-c] x b}: 36.7x3=110.1
	Pump Depth (ft btoc): 27	Ground Condition of Well:	
	Remarks:		

CASING INFO										
	Borehole I.D. (in) [a]:	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	8.0
	Unit Borehole Volume (gal/lin ft) [b]:	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.6

start pump @ 1705

Date	Time (24 hr)	Water Level (FTOC)	Volume Removed (Gal)	Pumping Rate (gpm)	Temp. (C)	pH	Conduc-tivity (mS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
11/1/06	1710	14.95	15	3	16.77	7.79	1.07	16.88	224	146	
	1715	—	30	3	16.80	8.04	1.08	15.81	179	133	
	1720	—	45	3	16.81	8.09	1.09	15.11	182	134	
	1725	—	60	3	16.80	8.14	1.11	13.82	89.6	136	
	1730	—	75	3	16.79	8.28	1.12	13.09	99.3	132	
	1735	—	90	3	16.76	8.37	1.15	7.01	0.0	130	
	1740	—	105	3	16.77	8.38	1.15	7.07	4.2	130	
	1745	—	120	3	16.77	8.39	1.15	7.10	5.0	130	
		JD	11/1/06								

Pump Rate: <= 3 GPM **Drawdown:** < 0.33 ft **Measurements:** 3-5 min **Stabilization:** +/- 0.5 C, +/- 0.1 pH, +/- 3% conductivity, +/- 10% DO, +/- 10mv ORP, +/- 10% turb (<= 10 NTU ideal) for 3 consecutive readings

Sample ID #(s)/Time(s)	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
1800 59SW7WG1 59SW7WG9	3 - 40 mL glass vials	HCl	N	Bailer	Volatiles (SW8260)
				↓	

APPENDIX C
Chain-of-Custody Forms

Earth Tech
~~1420 King Street, Suite 600~~ 625 N. Washington Str. 300
Alexandria, Virginia 22314
Phone No. (703) 549-8728; Fax No. (703) 549-9134

Chain of Custody

EARTH TECH
A tyco INTERNATIONAL LTD. COMPANY

PAGE ___ OF ___

Laboratory	Project Name	Analysis	Chain of Custody No.
STL	AFP 54		No. 9086
Address	**Point of Contact / Phone No.**		
5815 Middlebrook Pike	Phil Gentry (703)549-8728		
City / **State** / **Zip Code**	**Site Contact / Phone No.**		**Comment**
Knoxville / TN / 37921	Phil Gentry (865)329-4901		

ERPIMS Information					Other Sample Information						Analysis
LOCID	SBD	SED	SACODE	SAMPNO	Sample I.D.	Date	Time	Matrix	No. of Con.	Cooler No.	TO-15
SG-03					SG-03	10/31/06	0915	Soil Gas	1		X
SG-04					SG-04	10/31/06	0951	Soil Gas	1		X

1. Relinquished By / Company	Phil Gentry / ET	Date 10/31/06	Time 1200	1. Received By / Company		Date	Time
2. Relinquished By / Company		Date	Time	2. Received By / Company		Date	Time
3. Relinquished By / Company		Date	Time	3. Received By / Company		Date	Time
4. Relinquished By / Company		Date	Time	4. Received By / Company		Date	Time
5. Relinquished By / Company		Date	Time	5. Received By / Company		Date	Time

Comments	Shipment Method/Airbill No.

DISTRIBUTION: WHITE - Stays with sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL Denver
4955 Yarrow Street
Arvada, CO 80002

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
Earth Tech	Phil Grange	10/31/06	329301
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
675 N. Washington Ste. 300	(703) 549-8728		
City / State / Zip Code	**Site Contact**	**Lab Contact**	
Alexandria / VA / 22314	Phil Grange		
Project Name and Location (State)	**Carrier/Waybill Number**		
AFP 59 Johnson City NY			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Soil-Gas	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): TO-15	Special Instructions/ Conditions of Receipt
SG-05 (Summa)	10/30/06	1005					X	X						X	Can. st.-6628 0.41" Hg
SG-06 (Summa)	10/30/06	1036					X	X						X	Can. st.-6626 0.37" Hg
SG-07 (Summa)	10/30/06	1045					X	X						X	Can. st.-6629 0.45" Hg
SG-08 (Summa)	10/30/06	1110					X	X						X	Can. st.-6655 0.5" Hg

PAG 10/31/06

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.	Phil Grange	10/31/06	1200			
2.						
3.						

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

STL Denver
4955 Yarrow Street
Arvada, CO 80002

STL-4124 (0901)

Client: Earth Tech	Project Manager: Phil Granger	Date: 10/31/06	Chain of Custody Number: 329302
Address: 675 N. Washington Ste. 300	Telephone Number (Area Code)/Fax Number: (703) 549-8728	Lab Number:	Page 1 of
City: Alexandria / State: VA / Zip Code: 22314	Site Contact: Phil Granger	Lab Contact:	
Project Name and Location (State): AFP59 New York	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Soil Gas	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): TO-15	Special Instructions/ Conditions of Receipt
SG-9 (Summa)	10/30/06	1122					X	X						X	Canister 6689 0.28" Hg
SG-10 (Summa)	10/30/06	1140					X	X						X	Canister 6586 0.46" Hg
SG-11 (Summa)	10/30/06	1200					X	X						X	Canister 6588 0.47" Hg
SG-12 (Summa)	10/30/06	1310					X	X						X	Canister 6657 0.57" Hg

1 Air 10/31/06

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Phil Granger	10/31/06	1200	1. Received By		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

STL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

SEVERN TRENT STL

Severn Trent Laboratories, Inc. (STL) assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Phil Granger	Sampled By: PG	1 of 1 COCs
Company: Earth Tech	Phone: (703)629-4901		
Address: 675 N. Washington Ste. 300	Site Contact: Phil Granger		
City/State/Zip Alexandria, VA 22314	STL Contact:		
Phone: (703)549-8728			
FAX: (703)549-9134			
Project Name: Soil-Gas Investigation	Analysis Turnaround Time		
Site: AFP 59	Standard (Specify) X		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SG-13	10/30/06	1327	1328	0.57	0.0	—	6627	X									X		
SG-14	10/30/06	1340	1341	0.49	0.0	—	6597	X									X		
SG-15	10/30/06	1355	1356	0.39	0.0	—	6690	X									X		
SG-16	10/30/06	1415	1416	0.58	0.0	—	6624	X									X		

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (inches of Hg)	Interior	Ambient	
Start			
Stop			

PAG 10/31/06

Special Instructions/QC Requirements & Comments:

Canisters Shipped by: Phil Granger	Date/Time: 10/30/06 1200	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Lab Use Only **Shipper Name:** **Opened by:** **Condition:**

STL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

SEVERN TRENT STL

Severn Trent Laboratories, Inc. (STL) assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Phil Granger	Sampled By: PG	1 of 1 COCs
Company: Earth Tech	Phone: (703)629-4901		
Address: 675 N. Washington St.	Site Contact: Phil Granger		
City/State/Zip Alexandria, VA 22314	STL Contact:		
Phone: (703)549-8728			
FAX: (703)549-9134			
Project Name: Soil-Gas Investigation	Analysis Turnaround Time		
Site: AFP 59	Standard (Specify) X		
PO # 94679	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SG-17	10/30/06	1443	1444	0.53	0.0	—	6670	X									X		
SG-18	10/30/06	1526	1521	0.48	0.6	—	6653	X									X		
SG-19	10/30/06	1555	1556	0.40	0.0	—	6634	X									X		
SG-20	10/30/06	1608	1609	0.94	0.0	—	6654	X									X		

Temperature (Fahrenheit)		
	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)		
	Interior	Ambient
Start		
Stop		

PAG 10/31/06

Special Instructions/QC Requirements & Comments:

Canisters Shipped by: Phil Granger	Date/Time: 10/31/06 1200	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Lab Use Only **Shipper Name:** **Opened by:** **Condition:**

STL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

SEVERN TRENT STL

Severn Trent Laboratories, Inc. (STL) assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Phil Granger	Sampled By: PE	1 of 1 COCs
Company: Earth Tech	Phone: (703)629-4901		
Address: 675 N. Washington Str. 300	Site Contact: Phil Granger		
City/State/Zip Alexandria, VA 22314	STL Contact:		
Phone: (703)549-8728			
FAX: (703) 549-9134			
Project Name: Soil-Gas Investigation	Analysis Turnaround Time		
Site: AFP 59	Standard (Specify) X		
PO # 94679	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SG-21	10/30/06	1622	1623	0.52	0.0	-	6625	X									X		
SG-22	10/30/06	1640	1641	0.35	0.0	-	6616	X									X		
SG-23	10/30/06	1655	1656	0.43	0.0	-	6620	X									X		
SG-24	10/30/06	1714	1715	0.48	0.0	-	6598	X									X		

Temperature (Fahrenheit)		
	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)		
	Interior	Ambient
Start		
Stop		

PAG 10/31/06

Special Instructions/QC Requirements & Comments:

Canisters Shipped by: Phil Granger	Date/Time: 10/31/06 1200	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Lab Use Only **Shipper Name:** **Opened by:** **Condition:**

STL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

SEVERN TRENT STL

Severn Trent Laboratories, Inc. (STL) assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Phil Granger	Sampled BY: PG	___ of ___ COCs
Company: Earth Tech	Phone: (703) 629-4901		
Address: 675 N. Washington Sta. 300	Site Contact: Phil Granger		
City/State/Zip Alexandria, VA 22314	STL Contact:		
Phone: (703) 549-8728			
FAX: (703) 549-7194			
Project Name: Soil-Gas Investigation	Analysis Turnaround Time		
Site: AFP 59	Standard (Specify) X		
PO # 94679	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SG-25	10/31/06	0652	0653	0.50	0.0	—	6574	X									X		
SG-26	10/31/06	0717	0718	0.48	0.0	—	6643	X									X		
SG-27	10/31/06	0735	0736	0.48	0.0	—	6600	X									X		
SG-28	10/31/06	0757	0758	0.51	0.0	—	6639	X									X		

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (inches of Hg)	Interior	Ambient	
Start			
Stop			

PAE 10/31/06

Special Instructions/QC Requirements & Comments:

Canisters Shipped by: Phil Granger	Date/Time: 10/31/06	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Lab Use Only **Shipper Name:** **Opened by:** **Condition:**

STL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

SEVERN TRENT STL

Severn Trent Laboratories, Inc. (STL) assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Phil Granger	Sampled By: PE	___ of ___ COCs
Company: Earth Tech	Phone: (703)629-4901		
Address: 675 N. Washington Ste.300	Site Contact: Phil Granger		
City/State/Zip Alexandria VA 22314	STL Contact:		
Phone: (703)549-8728			
FAX: (703)549-9134			
Project Name: Soil-Gas Investigation	Analysis Turnaround Time		
Site: AFP 59	Standard (Specify) X		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SG-29	10/31/06	0815	0816	0.47	0.0	-	6644	X									X		
SG-30	10/31/06	0838	0839	0.50	0.0	-	6687	X									X		
SG-31	10/31/06	0900	0901	0.38	0.0	-	6641	X									X		
SG-32	10/31/06	0920	0921	0.38	0.0	-	6617	X									X		

Temperature (Fahrenheit)			
	Interior	Ambient	
Start			PAE
Stop			10/31/06

Pressure (inches of Hg)			
	Interior	Ambient	
Start			
Stop			

Special Instructions/QC Requirements & Comments:

Canisters Shipped by: Phil Granger	Date/Time: 10/31/06 1200	Canisters Received by:
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Lab Use Only **Shipper Name:** **Opened by:** **Condition:**

COC No. A 66151

156 Starlite Drive
Marietta, OH 45750

KEMRON
ENVIRONMENTAL SERVICES

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: Earth Tech

Project Contact: Phil Grainger | Contact Phone #: (703)629-4901

Turn Around Requirements: Standard | Location: Johnson City NY

Project #: 94679 | Project Name: AFP59

Sampler (print): Phil Grainger | Signature:

Program: ☐ NPDES ☒ AFCEE ☐ RCRA ☐ USAGE ☐ Other

Sample I.D. No.	Comp*	Grab	Date	Time	Protocol CWA	Protocol SW846	NUMBER OF CONTAINERS	Hold	VOC's 8260	ADDITIONAL REQUIREMENTS
59DW1WG1		X	11/1/06	0830		X	3		X	
59SW1WG1		X	11/1/06	0940		X	3		X	
59SW3WG1		X	11/1/06	1115		X	9		X	MS/MSD
59DW3WG1		X	11/1/06	1345		X	3		X	
59SW4WG1		X	11/1/06	1650		X	3		X	
59SW7WG1		X	11/1/06	1800		X	3		X	
59SW7WG9		X	11/1/06	1800		X	3		X	
TB110106		X	10/30/06	1403		X	2		X	

11/1/06

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
	11/2/06	0900					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Cooler Temp in °C	Remarks:

*Homogenize all composite samples prior to analysis

APPENDIX D
Data Validation Review Summary and Groundwater Analytical Data

Table 4
Summary of Detected VOCs in Monitoring Well Samples
November 2006

Location ID / Date Sampled	DW1 11/1/2006	DW3 11/1/2006	SW1 11/1/2006	SW3 11/1/2006	SW4 11/1/2006	SW7 11/1/2006	SW7 (DUP) 11/1/2006
Analyte	**Volatiles by EPA SW-846 Method 8260 (ug/L)**						
1,1,1-Trichloroethane	1 U	1 U	1 U	**0.458 J**	**3.35**	**1.19**	**1.21**
1,1-Dichloroethane	1 U	1 U	1 U	1 U	**1.72**	**0.429 J**	**0.464 J**
1,2,3-Trichlorobenzene	1 U	**0.133 J**	1 U	1 U	1 U	1 U	1 U
Chloroform	0.3 U	0.3 U	0.3 U	**0.151 J**	0.3 U	0.3 U	0.3 U
cis-1,2-Dichloroethene	1 U	**5.21**	1 U	**0.389 J**	**2.65**	**1.72**	**1.98**
Methylene chloride	1 U	**0.255 J**	1 U	**0.339 J**	**0.269 J**	1 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	**0.664 J**	1 U	**0.26 J**
Trichloroethene	1 U	1 U	1 U	**1.03**	**5.62**	**1.43**	**1.56**

Key: J = The analyte was positively identified, but the quantitation is an estimation.
U = The analyte was analyzed for, but not detected. The associated numerical value is at or below the method detection limit (MDL).
(DUP) = Duplicate sample taken in the field.

Notes: Bolded values indicate the analyte was detected above the associated MDL.

TABLE OF CONTENTS

1.0 INTRODUCTION

This data quality review pertains to aqueous samples collected in November 2006 at Air Force Plant 59 (AFP59). Parameters evaluated in groundwater samples included the total concentration of volatile organic constituent (VOC). The samples were analyzed by Kemron Environmental Services, (Kemron), Marietta, Ohio.

Data quality review is an after-the-fact technical review of analytical data whereby the quality and usability of the data are determined based on a set of predefined criteria. These criteria depend upon the type of data involved and the purpose for which those data were collected. Data quality review assesses whether and to what extent specified criteria were met, and places restrictions on data use based on quality parameters. The data quality review process can range from a cursory review used to detect out-of-control situations to a detailed evaluation, depending on the analytical protocol, the associated quality control samples collected, and the intended data use.

Specific criteria for data quality review may include, but are not limited to: technical holding times, analysis of blanks, surrogate spike recovery, analysis of duplicates, and reported practical quantitation limits (PQLs). Where applicable, the recommendations of USEPA SW-846 *Test Methods for Evaluating Solid Waste* (Third Edition, December 1996) or USEPA *Methods for Chemical Analysis of Water and Wastes* (Revised March 1983) analytical method requirements, USEPA *CLP National Functional Guidelines for Organic and Inorganic Data Review* (February 1994, *Functional Guidelines*) data review guidance, and professional judgment.

Table 1 presents the data qualifiers applied during this review effort and their meanings.

Table 1
Data Qualifiers

Qualifier	Description
J	This is an estimated value.
UJ	Not detected, quantitation limit may be inaccurate or imprecise.
U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

Table 2 provides a cross-reference list for field sample IDs and lab sample IDs.

Table 2
Field Sample ID/Lab Sample ID Cross Reference
Lot L0611082

Field Sample ID	Lab Sample ID	Field Sample ID	Lab Sample ID
59DW1WG1	L0611082-01	59DW3WG1	L0611082-06
59SW1WG1	L0611082-02	59SW4WG1	L0611082-07
59SW3WG1	L0611082-03	59SW7WG1	L0611082-08
59SW3WG1 MS	L0611082-04	59SW7WG9	L0611082-09
59SW3WG1 MSD	L0611082-05	TB110106	L0611082-10

During the data quality review process, laboratory qualified and unqualified data are verified against all available supporting documentation. Based on this review, qualifier codes may be added, deleted, or modified by the validator. Final results are therefore either qualified or unqualified. (Note: In those cases where the laboratory added a "U" flag indicated a non-detect result, and the validator agrees with this flag, then it remains intact, as noted on the corresponding Results Summary Form.) Changes to the data are reflected on the Results Summary Forms in Appendix A.

2.0 VOLATILE ORGANIC CONSTITUENTS

Volatile organic constituents were analyzed using EPA Test Method for Evaluating Solid Waste (SW-846) Method 8260B.

2.1 Holding Times

All samples were analyzed within prescribed hold times. No qualification is needed.

2.2 Calibration

The initial calibration standards were analyzed at 0.30, 1, 2, 5, 20, 50, 100, and 200 ug/L. For the Initial Calibration run, target constituent RRF values were all greater than 0.05 and the %RSD values were less than 30% for all target constituents. No qualification is needed.

Continuing calibration verification standards did not exhibit any %D values greater than 20% except for acetone. The validator qualifies **UJ** and **J** the nondetect and positive acetone results, respectively in associated samples.

It is noted that for those results which were less than the RL but greater than the MDL, the laboratory assigned an "F" flag, indicating an estimated value. Thus the data validator removes the "F" flag and replaces it with a "J" qualifier unless the result has been qualified otherwise by the validator.

2.3 Laboratory Control Samples

Constituent recoveries from the associated laboratory control sample were within control limits for all target constituents except for bromodichloromethane. Recovery of bromodichloromethane was above the upper control limit. The validator qualifies **J** any positive bromodichloromethane results in the associated samples. Since bromodichloromethane was not detected in the environmental samples, no qualification is needed.

2.4 Blanks

The trip blank TB110106 exhibited 1.63 ug/L of methylene chloride. Since methylene chloride was not detected in the environmental samples, no qualification is needed.

2.5 Matrix Spike/Matrix Spike Duplicate

Sample 59SW3WG1 served as MS/MSD. Recoveries were within control limits in both MS & MSD, and RPD limits were not exceeded. No qualification needed.

2.6 Surrogate Recovery

All surrogate recoveries were within control limits for all samples, and no qualification is needed.

2.7 Internal Standards

All internal standard area counts were within control limits for all samples. No qualification is needed based on the internal standard information provided.

2.8 Duplicates

A field duplicate was collected for sample SW7. One of two criteria was followed when evaluating field duplicates, depending on the amount detected. If the amount detected was greater than five times the reporting limit (RL), then the relative percent difference (RPD) should have been less than 25 percent. If the amount was less than five times the RL, then the difference between the duplicate and the sample concentrations should have been less than the RL. Agreement is excellent and no qualification is needed.

A comparison of field sample and duplicate is presented in Table 3.

Table 3: Duplicate Comparison (µg/L)

Analyte	Reporting Limit (RL)	59SW7WG1	59SW7WG9	Relative Percent Difference (RPD)
1,1,1-Trichloroethane	1.0	1.19	1.21	2%
1,1-Dichloroethane	1.0	0.429	0.464	8%
Cis-1, 2-Dichloroethene	1.0	1.72	1.98	14%
Trichloroethene	1.0	1.43	1.56	9%
Tetrachloroethene	1.0	ND	0.260	Not calculated

2.8 Summary

The data are acceptable with validator-assigned qualifiers.

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-01
Client ID: 59DW1WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 08:30
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 15:18
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 15:18
File ID: 8M331907

Analyte	CAS. Number	Result	Qual	RL	MDL	
1,1,1,2-Tetrachloroethane	630-20-6		U	0.500	0.250	
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250	
1,1,2,2-Tetrachloroethane	79-34-5		U	0.500	0.125	
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250	
1,1-Dichloroethane	75-34-3		U	1.00	0.125	
1,1-Dichloroethene	75-35-4		U	1.00	0.500	
1,1-Dichloropropene	563-58-6		U	1.00	0.250	
1,2,3-Trichlorobenzene	87-61-6		U	1.00	0.125	
1,2,3-Trichloropropane	96-18-4		U	1.00	0.500	
1,2,4-Trichlorobenzene	120-82-1		U	1.00	0.200	
1,2,4-Trimethylbenzene	95-63-6		U	1.00	0.250	
1,2-Dichloroethane	107-06-2		U	0.500	0.250	
1,2-Dichlorobenzene	95-50-1		U	1.00	0.125	
1,2-Dibromo-3-chloropropane	96-12-8		U	2.00	1.00	
1,2-Dichloropropane	78-87-5		U	1.00	0.200	
1,2-Dibromoethane	106-93-4		U	1.00	0.250	
1,3,5-Trimethylbenzene	108-67-8		U	1.00	0.250	
1,3-Dichlorobenzene	541-73-1		U	1.00	0.250	
1,3-Dichloropropane	142-28-9		U	0.400	0.200	
1,4-Dichlorobenzene	106-46-7		U	0.500	0.125	
1-Chlorohexane	544-10-5		U	1.00	0.125	
2,2-Dichloropropane	594-20-7		U	1.00	0.250	
2-Chlorotoluene	95-49-8		U	1.00	0.125	
4-Chlorotoluene	106-43-4		U	1.00	0.250	
Acetone	67-64-1		~~U~~	10.0	2.50	UJ
Benzene	71-43-2		U	0.400	0.125	
Bromobenzene	108-86-1		U	1.00	0.125	
Bromochloromethane	74-97-5		U	1.00	0.200	
Bromodichloromethane	75-27-4		U	0.500	0.250	
Bromoform	75-25-2		U	1.00	0.500	
Bromomethane	74-83-9		U	3.00	0.500	
Carbon tetrachloride	56-23-5		U	1.00	0.250	
Chlorobenzene	108-90-7		U	0.500	0.125	
Chloroethane	75-00-3		U	1.00	0.500	
Chloroform	67-66-3		U	0.300	0.125	
Chloromethane	74-87-3		U	1.00	0.250	
cis-1,2-Dichloroethene	156-59-2		U	1.00	0.250	
cis-1,3-Dichloropropene	10061-01-5		U	0.500	0.250	
Dibromochloromethane	124-48-1		U	0.500	0.250	
Dibromomethane	74-95-3		U	1.00	0.250	
Dichlorodifluoromethane	75-71-8		U	1.00	0.250	
Ethylbenzene	100-41-4		U	1.00	0.250	
Hexachlorobutadiene	87-68-3		U	0.600	0.250	
Isopropylbenzene	98-82-8		U	1.00	0.250	
Methylene chloride	75-09-2		U	1.00	0.250	
Methyl t-butyl ether (MTBE)	1634-04-4		U	5.00	0.500	
MEK (2-Butanone)	78-93-3		U	10.0	2.50	
MIBK (methyl isobutyl ketone)	108-10-1		U	10.0	2.50	

DC 12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-01
Client ID: 59DW1WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 08:30
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 15:18
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 15:18
File ID: 8M331907

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8		U	1.00	0.250
n-Propylbenzene	103-65-1		U	1.00	0.125
m-,p-Xylene	136777-61-2		U	2.00	0.500
Naphthalene	91-20-3		U	1.00	0.200
o-Xylene	95-47-6		U	1.00	0.250
p-Isopropyltoluene	99-87-6		U	1.00	0.250
sec-Butylbenzene	135-98-8		U	1.00	0.250
Styrene	100-42-5		U	1.00	0.125
Trichloroethene	79-01-6		U	1.00	0.250
tert-Butylbenzene	98-06-6		U	1.00	0.250
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Trichlorofluoromethane	75-69-4		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	89.4	85	115	
1,2-Dichloroethane-d4	89.6	72	119	
Toluene-d8	96.1	81	120	
4-Bromofluorobenzene	95.0	76	119	

R Because of quality control deficiences for this analyte, this data may be rejected.
U Undetected; the analyte was analyzed for, but not detected.

DC 12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-02
Client ID: 59SW1WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 09:40
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 15:48
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 15:48
File ID: 8M331908

Analyte	CAS. Number	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		U	0.500	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		U	0.500	0.125
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
1,1-Dichloroethane	75-34-3		U	1.00	0.125
1,1-Dichloroethene	75-35-4		U	1.00	0.500
1,1-Dichloropropene	563-58-6		U	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		U	1.00	0.125
1,2,3-Trichloropropane	96-18-4		U	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		U	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		U	1.00	0.250
1,2-Dichloroethane	107-06-2		U	0.500	0.250
1,2-Dichlorobenzene	95-50-1		U	1.00	0.125
1,2-Dibromo-3-chloropropane	96-12-8		U	2.00	1.00
1,2-Dichloropropane	78-87-5		U	1.00	0.200
1,2-Dibromoethane	106-93-4		U	1.00	0.250
1,3,5-Trimethylbenzene	108-67-8		U	1.00	0.250
1,3-Dichlorobenzene	541-73-1		U	1.00	0.250
1,3-Dichloropropane	142-28-9		U	0.400	0.200
1,4-Dichlorobenzene	106-46-7		U	0.500	0.125
1-Chlorohexane	544-10-5		U	1.00	0.125
2,2-Dichloropropane	594-20-7		U	1.00	0.250
2-Chlorotoluene	95-49-8		U	1.00	0.125
4-Chlorotoluene	106-43-4		U	1.00	0.250
Acetone	67-64-1		~~R~~	10.0	2.50
Benzene	71-43-2		U	0.400	0.125
Bromobenzene	108-86-1		U	1.00	0.125
Bromochloromethane	74-97-5		U	1.00	0.200
Bromodichloromethane	75-27-4		U	0.500	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	3.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7		U	0.500	0.125
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	0.300	0.125
Chloromethane	74-87-3		U	1.00	0.250
cis-1,2-Dichloroethene	156-59-2		U	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		U	0.500	0.250
Dibromochloromethane	124-48-1		U	0.500	0.250
Dibromomethane	74-95-3		U	1.00	0.250
Dichlorodifluoromethane	75-71-8		U	1.00	0.250
Ethylbenzene	100-41-4		U	1.00	0.250
Hexachlorobutadiene	87-68-3		U	0.600	0.250
Isopropylbenzene	98-82-8		U	1.00	0.250
Methylene chloride	75-09-2		U	1.00	0.250
Methyl t-butyl ether (MTBE)	1634-04-4		U	5.00	0.500
MEK (2-Butanone)	78-93-3		U	10.0	2.50
MIBK (methyl isobutyl ketone)	108-10-1		U	10.0	2.50

UJ

DC
12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-02
Client ID: 59SW1WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 09:40
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 15:48
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 15:48
File ID: 8M331908

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8		U	1.00	0.250
n-Propylbenzene	103-65-1		U	1.00	0.125
m-,p-Xylene	136777-61-2		U	2.00	0.500
Naphthalene	91-20-3		U	1.00	0.200
o-Xylene	95-47-6		U	1.00	0.250
p-Isopropyltoluene	99-87-6		U	1.00	0.250
sec-Butylbenzene	135-98-8		U	1.00	0.250
Styrene	100-42-5		U	1.00	0.125
Trichloroethene	79-01-6		U	1.00	0.250
tert-Butylbenzene	98-06-6		U	1.00	0.250
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Trichlorofluoromethane	75-69-4		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	89.5	85	115	
1,2-Dichloroethane-d4	93.1	72	119	
Toluene-d8	97.0	81	120	
4-Bromofluorobenzene	95.6	76	119	

R Because of quality control deficiences for this analyte, this data may be rejected.
U Undetected; the analyte was analyzed for, but not detected.

DC 12/18/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-03
Client ID: 59SW3WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 11:15
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 16:18
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 16:18
File ID: 8M331909

Analyte	CAS. Number	Result	Qual	RL	MDL	
1,1,1,2-Tetrachloroethane	630-20-6		U	0.500	0.250	
1,1,1-Trichloroethane	71-55-6	0.458	~~P~~	1.00	0.250	J
1,1,2,2-Tetrachloroethane	79-34-5		U	0.500	0.125	
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250	
1,1-Dichloroethane	75-34-3		U	1.00	0.125	
1,1-Dichloroethene	75-35-4		U	1.00	0.500	
1,1-Dichloropropene	563-58-6		U	1.00	0.250	
1,2,3-Trichlorobenzene	87-61-6		U	1.00	0.125	
1,2,3-Trichloropropane	96-18-4		U	1.00	0.500	
1,2,4-Trichlorobenzene	120-82-1		U	1.00	0.200	
1,2,4-Trimethylbenzene	95-63-6		U	1.00	0.250	
1,2-Dichloroethane	107-06-2		U	0.500	0.250	
1,2-Dichlorobenzene	95-50-1		U	1.00	0.125	
1,2-Dibromo-3-chloropropane	96-12-8		U	2.00	1.00	
1,2-Dichloropropane	78-87-5		U	1.00	0.200	
1,2-Dibromoethane	106-93-4		U	1.00	0.250	
1,3,5-Trimethylbenzene	108-67-8		U	1.00	0.250	
1,3-Dichlorobenzene	541-73-1		U	1.00	0.250	
1,3-Dichloropropane	142-28-9		U	0.400	0.200	
1,4-Dichlorobenzene	106-46-7		U	0.500	0.125	
1-Chlorohexane	544-10-5		U	1.00	0.125	
2,2-Dichloropropane	594-20-7		U	1.00	0.250	
2-Chlorotoluene	95-49-8		U	1.00	0.125	
4-Chlorotoluene	106-43-4		U	1.00	0.250	
Acetone	67-64-1		~~R~~	10.0	2.50	U J
Benzene	71-43-2		U	0.400	0.125	
Bromobenzene	108-86-1		U	1.00	0.125	
Bromochloromethane	74-97-5		U	1.00	0.200	
Bromodichloromethane	75-27-4		U	0.500	0.250	
Bromoform	75-25-2		U	1.00	0.500	
Bromomethane	74-83-9		U	3.00	0.500	
Carbon tetrachloride	56-23-5		U	1.00	0.250	
Chlorobenzene	108-90-7		U	0.500	0.125	
Chloroethane	75-00-3		U	1.00	0.500	
Chloroform	67-66-3	0.151	~~P~~	0.300	0.125	J
Chloromethane	74-87-3		U	1.00	0.250	
cis-1,2-Dichloroethene	156-59-2	0.389	~~P~~	1.00	0.250	J
cis-1,3-Dichloropropene	10061-01-5		U	0.500	0.250	
Dibromochloromethane	124-48-1		U	0.500	0.250	
Dibromomethane	74-95-3		U	1.00	0.250	
Dichlorodifluoromethane	75-71-8		U	1.00	0.250	
Ethylbenzene	100-41-4		U	1.00	0.250	
Hexachlorobutadiene	87-68-3		U	0.600	0.250	
Isopropylbenzene	98-82-8		U	1.00	0.250	
Methylene chloride	75-09-2	0.339	~~B~~	1.00	0.250	J
Methyl t-butyl ether (MTBE)	1634-04-4		U	5.00	0.500	
MEK (2-Butanone)	78-93-3		U	10.0	2.50	
MIBK (methyl isobutyl ketone)	108-10-1		U	10.0	2.50	

DC
12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-03
Client ID: 59SW3WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 11:15
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 16:18
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 16:18
File ID: 8M331909

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8		U	1.00	0.250
n-Propylbenzene	103-65-1		U	1.00	0.125
m-,p-Xylene	136777-61-2		U	2.00	0.500
Naphthalene	91-20-3		U	1.00	0.200
o-Xylene	95-47-6		U	1.00	0.250
p-Isopropyltoluene	99-87-6		U	1.00	0.250
sec-Butylbenzene	135-98-8		U	1.00	0.250
Styrene	100-42-5		U	1.00	0.125
Trichloroethene	79-01-6	1.03		1.00	0.250
tert-Butylbenzene	98-06-6		U	1.00	0.250
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Trichlorofluoromethane	75-69-4		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	89.5	85	115	
1,2-Dichloroethane-d4	91.8	72	119	
Toluene-d8	96.7	81	120	
4-Bromofluorobenzene	95.5	76	119	

F The analyte was positively identified, but the quantitation was below the RL.
R Because of quality control deficiences for this analyte, this data may be rejected.
U Undetected; the analyte was analyzed for, but not detected.

DC 12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-04
Client ID: 59SW3WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 11:15
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 16:48
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 16:48
File ID: 8M331910

Analyte	CAS. Number	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6	21.5		0.500	0.250
1,1,1-Trichloroethane	71-55-6	21.4		1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.0		0.500	0.125
1,1,2-Trichloroethane	79-00-5	21.1		1.00	0.250
1,1-Dichloroethane	75-34-3	19.9		1.00	0.125
1,1-Dichloroethene	75-35-4	18.7		1.00	0.500
1,1-Dichloropropene	563-58-6	19.8		1.00	0.250
1,2,3-Trichlorobenzene	87-61-6	18.0		1.00	0.125
1,2,3-Trichloropropane	96-18-4	20.4		1.00	0.500
1,2,4-Trichlorobenzene	120-82-1	18.8		1.00	0.200
1,2,4-Trimethylbenzene	95-63-6	20.5		1.00	0.250
1,2-Dichloroethane	107-06-2	22.3		0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.5		1.00	0.125
1,2-Dibromo-3-chloropropane	96-12-8	19.9		2.00	1.00
1,2-Dichloropropane	78-87-5	19.9		1.00	0.200
1,2-Dibromoethane	106-93-4	20.4		1.00	0.250
1,3,5-Trimethylbenzene	108-67-8	20.5		1.00	0.250
1,3-Dichlorobenzene	541-73-1	19.8		1.00	0.250
1,3-Dichloropropane	142-28-9	20.8		0.400	0.200
1,4-Dichlorobenzene	106-46-7	19.1		0.500	0.125
1-Chlorohexane	544-10-5	18.5		1.00	0.125
2,2-Dichloropropane	594-20-7	19.7		1.00	0.250
2-Chlorotoluene	95-49-8	19.6		1.00	0.125
4-Chlorotoluene	106-43-4	19.5		1.00	0.250
Acetone	67-64-1	21.0	R	10.0	2.50
Benzene	71-43-2	19.5		0.400	0.125
Bromobenzene	108-86-1	20.2		1.00	0.125
Bromochloromethane	74-97-5	20.4		1.00	0.200
Bromodichloromethane	75-27-4	22.5		0.500	0.250
Bromoform	75-25-2	20.1		1.00	0.500
Bromomethane	74-83-9	15.0		3.00	0.500
Carbon tetrachloride	56-23-5	20.9		1.00	0.250
Chlorobenzene	108-90-7	20.4		0.500	0.125
Chloroethane	75-00-3	17.1		1.00	0.500
Chloroform	67-66-3	21.0		0.300	0.125
Chloromethane	74-87-3	18.4		1.00	0.250
cis-1,2-Dichloroethene	156-59-2	21.9		1.00	0.250
cis-1,3-Dichloropropene	10061-01-5	20.5		0.500	0.250
Dibromochloromethane	124-48-1	21.9		0.500	0.250
Dibromomethane	74-95-3	21.7		1.00	0.250
Dichlorodifluoromethane	75-71-8	14.1		1.00	0.250
Ethylbenzene	100-41-4	20.0		1.00	0.250
Hexachlorobutadiene	87-68-3	19.6		0.600	0.250
Isopropylbenzene	98-82-8	18.8		1.00	0.250
Methylene chloride	75-09-2	18.8		1.00	0.250
Methyl t-butyl ether (MTBE)	1634-04-4	21.4		5.00	0.500
MEK (2-Butanone)	78-93-3	21.4		10.0	2.50
MIBK (methyl isobutyl ketone)	108-10-1	18.8		10.0	2.50

do not use
DL
12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-04
Client ID: 59SW3WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 11:15
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 16:48
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 16:48
File ID: 8M331910

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8	19.5		1.00	0.250
n-Propylbenzene	103-65-1	20.0		1.00	0.125
m-,p-Xylene	136777-61-2	40.9		2.00	0.500
Naphthalene	91-20-3	19.5		1.00	0.200
o-Xylene	95-47-6	20.1		1.00	0.250
p-Isopropyltoluene	99-87-6	19.4		1.00	0.250
sec-Butylbenzene	135-98-8	19.6		1.00	0.250
Styrene	100-42-5	21.5		1.00	0.125
Trichloroethene	79-01-6	20.5		1.00	0.250
tert-Butylbenzene	98-06-6	19.2		1.00	0.250
Tetrachloroethene	127-18-4	19.6		1.00	0.250
Toluene	108-88-3	20.0		1.00	0.250
trans-1,2-Dichloroethene	156-60-5	19.4		1.00	0.250
trans-1,3-Dichloropropene	10061-02-6	19.2		1.00	0.500
Trichlorofluoromethane	75-69-4	16.8		1.00	0.250
Vinyl chloride	75-01-4	17.4		1.00	0.250

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	91.1	85	115	
1,2-Dichloroethane-d4	92.7	72	119	
Toluene-d8	95.6	81	120	
4-Bromofluorobenzene	92.8	76	119	

R Because of quality control deficiences for this analyte, this data may be rejected.

do not use
12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-05
Client ID: 59SW3WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 11:15
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 17:18
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 17:18
File ID: 8M331911

Analyte	CAS. Number	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6	21.5		0.500	0.250
1,1,1-Trichloroethane	71-55-6	20.3		1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.7		0.500	0.125
1,1,2-Trichloroethane	79-00-5	21.6		1.00	0.250
1,1-Dichloroethane	75-34-3	19.6		1.00	0.125
1,1-Dichloroethene	75-35-4	17.9		1.00	0.500
1,1-Dichloropropene	563-58-6	19.1		1.00	0.250
1,2,3-Trichlorobenzene	87-61-6	18.5		1.00	0.125
1,2,3-Trichloropropane	96-18-4	20.4		1.00	0.500
1,2,4-Trichlorobenzene	120-82-1	18.7		1.00	0.200
1,2,4-Trimethylbenzene	95-63-6	20.4		1.00	0.250
1,2-Dichloroethane	107-06-2	21.9		0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.7		1.00	0.125
1,2-Dibromo-3-chloropropane	96-12-8	19.8		2.00	1.00
1,2-Dichloropropane	78-87-5	20.2		1.00	0.200
1,2-Dibromoethane	106-93-4	21.3		1.00	0.250
1,3,5-Trimethylbenzene	108-67-8	20.5		1.00	0.250
1,3-Dichlorobenzene	541-73-1	19.9		1.00	0.250
1,3-Dichloropropane	142-28-9	21.2		0.400	0.200
1,4-Dichlorobenzene	106-46-7	19.2		0.500	0.125
1-Chlorohexane	544-10-5	17.9		1.00	0.125
2,2-Dichloropropane	594-20-7	18.8		1.00	0.250
2-Chlorotoluene	95-49-8	21.0		1.00	0.125
4-Chlorotoluene	106-43-4	19.8		1.00	0.250
Acetone	67-64-1	20.8	R	10.0	2.50
Benzene	71-43-2	19.1		0.400	0.125
Bromobenzene	108-86-1	20.3		1.00	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.200
Bromodichloromethane	75-27-4	22.1		0.500	0.250
Bromoform	75-25-2	20.4		1.00	0.500
Bromomethane	74-83-9	15.1		3.00	0.500
Carbon tetrachloride	56-23-5	19.7		1.00	0.250
Chlorobenzene	108-90-7	20.9		0.500	0.125
Chloroethane	75-00-3	16.7		1.00	0.500
Chloroform	67-66-3	20.5		0.300	0.125
Chloromethane	74-87-3	17.7		1.00	0.250
cis-1,2-Dichloroethene	156-59-2	19.3		1.00	0.250
cis-1,3-Dichloropropene	10061-01-5	20.4		0.500	0.250
Dibromochloromethane	124-48-1	22.3		0.500	0.250
Dibromomethane	74-95-3	21.3		1.00	0.250
Dichlorodifluoromethane	75-71-8	12.4		1.00	0.250
Ethylbenzene	100-41-4	20.2		1.00	0.250
Hexachlorobutadiene	87-68-3	19.0		0.600	0.250
Isopropylbenzene	98-82-8	19.0		1.00	0.250
Methylene chloride	75-09-2	18.9		1.00	0.250
Methyl t-butyl ether (MTBE)	1634-04-4	20.9		5.00	0.500
MEK (2-Butanone)	78-93-3	20.5		10.0	2.50
MIBK (methyl isobutyl ketone)	108-10-1	17.7		10.0	2.50

do not use
DC
12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-05
Client ID: 59SW3WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 11:15
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 17:18
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 17:18
File ID: 8M331911

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8	19.2		1.00	0.250
n-Propylbenzene	103-65-1	19.8		1.00	0.125
m-,p-Xylene	136777-61-2	41.0		2.00	0.500
Naphthalene	91-20-3	19.7		1.00	0.200
o-Xylene	95-47-6	20.7		1.00	0.250
p-Isopropyltoluene	99-87-6	19.3		1.00	0.250
sec-Butylbenzene	135-98-8	19.3		1.00	0.250
Styrene	100-42-5	21.9		1.00	0.125
Trichloroethene	79-01-6	20.3		1.00	0.250
tert-Butylbenzene	98-06-6	18.8		1.00	0.250
Tetrachloroethene	127-18-4	19.7		1.00	0.250
Toluene	108-88-3	20.2		1.00	0.250
trans-1,2-Dichloroethene	156-60-5	19.0		1.00	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		1.00	0.500
Trichlorofluoromethane	75-69-4	15.0		1.00	0.250
Vinyl chloride	75-01-4	15.9		1.00	0.250

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	88.4	85	115	
1,2-Dichloroethane-d4	88.9	72	119	
Toluene-d8	96.0	81	120	
4-Bromofluorobenzene	93.2	76	119	

R Because of quality control deficiences for this analyte, this data may be rejected.

do not use
DC
12/4/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-06
Client ID: 59DW3WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 13:45
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 17:49
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 17:49
File ID: 8M331912

Analyte	CAS. Number	Result	Qual	RL	MDL	
1,1,1,2-Tetrachloroethane	630-20-6		U	0.500	0.250	
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250	
1,1,2,2-Tetrachloroethane	79-34-5		U	0.500	0.125	
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250	
1,1-Dichloroethane	75-34-3		U	1.00	0.125	
1,1-Dichloroethene	75-35-4		U	1.00	0.500	
1,1-Dichloropropene	563-58-6		U	1.00	0.250	
1,2,3-Trichlorobenzene	87-61-6	0.133	~~U~~	1.00	0.125	J
1,2,3-Trichloropropane	96-18-4		U	1.00	0.500	
1,2,4-Trichlorobenzene	120-82-1		U	1.00	0.200	
1,2,4-Trimethylbenzene	95-63-6		U	1.00	0.250	
1,2-Dichloroethane	107-06-2		U	0.500	0.250	
1,2-Dichlorobenzene	95-50-1		U	1.00	0.125	
1,2-Dibromo-3-chloropropane	96-12-8		U	2.00	1.00	
1,2-Dichloropropane	78-87-5		U	1.00	0.200	
1,2-Dibromoethane	106-93-4		U	1.00	0.250	
1,3,5-Trimethylbenzene	108-67-8		U	1.00	0.250	
1,3-Dichlorobenzene	541-73-1		U	1.00	0.250	
1,3-Dichloropropane	142-28-9		U	0.400	0.200	
1,4-Dichlorobenzene	106-46-7		U	0.500	0.125	
1-Chlorohexane	544-10-5		U	1.00	0.125	
2,2-Dichloropropane	594-20-7		U	1.00	0.250	
2-Chlorotoluene	95-49-8		U	1.00	0.125	
4-Chlorotoluene	106-43-4		U	1.00	0.250	
Acetone	67-64-1		~~U~~	10.0	2.50	UJ
Benzene	71-43-2		U	0.400	0.125	
Bromobenzene	108-86-1		U	1.00	0.125	
Bromochloromethane	74-97-5		U	1.00	0.200	
Bromodichloromethane	75-27-4		U	0.500	0.250	
Bromoform	75-25-2		U	1.00	0.500	
Bromomethane	74-83-9		U	3.00	0.500	
Carbon tetrachloride	56-23-5		U	1.00	0.250	
Chlorobenzene	108-90-7		U	0.500	0.125	
Chloroethane	75-00-3		U	1.00	0.500	
Chloroform	67-66-3		U	0.300	0.125	
Chloromethane	74-87-3		U	1.00	0.250	
cis-1,2-Dichloroethene	156-59-2	5.21		1.00	0.250	
cis-1,3-Dichloropropene	10061-01-5		U	0.500	0.250	
Dibromochloromethane	124-48-1		U	0.500	0.250	
Dibromomethane	74-95-3		U	1.00	0.250	
Dichlorodifluoromethane	75-71-8		U	1.00	0.250	
Ethylbenzene	100-41-4		U	1.00	0.250	
Hexachlorobutadiene	87-68-3		U	0.600	0.250	
Isopropylbenzene	98-82-8		U	1.00	0.250	
Methylene chloride	75-09-2	0.255	~~U~~	1.00	0.250	J
Methyl t-butyl ether (MTBE)	1634-04-4		U	5.00	0.500	
MEK (2-Butanone)	78-93-3		U	10.0	2.50	
MIBK (methyl isobutyl ketone)	108-10-1		U	10.0	2.50	

DC 12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-06
Client ID: 59DW3WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 13:45
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 17:49
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 17:49
File ID: 8M331912

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8		U	1.00	0.250
n-Propylbenzene	103-65-1		U	1.00	0.125
m-,p-Xylene	136777-61-2		U	2.00	0.500
Naphthalene	91-20-3		U	1.00	0.200
o-Xylene	95-47-6		U	1.00	0.250
p-Isopropyltoluene	99-87-6		U	1.00	0.250
sec-Butylbenzene	135-98-8		U	1.00	0.250
Styrene	100-42-5		U	1.00	0.125
Trichloroethene	79-01-6		U	1.00	0.250
tert-Butylbenzene	98-06-6		U	1.00	0.250
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Trichlorofluoromethane	75-69-4		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	89.1	85	115	
1,2-Dichloroethane-d4	92.3	72	119	
Toluene-d8	96.6	81	120	
4-Bromofluorobenzene	93.1	76	119	

F The analyte was positively identified, but the quantitation was below the RL.
R Because of quality control deficiences for this analyte, this data may be rejected.
U Undetected; the analyte was analyzed for, but not detected.

DC 12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-07
Client ID: 59SW4WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 16:50
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 18:20
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 18:20
File ID: 8M331913

Analyte	CAS. Number	Result	Qual	RL	MDL	
1,1,1,2-Tetrachloroethane	630-20-6		U	0.500	0.250	
1,1,1-Trichloroethane	71-55-6	3.35		1.00	0.250	
1,1,2,2-Tetrachloroethane	79-34-5		U	0.500	0.125	
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250	
1,1-Dichloroethane	75-34-3	1.72		1.00	0.125	
1,1-Dichloroethene	75-35-4		U	1.00	0.500	
1,1-Dichloropropene	563-58-6		U	1.00	0.250	
1,2,3-Trichlorobenzene	87-61-6		U	1.00	0.125	
1,2,3-Trichloropropane	96-18-4		U	1.00	0.500	
1,2,4-Trichlorobenzene	120-82-1		U	1.00	0.200	
1,2,4-Trimethylbenzene	95-63-6		U	1.00	0.250	
1,2-Dichloroethane	107-06-2		U	0.500	0.250	
1,2-Dichlorobenzene	95-50-1		U	1.00	0.125	
1,2-Dibromo-3-chloropropane	96-12-8		U	2.00	1.00	
1,2-Dichloropropane	78-87-5		U	1.00	0.200	
1,2-Dibromoethane	106-93-4		U	1.00	0.250	
1,3,5-Trimethylbenzene	108-67-8		U	1.00	0.250	
1,3-Dichlorobenzene	541-73-1		U	1.00	0.250	
1,3-Dichloropropane	142-28-9		U	0.400	0.200	
1,4-Dichlorobenzene	106-46-7		U	0.500	0.125	
1-Chlorohexane	544-10-5		U	1.00	0.125	
2,2-Dichloropropane	594-20-7		U	1.00	0.250	
2-Chlorotoluene	95-49-8		U	1.00	0.125	
4-Chlorotoluene	106-43-4		U	1.00	0.250	
Acetone	67-64-1		~~R~~	10.0	2.50	UJ
Benzene	71-43-2		U	0.400	0.125	
Bromobenzene	108-86-1		U	1.00	0.125	
Bromochloromethane	74-97-5		U	1.00	0.200	
Bromodichloromethane	75-27-4		U	0.500	0.250	
Bromoform	75-25-2		U	1.00	0.500	
Bromomethane	74-83-9		U	3.00	0.500	
Carbon tetrachloride	56-23-5		U	1.00	0.250	
Chlorobenzene	108-90-7		U	0.500	0.125	
Chloroethane	75-00-3		U	1.00	0.500	
Chloroform	67-66-3		U	0.300	0.125	
Chloromethane	74-87-3		U	1.00	0.250	
cis-1,2-Dichloroethene	156-59-2	2.65		1.00	0.250	
cis-1,3-Dichloropropene	10061-01-5		U	0.500	0.250	
Dibromochloromethane	124-48-1		U	0.500	0.250	
Dibromomethane	74-95-3		U	1.00	0.250	
Dichlorodifluoromethane	75-71-8		U	1.00	0.250	
Ethylbenzene	100-41-4		U	1.00	0.250	
Hexachlorobutadiene	87-68-3		U	0.600	0.250	
Isopropylbenzene	98-82-8		U	1.00	0.250	
Methylene chloride	75-09-2	0.269	~~J~~	1.00	0.250	J
Methyl t-butyl ether (MTBE)	1634-04-4		U	5.00	0.500	
MEK (2-Butanone)	78-93-3		U	10.0	2.50	
MIBK (methyl isobutyl ketone)	108-10-1		U	10.0	2.50	

12/6/06
DL

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-07
Client ID: 59SW4WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 16:50
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 18:20
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 18:20
File ID: 8M331913

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8		U	1.00	0.250
n-Propylbenzene	103-65-1		U	1.00	0.125
m-,p-Xylene	136777-61-2		U	2.00	0.500
Naphthalene	91-20-3		U	1.00	0.200
o-Xylene	95-47-6		U	1.00	0.250
p-Isopropyltoluene	99-87-6		U	1.00	0.250
sec-Butylbenzene	135-98-8		U	1.00	0.250
Styrene	100-42-5		U	1.00	0.125
Trichloroethene	79-01-6	5.62		1.00	0.250
tert-Butylbenzene	98-06-6		U	1.00	0.250
Tetrachloroethene	127-18-4	0.664	~~F~~ J	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Trichlorofluoromethane	75-69-4		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	89.9	85	115	
1,2-Dichloroethane-d4	89.9	72	119	
Toluene-d8	97.7	81	120	
4-Bromofluorobenzene	94.4	76	119	

F The analyte was positively identified, but the quantitation was below the RL.
R Because of quality control deficiences for this analyte, this data may be rejected.
U Undetected; the analyte was analyzed for, but not detected.

DC 12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-08
Client ID: 59SW7WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 18:00
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 18:50
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 18:50
File ID: 8M331914

Analyte	CAS. Number	Result	Qual	RL	MDL	
1,1,1,2-Tetrachloroethane	630-20-6		U	0.500	0.250	
1,1,1-Trichloroethane	71-55-6	1.19		1.00	0.250	
1,1,2,2-Tetrachloroethane	79-34-5		U	0.500	0.125	
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250	
1,1-Dichloroethane	75-34-3	0.429	~~P~~	1.00	0.125	J
1,1-Dichloroethene	75-35-4		U	1.00	0.500	
1,1-Dichloropropene	563-58-6		U	1.00	0.250	
1,2,3-Trichlorobenzene	87-61-6		U	1.00	0.125	
1,2,3-Trichloropropane	96-18-4		U	1.00	0.500	
1,2,4-Trichlorobenzene	120-82-1		U	1.00	0.200	
1,2,4-Trimethylbenzene	95-63-6		U	1.00	0.250	
1,2-Dichloroethane	107-06-2		U	0.500	0.250	
1,2-Dichlorobenzene	95-50-1		U	1.00	0.125	
1,2-Dibromo-3-chloropropane	96-12-8		U	2.00	1.00	
1,2-Dichloropropane	78-87-5		U	1.00	0.200	
1,2-Dibromoethane	106-93-4		U	1.00	0.250	
1,3,5-Trimethylbenzene	108-67-8		U	1.00	0.250	
1,3-Dichlorobenzene	541-73-1		U	1.00	0.250	
1,3-Dichloropropane	142-28-9		U	0.400	0.200	
1,4-Dichlorobenzene	106-46-7		U	0.500	0.125	
1-Chlorohexane	544-10-5		U	1.00	0.125	
2,2-Dichloropropane	594-20-7		U	1.00	0.250	
2-Chlorotoluene	95-49-8		U	1.00	0.125	
4-Chlorotoluene	106-43-4		U	1.00	0.250	
Acetone	67-64-1		~~P~~	10.0	2.50	J
Benzene	71-43-2		U	0.400	0.125	
Bromobenzene	108-86-1		U	1.00	0.125	
Bromochloromethane	74-97-5		U	1.00	0.200	
Bromodichloromethane	75-27-4		U	0.500	0.250	
Bromoform	75-25-2		U	1.00	0.500	
Bromomethane	74-83-9		U	3.00	0.500	
Carbon tetrachloride	56-23-5		U	1.00	0.250	
Chlorobenzene	108-90-7		U	0.500	0.125	
Chloroethane	75-00-3		U	1.00	0.500	
Chloroform	67-66-3		U	0.300	0.125	
Chloromethane	74-87-3		U	1.00	0.250	
cis-1,2-Dichloroethene	156-59-2	1.72		1.00	0.250	
cis-1,3-Dichloropropene	10061-01-5		U	0.500	0.250	
Dibromochloromethane	124-48-1		U	0.500	0.250	
Dibromomethane	74-95-3		U	1.00	0.250	
Dichlorodifluoromethane	75-71-8		U	1.00	0.250	
Ethylbenzene	100-41-4		U	1.00	0.250	
Hexachlorobutadiene	87-68-3		U	0.600	0.250	
Isopropylbenzene	98-82-8		U	1.00	0.250	
Methylene chloride	75-09-2		U	1.00	0.250	
Methyl t-butyl ether (MTBE)	1634-04-4		U	5.00	0.500	
MEK (2-Butanone)	78-93-3		U	10.0	2.50	
MIBK (methyl isobutyl ketone)	108-10-1		U	10.0	2.50	

DL 12/6/06

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-08
Client ID: 59SW7WG1
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 18:00
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 18:50
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 18:50
File ID: 8M331914

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8		U	1.00	0.250
n-Propylbenzene	103-65-1		U	1.00	0.125
m-,p-Xylene	136777-61-2		U	2.00	0.500
Naphthalene	91-20-3		U	1.00	0.200
o-Xylene	95-47-6		U	1.00	0.250
p-Isopropyltoluene	99-87-6		U	1.00	0.250
sec-Butylbenzene	135-98-8		U	1.00	0.250
Styrene	100-42-5		U	1.00	0.125
Trichloroethene	79-01-6	1.43		1.00	0.250
tert-Butylbenzene	98-06-6		U	1.00	0.250
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Trichlorofluoromethane	75-69-4		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	89.3	85	115	
1,2-Dichloroethane-d4	92.7	72	119	
Toluene-d8	95.5	81	120	
4-Bromofluorobenzene	95.6	76	119	

F The analyte was positively identified, but the quantitation was below the RL.
R Because of quality control deficiences for this analyte, this data may be rejected.
U Undetected; the analyte was analyzed for, but not detected.

12/6/06 DC

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-09
Client ID: 59SW7WG9
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 18:00
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 19:21
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 19:21
File ID: 8M331915

Analyte	CAS. Number	Result	Qual	RL	MDL	
1,1,1,2-Tetrachloroethane	630-20-6		U	0.500	0.250	
1,1,1-Trichloroethane	71-55-6	1.21		1.00	0.250	
1,1,2,2-Tetrachloroethane	79-34-5		U	0.500	0.125	
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250	
1,1-Dichloroethane	75-34-3	0.464	~~R~~	1.00	0.125	J
1,1-Dichloroethene	75-35-4		U	1.00	0.500	
1,1-Dichloropropene	563-58-6		U	1.00	0.250	
1,2,3-Trichlorobenzene	87-61-6		U	1.00	0.125	
1,2,3-Trichloropropane	96-18-4		U	1.00	0.500	
1,2,4-Trichlorobenzene	120-82-1		U	1.00	0.200	
1,2,4-Trimethylbenzene	95-63-6		U	1.00	0.250	
1,2-Dichloroethane	107-06-2		U	0.500	0.250	
1,2-Dichlorobenzene	95-50-1		U	1.00	0.125	
1,2-Dibromo-3-chloropropane	96-12-8		U	2.00	1.00	
1,2-Dichloropropane	78-87-5		U	1.00	0.200	
1,2-Dibromoethane	106-93-4		U	1.00	0.250	
1,3,5-Trimethylbenzene	108-67-8		U	1.00	0.250	
1,3-Dichlorobenzene	541-73-1		U	1.00	0.250	
1,3-Dichloropropane	142-28-9		U	0.400	0.200	
1,4-Dichlorobenzene	106-46-7		U	0.500	0.125	
1-Chlorohexane	544-10-5		U	1.00	0.125	
2,2-Dichloropropane	594-20-7		U	1.00	0.250	
2-Chlorotoluene	95-49-8		U	1.00	0.125	
4-Chlorotoluene	106-43-4		U	1.00	0.250	
Acetone	67-64-1		~~R~~	10.0	2.50	UJ
Benzene	71-43-2		U	0.400	0.125	
Bromobenzene	108-86-1		U	1.00	0.125	
Bromochloromethane	74-97-5		U	1.00	0.200	
Bromodichloromethane	75-27-4		U	0.500	0.250	
Bromoform	75-25-2		U	1.00	0.500	
Bromomethane	74-83-9		U	3.00	0.500	
Carbon tetrachloride	56-23-5		U	1.00	0.250	
Chlorobenzene	108-90-7		U	0.500	0.125	
Chloroethane	75-00-3		U	1.00	0.500	
Chloroform	67-66-3		U	0.300	0.125	
Chloromethane	74-87-3		U	1.00	0.250	
cis-1,2-Dichloroethene	156-59-2	1.98		1.00	0.250	
cis-1,3-Dichloropropene	10061-01-5		U	0.500	0.250	
Dibromochloromethane	124-48-1		U	0.500	0.250	
Dibromomethane	74-95-3		U	1.00	0.250	
Dichlorodifluoromethane	75-71-8		U	1.00	0.250	
Ethylbenzene	100-41-4		U	1.00	0.250	
Hexachlorobutadiene	87-68-3		U	0.600	0.250	
Isopropylbenzene	98-82-8		U	1.00	0.250	
Methylene chloride	75-09-2		U	1.00	0.250	
Methyl t-butyl ether (MTBE)	1634-04-4		U	5.00	0.500	
MEK (2-Butanone)	78-93-3		U	10.0	2.50	
MIBK (methyl isobutyl ketone)	108-10-1		U	10.0	2.50	

12/6/06
DL

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-09
Client ID: 59SW7WG9
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 18:00
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 19:21
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 19:21
File ID: 8M331915

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8		U	1.00	0.250
n-Propylbenzene	103-65-1		U	1.00	0.125
m-,p-Xylene	136777-61-2		U	2.00	0.500
Naphthalene	91-20-3		U	1.00	0.200
o-Xylene	95-47-6		U	1.00	0.250
p-Isopropyltoluene	99-87-6		U	1.00	0.250
sec-Butylbenzene	135-98-8		U	1.00	0.250
Styrene	100-42-5		U	1.00	0.125
Trichloroethene	79-01-6	1.56		1.00	0.250
tert-Butylbenzene	98-06-6		U	1.00	0.250
Tetrachloroethene	127-18-4	0.260	~~F~~	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Trichlorofluoromethane	75-69-4		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250

J

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	92.3	85	115	
1,2-Dichloroethane-d4	95.0	72	119	
Toluene-d8	96.8	81	120	
4-Bromofluorobenzene	94.6	76	119	

F The analyte was positively identified, but the quantitation was below the RL.
R Because of quality control deficiences for this analyte, this data may be rejected.
U Undetected; the analyte was analyzed for, but not detected.

12/6/06
DC

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-10
Client ID: TB110106
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 00:01
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 11:09
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 11:09
File ID: 8M331899

Analyte	CAS. Number	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		U	0.500	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		U	0.500	0.125
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
1,1-Dichloroethane	75-34-3		U	1.00	0.125
1,1-Dichloroethene	75-35-4		U	1.00	0.500
1,1-Dichloropropene	563-58-6		U	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		U	1.00	0.125
1,2,3-Trichloropropane	96-18-4		U	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		U	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		U	1.00	0.250
1,2-Dichloroethane	107-06-2		U	0.500	0.250
1,2-Dichlorobenzene	95-50-1		U	1.00	0.125
1,2-Dibromo-3-chloropropane	96-12-8		U	2.00	1.00
1,2-Dichloropropane	78-87-5		U	1.00	0.200
1,2-Dibromoethane	106-93-4		U	1.00	0.250
1,3,5-Trimethylbenzene	108-67-8		U	1.00	0.250
1,3-Dichlorobenzene	541-73-1		U	1.00	0.250
1,3-Dichloropropane	142-28-9		U	0.400	0.200
1,4-Dichlorobenzene	106-46-7		U	0.500	0.125
1-Chlorohexane	544-10-5		U	1.00	0.125
2,2-Dichloropropane	594-20-7		U	1.00	0.250
2-Chlorotoluene	95-49-8		U	1.00	0.125
4-Chlorotoluene	106-43-4		U	1.00	0.250
Acetone	67-64-1		~~U~~	10.0	2.50
Benzene	71-43-2		U	0.400	0.125
Bromobenzene	108-86-1		U	1.00	0.125
Bromochloromethane	74-97-5		U	1.00	0.200
Bromodichloromethane	75-27-4		U	0.500	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	3.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7		U	0.500	0.125
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	0.300	0.125
Chloromethane	74-87-3		U	1.00	0.250
cis-1,2-Dichloroethene	156-59-2		U	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		U	0.500	0.250
Dibromochloromethane	124-48-1		U	0.500	0.250
Dibromomethane	74-95-3		U	1.00	0.250
Dichlorodifluoromethane	75-71-8		U	1.00	0.250
Ethylbenzene	100-41-4		U	1.00	0.250
Hexachlorobutadiene	87-68-3		U	0.600	0.250
Isopropylbenzene	98-82-8		U	1.00	0.250
Methylene chloride	75-09-2	1.63		1.00	0.250
Methyl t-butyl ether (MTBE)	1634-04-4		U	5.00	0.500
MEK (2-Butanone)	78-93-3		U	10.0	2.50
MIBK (methyl isobutyl ketone)	108-10-1		U	10.0	2.50

UJ

12/6/06
DC

Report Number: L0611082
Report Date : November 14, 2006

Sample Number: L0611082-10
Client ID: TB110106
Matrix: Water
Workgroup Number: WG227038
Collect Date: 11/01/2006 00:01
Sample Tag: 01

PrePrep Method: NONE
Prep Method: 5030B
Analytical Method: 8260B
Analyst: CMS
Dilution: 1
Units: ug/L

Instrument: HPMS8
Prep Date: 11/08/2006 11:09
Cal Date: 11/03/2006 21:42
Run Date: 11/08/2006 11:09
File ID: 8M331899

Analyte	CAS. Number	Result	Qual	RL	MDL
n-Butylbenzene	104-51-8		U	1.00	0.250
n-Propylbenzene	103-65-1		U	1.00	0.125
m-,p-Xylene	136777-61-2		U	2.00	0.500
Naphthalene	91-20-3		U	1.00	0.200
o-Xylene	95-47-6		U	1.00	0.250
p-Isopropyltoluene	99-87-6		U	1.00	0.250
sec-Butylbenzene	135-98-8		U	1.00	0.250
Styrene	100-42-5		U	1.00	0.125
Trichloroethene	79-01-6		U	1.00	0.250
tert-Butylbenzene	98-06-6		U	1.00	0.250
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Trichlorofluoromethane	75-69-4		U	1.00	0.250
Vinyl chloride	75-01-4		U	1.00	0.250

Surrogate	% Recovery	Lower	Upper	Qual
Dibromofluoromethane	90.6	85	115	
1,2-Dichloroethane-d4	92.1	72	119	
Toluene-d8	97.5	81	120	
4-Bromofluorobenzene	94.5	76	119	

R Because of quality control deficiences for this analyte, this data may be rejected.
U Undetected; the analyte was analyzed for, but not detected.

12/6/06
DC

APPENDIX E
Data Validation Review Summary and Soil-Gas Analytical Data

Table 4
Summary of Detected VOCs in Soil Gas Samples
November 2006

Location ID **Date Sampled**	**SG-03** **10/30/2006**	**SG-04** **10/30/2006**	**SG-05** **10/30/2006**	**SG-07** **10/30/2006**	**SG-09** **10/30/2006**	**SG-11** **10/30/2006**	**SG-13** **10/30/2006**
Analyte	**Volatiles by EPA Method TO15 (µg/m^3)**						
1,1,1-Trichloroethane	10.9U	10.9U	**3 J**	**8.2 J**	**251**	**25.6**	10.9U
1,1-Dichloroethane	8.1U	8.1U	8.1U	8.1U	**8.1**	8.1U	8.1U
Benzene	**3.5 J**	6.4U	**1.8 J**	**5.1 J**	**179**	6.4U	**2.4 J**
Chloroform	9.8U	9.8U	9.8U	**2.7 J**	**9.8**	9.8U	9.8U
Chloromethane	10.3U	10.3U	10.3U	10.3U	10.3U	10.3U	10.3U
Ethylbenzene	8.7U	8.7U	8.7U	**7.8 J**	**70**	8.7U	**7 J**
m,p-Xylene	**8.3 J**	**4.3 J**	**4.8 J**	**27.4**	**243**	**3.5 J**	**27.4**
Methylene Chloride	**2.4 J**	**2.6 J**	**2.3 J**	**2.4 J**	**15.6 J**	**2.3 J**	**4.2 J**
o-Xylene	**3.1 J**	8.7U	8.7U	**9.6**	**74**	8.7U	**9.6**
Styrene	8.5U	8.5U	8.5U	8.5U	**17.5**	8.5U	**2.9 J**
Tetrachloroethene	13.6U	13.6U	13.6U	13.6U	**19**	**2.4 J**	13.6U
Toluene	**7.5**	**3.8 J**	**5.7 J**	**68**	**294**	**3.3 J**	**21.1**
Trichloroethene	10.8U	10.8U	**1.8 J**	10.8U	**699**	**33.3**	10.8U

Table 4
Summary of Detected VOCs in Soil Gas Samples (Continued)
November 2006

Location ID Date Sampled	SG-14 10/30/2006	SG-15 10/30/2006	SG-16 10/30/2006	SG-17 10/30/2006	SG-17 (DUP) 10/30/2006	SG-18 10/30/2006	SG-18 (DUP) 10/30/2006
Analyte	**Volatiles by EPA Method TO15 (µg/m^3)**						
1,1,1-Trichloroethane	10.9U	**35**	10.9U	10.9U	10.9U	10.9U	10.9U
1,1-Dichloroethane	8.1U	8.1U	8.1U	8.1U	8.1U	8.1U	8.1U
Benzene	**3.5 J**	**1.9 J**	**2 J**	**3.2 J**	**4.2 J**	**1.8 J**	**2.2 J**
Chloroform	9.8U	**6.8 J**	9.8U	9.8U	9.8U	9.8U	9.8U
Chloromethane	10.3U	10.3U	10.3U	10.3U	10.3U	10.3U	10.3U
Ethylbenzene	**2.7 J**	8.7U	**8.7**	**4.3 J**	**5.2 J**	**2.7 J**	**3.1 J**
m,p-Xylene	**10.4**	**7.4 J**	**34.3**	**15.2**	**17.4**	**9.6**	**11.3**
Methylene Chloride	**2.4 J**	**2.3 J**	**3.5 J**	**2.5 J**	**3.1 J**	**2.6 J**	**2.6 J**
o-Xylene	**3.8 J**	**2.7 J**	**12.2**	**5.2 J**	**7 J**	**3.5 J**	**4.3 J**
Styrene	8.5U	8.5U	8.5U	8.5U	8.5U	8.5U	8.5U
Tetrachloroethene	13.6U	13.6U	13.6U	13.6U	13.6U	13.6U	13.6U
Toluene	**10.6**	**7.5**	**45.2**	**19.6**	**23**	**9**	**11**
Trichloroethene	10.8U	**10.8**	10.8U	10.8U	10.8U	10.8U	10.8U

Table 4
Summary of Detected VOCs in Soil Gas Samples (Continued)
November 2006

Location ID Date Sampled	SG-19 10/30/2006	SG-20 10/30/2006	SG-21 10/30/2006	SG-22 10/30/2006	SG-23 10/30/2006	SG-25 10/31/2006	SG-26 10/31/2006
Analyte	**Volatiles by EPA Method TO15 (µg/m^3)**						
1,1,1-Trichloroethane	10.9U	**2.2 J**	**5.5 J**	**18.6**	10.9U	10.4U	10.9U
1,1-Dichloroethane	8.1U	8.1U	8.1U	8.1U	8.1U	7.7U	8.1U
Benzene	**2.9 J**	**32**	6.4U	**1.6 J**	6.4U	**5.4 J**	**15.7**
Chloroform	9.8U	9.8U	9.8U	9.8U	9.8U	9.3U	9.8U
Chloromethane	**4.8 J**	**5.6 J**	10.3U	10.3U	10.3U	9.7U	10.3U
Ethylbenzene	**8.3 J**	**29.1**	8.7U	**3 J**	8.7U	**5.7 J**	**10.4**
m,p-Xylene	**31.7**	**109**	**4.8 J**	**11.3**	**4.3 J**	**19.5**	**39.1**
Methylene Chloride	**4.2 J**	**7.6 J**	**2.3 J**	**2.4 J**	2.1U	**4.2 J**	**3.1 J**
o-Xylene	**10.9**	**37**	8.7U	4.3 J	8.7U	**7.8 J**	**14.3**
Styrene	**2.6 J**	**9.4**	8.5U	8.5U	8.5U	8.1U	**2.6 J**
Tetrachloroethene	13.6U	13.6U	13.6U	13.6U	13.6U	12.9U	13.6U
Toluene	**25.6**	**98**	**4.2 J**	**8.3**	**4.2 J**	**25.6**	**52.8**
Trichloroethene	10.8U	10.8U	10.8U	10.8U	**1.8 J**	**2.2 J**	10.8U

Table 4
Summary of Detected VOCs in Soil Gas Samples (Continued)
November 2006

Location ID Date Sampled	SG-28 10/31/2006	SG-29 10/31/2006	SG-30 10/31/2006	SG-31 10/31/2006	SG-31 (DUP) 10/31/2006
Analyte	**Volatiles by EPA Method TO15 (µg/m^3)**				
1,1,1-Trichloroethane	10.9U	10.9U	10.9U	**2.5 J**	**3.1 J**
1,1-Dichloroethane	8.1U	8.1U	8.1U	8.1U	8.1U
Benzene	**6.7**	**5.1 J**	**6.7**	**12.1**	**15.3**
Chloroform	9.8U	9.8U	9.8U	9.8U	9.8U
Chloromethane	**5.6 J**	**4.1 J**	10.3U	10.3U	10.3U
Ethylbenzene	**4.2 J**	**4.8 J**	**6.1 J**	**14 J**	**20 J**
m,p-Xylene	**14**	**16.1**	**21.7**	**47.8 J**	**65.1 J**
Methylene Chloride	**3.1 J**	**2.7 J**	**4.5 J**	**22**	**23**
o-Xylene	**5.2 J**	**6.1 J**	**7.8 J**	**15.2 J**	**21.3 J**
Styrene	8.5U	8.5U	**1.8 J**	**9.4**	**12.8**
Tetrachloroethene	13.6U	13.6U	13.6U	13.6U	13.6U
Toluene	**18.1**	**20.7**	**34.7**	**67.8 J**	**90.4 J**
Trichloroethene	10.8U	10.8U	10.8U	**2 J**	**2.5 J**

Key: U = Analyte was analyzed for but not detected. The associated numerical value is at or below the method detection limit (MDL).
J = The analyte was positively identified, but the quantitation is an estimation.

Note: Concentrations in bold font indicate the analyte was detected above the associated MDL.

Table 5
Summary of Reporting Limits for VOCs in Soil Gas Method Blank Samples
November 2006

Location ID Date Sampled	Lab QC 11/7/2006	Lab QC 11/10/2006	Lab QC 11/13/2006
Analyte	**Volatiles by EPA Method TO15 (µg/m^3)**		
1,1,1-Trichloroethane	1.1U	1.1U	0.4U
1,1-Dichloroethane	0.8U	0.8U	0.3U
Benzene	0.6U	0.6U	0.3U
Chloroform	1U	1U	0.4U
Chloromethane	1U	1U	0.4U
Ethylbenzene	0.9U	0.9U	0.4U
m,p-Xylene	0.9U	0.9U	0.4U
Methylene Chloride	**1.7J**	**1.7 J**	**0.7 J**
o-Xylene	0.9U	0.9U	0.4U
Styrene	0.9U	0.9U	0.3U
Tetrachloroethene	1.4U	1.4U	0.5U
Toluene	0.8U	0.8U	0.3U
Trichloroethene	1.1U	1.1U	0.4U

Key: U = Analyte was analyzed for but not detected. The associated numerical value represents the reporting limit (RL).
J = The analyte was positively identified, but the quantitation is an estimation.

Note: Concentrations in bold font indicate the analyte was detected above the associated MDL.

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TABLES

APPENDICES

1.0 INTRODUCTION

This data quality review pertains to twenty-six soil gas samples collected in November 2006 at Air Force Plant 59 (AFP59) in New York. Parameters evaluated included the total concentration of volatile organic constituents (VOC). The samples were analyzed by Severn Trent Laboratories, Knoxville, Tennessee.

Data quality review is an after-the-fact technical review of analytical data whereby the quality and usability of the data are determined based on a set of predefined criteria. These criteria depend upon the type of data involved and the purpose for which those data were collected. Data quality review assesses whether and to what extent specified criteria were met, and places restrictions on data use based on quality parameters. The data quality review process can range from a cursory review used to detect out-of-control situations to a detailed evaluation, depending on the analytical protocol, the associated quality control samples collected, and the intended data use.

Specific criteria for data quality review may include, but are not limited to: technical holding times, analysis of blanks, surrogate spike recovery, analysis of duplicates, and reported practical quantitation limits (PQLs). Where applicable, the recommendations of USEPA SW-846 *Test Methods for Evaluating Solid Waste* (Third Edition, December 1996) or USEPA *Methods for Chemical Analysis of Water and Wastes* (Revised March 1983) analytical method requirements, USEPA *CLP National Functional Guidelines for Organic and Inorganic Data Review* (February 1994, *Functional Guidelines*) data review guidance, and professional judgment.

Table 1 presents the data qualifiers applied during this review effort and their meanings.

Table 1
Data Qualifiers

Qualifier	Description
J	This is an estimated value.
U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

Table 2 provides a cross-reference list for field sample IDs and lab Sample Identifications.

Table 2
Field Sample ID/Lab Sample ID Cross Reference
SDG H6K020103

Sample Identification	Lab Identification	Sample Identification	Lab Identification
SG-03	H6K020103-001	SG-19	H6K020103-017
SG-04	H6K020103-002	SG-20	H6K020103-018
SG-05	H6K020103-003	SG-21	H6K020103-019
SG-07	H6K020103-005	SG-22	H6K020103-020
SG-09	H6K020103-007	SG-23	H6K020103-021
SG-11	H6K020103-009	SG-25	H6K020103-023
SG-13	H6K020103-011	SG-26	H6K020103-024
SG-14	H6K020103-012	SG-28	H6K020103-026
SG-15	H6K020103-013	SG-29	H6K020103-027
SG-16	H6K020103-014	SG-30	H6K020103-028
SG-17	H6K020103-015	SG-31	H6K020103-029
SG-17 DUP	H6K020103-015		
SG-18	H6K020103-016		
SG-18 DUP	H6K020103-016		

During the data quality review process, laboratory qualified and unqualified data are verified against all available supporting documentation. Based on this review, qualifier codes may be added, deleted, or modified by the validator. Final results are therefore either qualified or unqualified. (Note: In those cases where the laboratory added a "N.D." flag indicated a non-detect result, and the validator agrees with this flag, and replaces it with a "U" qualifier as noted on the corresponding Results Summary Forms.) Changes to the data are reflected on the Results Summary Forms in Appendix A.

2.0 VOLATILE ORGANIC CONSTITUENTS

Volatile organic constituents were analyzed using EPA Method TO-15. Hand-annotated data summary sheets (referred to as Results Summary Forms) are provided as Appendix A.

Results are reported on both a ug/m^3 and part per billion per volume (ppbv) basis.

2.1 Holding Times

Holding times were met for all samples. No qualification is needed.

2.2 Calibration

For the Initial Calibration, none of the target analytes exhibited a %RSD greater than 30%. The %D values associated with the second source calibration were less than 30% except for cis-1,3-dichloropropene. Cis-1,3-dichloropropene was not detected in any of the environmental samples so no qualification is needed.

The % D values associated with the continuing calibration standard were within 30% for all analytes so, no qualification is needed.

It is noted that for those results which were less than the PQL but greater than the MDL, the laboratory assigned an F flag, indicating an estimated value. Thus, the data validator replaces the "F" flag with a **J** qualifier unless the result has been qualified otherwise by the validator.

2.3 Laboratory Control Samples

Constituent recoveries were within control limits in the associated laboratory control sample. No qualification is needed.

2.4 Blanks

Method blank JJEKG1AA (SG-03, SG-04, SG-05, SG-07, SG-09, SG-11, SG-13, SG-14, SG-15, SG-16, SG-17, and SG-17 DUP) had a 0.061 methylene chloride detect. The validator qualifies **U** any positive methylene chloride result less than or equal to 0.61 ug/L.

Method blank JJLTC1AA (SG-18, SG-18 DUP, SG-19, SG-20, SG-21, SG-22, SG-23, SG-25, SG-26, SG-28, SG-29, and SG-30) had a 0.064 methylene chloride detect. The validator qualifies **U** any positive methylene chloride result less than or equal to 0.64 ug/L.

Method blank JJWON1AA (SG-31, and SG-31 DUP) had a 0.038 methylene chloride detect. The validator qualifies **U** any positive methylene chloride result less than or equal to 0.38 ug/L.

2.5 Matrix Spike/Matrix Spike Duplicate

There was no MS/MSD sample in this batch. No qualification is needed.

2.6 Surrogate Recovery

Recoveries of surrogate compounds were within control limits for the samples and the associated quality control samples. No qualification is needed.

2.7 Field Duplicates

A field duplicate was collected for sample SG-17, SG-18, and SG-31. One of two criteria was followed when evaluating field duplicates, depending on the amount detected. If the amount detected was greater than five times the reporting limit (RL), then the relative percent difference (RPD) should have been less than 25 percent. If the amount was less than five times the RL, then the difference between the duplicate and the sample concentrations should have been less than the RL. Agreement is excellent and no qualification is needed except for m-xylene & p-xylene; o-xylene; toluene; and ethylbenzene in sample SG-31. The validator qualifies **J** these analytes in sample SG-31.

A comparison of field sample and duplicate is presented in Table 3.

Table 3
Duplicate Comparison (ppbv)

Analyte	*Reporting Limit*	*SG-17*	*SG-17 DUP*	*RPD*
Benzene	*1.0*	*1.0*	*1.3*	*21%*
m-xylene & p-xylene	*2.0*	*3.5*	*4.0*	*14%*
o-xylene	*1.0*	*1.2*	*1.6*	*25%*
Toluene	*2.0*	*5.2*	*6.1*	*17%*
Ethylbenzene	*2.0*	*1.0*	*1.2*	*12%*
Methylene chloride	*1.0*	*0.73*	*0.88*	*18%*

Analyte	*Reporting Limit*	*SG-18*	*SG-18 DUP*	*RPD*
Benzene	*1.0*	*0.55*	*0.68*	*21%*
m-xylene & p-xylene	*2.0*	*2.2*	*2.6*	*16%*
o-xylene	*1.0*	*0.80*	*0.98*	*20%*
Toluene	*2.0*	*2.4*	*2.9*	*17%*
Ethylbenzene	*1.0*	*0.63*	*0.72*	*13%*
Methylene chloride	*1.0*	*0.75*	*0.74*	*0.34%*

Analyte	*Reporting Limit*	*SG-31*	*SG-31 DUP*	*RPD*
1,1,1-TCA	*2.0*	*0.46*	*0.56*	*18%*
Benzene	*1.0*	*3.8*	*4.8*	*23%*
Styrene	*2.0*	*2.2*	*3.0*	*32%*
TCE	*2.0*	*0.38*	*0.47*	*20%*
m-xylene & p-xylene	*2.0*	*11*	*15*	*33%*
o-xylene	*1.0*	*3.5*	*4.9*	*33%*
Toluene	*2.0*	*18*	*24*	*32%*
Ethylbenzene	*1.0*	*3.2*	*4.6*	*35%*
Methylene chloride	*1.0*	*6.3*	*6.7*	*7%*

2.8 Summary

The data are acceptable with validator-assigned qualifiers.

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 001
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQNF1AA Date Extracted:11/07/06
Dilution factor: 10 Date Analyzed: 11/07/06

QC Batch: 6314132

Client Sample Id: SG-03

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**1.1**	**F**	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**1.9**	**F**	J
95-47-6	**o-Xylene**	**0.71**	**F**	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**2.0**		
100-41-4	Ethylbenzene	2.0	U	
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.68**	**F B**	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 002
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQNG1AA Date Extracted: 11/07/06
Dilution factor: 10 Date Analyzed: 11/07/06

QC Batch: 6314132

Client Sample Id: SG-04

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	2.0	U	
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	m-Xylene & p-Xylene	1.0	F	J
95-47-6	o-Xylene	2.0	U	
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	Toluene	1.0	F	J
100-41-4	Ethylbenzene	2.0	U	
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	Methylene chloride	0.74	~~F~~ B	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC 12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 003
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQNH1AA Date Extracted: 11/07/06
Dilution factor: 10 Date Analyzed: 11/07/06

QC Batch: 6314132

Client Sample Id: SG-05

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	**1,1,1-Trichloroethane**	**0.55**	**F**	J
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**0.55**	**F**	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	**Trichloroethene**	**0.34**	**F**	J
136777-61-2	**m-Xylene & p-Xylene**	**1.1**	**F**	J
95-47-6	o-Xylene	2.0	U	
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**1.5**	**F**	J
100-41-4	Ethylbenzene	2.0	U	
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.67**	**F B**	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 005
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQNL1AA Date Extracted: 11/07/06
Dilution factor: 10 Date Analyzed: 11/07/06

QC Batch: 6314132

Client Sample Id: SG-07

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	1.5	~~F~~	J
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	1.6	~~F~~	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	0.56	~~F~~	J
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	m-Xylene & p-Xylene	6.3		
95-47-6	o-Xylene	2.2		
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	Toluene	18		
100-41-4	Ethylbenzene	1.8	~~F~~	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	Methylene chloride	0.69	~~F B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

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12/19/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 007
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQNN1AA Date Extracted:11/07/06
Dilution factor: 10 Date Analyzed: 11/07/06

QC Batch: 6314132

Client Sample Id: SG-09

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	**1,1,1-Trichloroethane**	**46**		
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**56**		
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	**Chloroform**	**2.0**		
100-42-5	**Styrene**	**4.1**		
79-01-6	**Trichloroethene**	**130**		
136777-61-2	**m-Xylene & p-Xylene**	**56**		
95-47-6	**o-Xylene**	**17**		
127-18-4	**Tetrachloroethene**	**2.8**		
108-88-3	**Toluene**	**78**		
100-41-4	**Ethylbenzene**	**16**		
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**4.5**	~~F B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	**1,1-Dichloroethane**	**2.0**		
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

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12/19/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 009
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQNQ1AA Date Extracted:11/07/06
Dilution factor: 10 Date Analyzed: 11/07/06

QC Batch: 6314132

Client Sample Id: SG-11

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	**1,1,1-Trichloroethane**	**4.7**		
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	2.0	U	
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	**Trichloroethene**	**6.2**		
136777-61-2	**m-Xylene & p-Xylene**	**0.81**	**F**	J
95-47-6	o-Xylene	2.0	U	
127-18-4	**Tetrachloroethene**	**0.35**	**F**	J
108-88-3	**Toluene**	**0.88**	**F**	J
100-41-4	Ethylbenzene	2.0	U	
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.67**	**F B**	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 011
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQNV1AA Date Extracted:11/07/06
Dilution factor: 10 Date Analyzed: 11/08/06

QC Batch: 6314132

Client Sample Id: SG-13

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**0.75**	~~F~~	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	**Styrene**	**0.67**	~~F~~	J
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**6.3**		
95-47-6	**o-Xylene**	**2.2**		
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**5.6**		
100-41-4	**Ethylbenzene**	**1.6**	~~F~~	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**1.2**	~~F B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 012
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL
Work Order: JHQNW1AA
Dilution factor: 10

Date Received: 11/01/06
Date Extracted: 11/07/06
Date Analyzed: 11/08/06

QC Batch: 6314132

Client Sample Id: SG-14

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	1.1	~~P~~	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	m-Xylene & p-Xylene	2.4		
95-47-6	o-Xylene	0.87	~~P~~	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	Toluene	2.8		
100-41-4	Ethylbenzene	0.61	~~P~~	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	Methylene chloride	0.69	~~F B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 013
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQN01AA Date Extracted: 11/07/06
Dilution factor: 10 Date Analyzed: 11/08/06

QC Batch: 6314132

Client Sample Id: SG-15

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	**1,1,1-Trichloroethane**	**6.4**		
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**0.60**	F	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	**Chloroform**	**1.4**	F	J
100-42-5	Styrene	2.0	U	
79-01-6	**Trichloroethene**	**2.0**		
136777-61-2	**m-Xylene & p-Xylene**	**1.7**	F	J
95-47-6	**o-Xylene**	**0.62**	F	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**2.0**		
100-41-4	Ethylbenzene	2.0	U	
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.65**	F B	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 014
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQN31AA Date Extracted: 11/07/06
Dilution factor: 10 Date Analyzed: 11/08/06

QC Batch: 6314132

Client Sample Id: SG-16

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**0.64**	~~P~~	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**7.9**		
95-47-6	**o-Xylene**	**2.8**		
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**12**		
100-41-4	**Ethylbenzene**	**2.0**		
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**1.0**	~~F~~ ~~B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 015
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQN61AA Date Extracted: 11/07/06
Dilution factor: 10 Date Analyzed: 11/08/06

QC Batch: 6314132

Client Sample Id: SG-17

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**1.0**	~~F~~	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**3.5**		
95-47-6	**o-Xylene**	**1.2**	~~F~~	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**5.2**		
100-41-4	**Ethylbenzene**	**1.0**	~~F~~	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.73**	~~F B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 015
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL
Work Order: JHQN61AC

Date Received: 11/01/06
Date Extracted: 11/07/06
Date Analyzed: 11/08/06

Moisture %:

QC Batch: 6314132

Client Sample Id: SG-17 DUP

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	1.3	J	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	m-Xylene & p-Xylene	4.0		
95-47-6	o-Xylene	1.6	J	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	Toluene	6.1		
100-41-4	Ethylbenzene	1.2	J	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	Methylene chloride	0.88	J	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 016
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQN71AA Date Extracted:11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-18

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**0.55**	**F**	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**2.2**		
95-47-6	**o-Xylene**	**0.80**	**F**	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**2.4**		
100-41-4	**Ethylbenzene**	**0.63**	**F**	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.75**	**F B**	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 016
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQN71AC Date Extracted:11/10/06
Date Analyzed: 11/10/06

Moisture %:

QC Batch: 6317678

Client Sample Id: SG-18 DUP

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	0.68	F	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	m-Xylene & p-Xylene	2.6		
95-47-6	o-Xylene	0.98	F	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	Toluene	2.9		
100-41-4	Ethylbenzene	0.72	F	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	Methylene chloride	0.74	F	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 017
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQN81AA Date Extracted: 11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-19

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**0.92**	F	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	**Styrene**	**0.61**	F	J
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**7.3**		
95-47-6	**o-Xylene**	**2.5**		
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**6.8**		
100-41-4	**Ethylbenzene**	**1.9**	F	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**1.2**	F B	J
74-87-3	**Chloromethane**	**2.3**	F	J
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 018
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQN91AA Date Extracted: 11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-20

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	**1,1,1-Trichloroethane**	**0.40**	~~F~~	J
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**10**		
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	**Styrene**	**2.2**		
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**25**		
95-47-6	**o-Xylene**	**8.5**		
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**26**		
100-41-4	**Ethylbenzene**	**6.7**		
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**2.2**	~~F B~~	J J
74-87-3	**Chloromethane**	**2.7**	~~F~~	J
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC 12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 019
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQPA1AA Date Extracted: 11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-21

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	**1,1,1-Trichloroethane**	**1.0**	~~P~~	J
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	2.0	U	
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**1.1**	~~P~~	J
95-47-6	o-Xylene	2.0	U	
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**1.1**	~~P~~	J
100-41-4	Ethylbenzene	2.0	U	
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.67**	~~P B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 020
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQPC1AA Date Extracted:11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-22

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	**1,1,1-Trichloroethane**	**3.4**		
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**0.51**	~~P~~	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**2.6**		
95-47-6	**o-Xylene**	**0.99**	~~P~~	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**2.2**		
100-41-4	**Ethylbenzene**	**0.70**	~~P~~	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.70**	~~P B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 021
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQPD1AA Date Extracted:11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-23

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	2.0	U	
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	**Trichloroethene**	**0.34**	~~P~~	J
136777-61-2	**m-Xylene & p-Xylene**	**1.0**	~~P~~	J
95-47-6	o-Xylene	2.0	U	
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**1.1**	~~P~~	J
100-41-4	Ethylbenzene	2.0	U	
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.61**	~~P B~~	U
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 023
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQPF1AA Date Extracted:11/10/06
Dilution factor: 9.48 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-25

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	1.9	U	
108-90-7	Chlorobenzene	1.9	U	
10061-01-5	cis-1,3-Dichloropropene	1.9	U	
10061-02-6	trans-1,3-Dichloropropene	4.7	U	
71-55-6	1,1,1-Trichloroethane	1.9	U	
107-06-2	1,2-Dichloroethane	1.9	U	
106-93-4	1,2-Dibromoethane (EDB)	1.9	U	
71-43-2	**Benzene**	**1.7**	~~F~~	J
56-23-5	Carbon tetrachloride	1.9	U	
67-66-3	Chloroform	1.9	U	
100-42-5	Styrene	1.9	U	
79-01-6	**Trichloroethene**	**0.40**	~~F~~	J
136777-61-2	**m-Xylene & p-Xylene**	**4.5**		
95-47-6	**o-Xylene**	**1.8**	~~F~~	J
127-18-4	Tetrachloroethene	1.9	U	
108-88-3	**Toluene**	**6.8**		
100-41-4	**Ethylbenzene**	**1.3**	~~F~~	J
156-59-2	cis-1,2-Dichloroethene	2.8	U	
75-09-2	**Methylene chloride**	**1.2**	~~F B~~	J
74-87-3	Chloromethane	4.7	U	
75-00-3	Chloroethane	1.9	U	
75-01-4	Vinyl chloride	1.9	U	
79-34-5	1,1,2,2-Tetrachloroethane	1.9	U	
75-35-4	1,1-Dichloroethene	1.9	U	
79-00-5	1,1,2-Trichloroethane	1.9	U	
75-34-3	1,1-Dichloroethane	1.9	U	
78-87-5	1,2-Dichloropropane	1.9	U	
156-60-5	trans-1,2-Dichloroethene	2.8	U	

DC
12/19/07

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 024
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQPG1AA Date Extracted:11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-26

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**4.9**		
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	**Styrene**	**0.60**	~~F~~	J
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**9.0**		
95-47-6	**o-Xylene**	**3.3**		
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**14**		
100-41-4	**Ethylbenzene**	**2.4**		
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**0.89**	~~F B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

PC 12/14/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 026
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQPJ1AA Date Extracted: 11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-28

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	2.1		
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	m-Xylene & p-Xylene	3.2		
95-47-6	o-Xylene	1.2	~~F~~	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	Toluene	4.8		
100-41-4	Ethylbenzene	0.96	~~F~~	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	Methylene chloride	0.89	~~F~~B	J
74-87-3	Chloromethane	2.7	~~F~~	J
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/19/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 027
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQPK1AA Date Extracted:11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-29

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	1.6	F	J
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	2.0	U	
79-01-6	Trichloroethene	2.0	U	
136777-61-2	m-Xylene & p-Xylene	3.7		
95-47-6	o-Xylene	1.4	F	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	Toluene	5.5		
100-41-4	Ethylbenzene	1.1	F	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	Methylene chloride	0.78	F B	J
74-87-3	Chloromethane	2.0	F	J
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC 12/19/06

Earth Tech, Inc.

Lab Name: Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID: H6K020103 028
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQPL1AA Date Extracted: 11/10/06
Dilution factor: 10 Date Analyzed: 11/10/06

QC Batch: 6317678

Client Sample Id: SG-30

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	2.0	U	
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**2.1**		
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	**Styrene**	**0.41**	~~F~~	J
79-01-6	Trichloroethene	2.0	U	
136777-61-2	**m-Xylene & p-Xylene**	**5.0**		
95-47-6	**o-Xylene**	**1.8**	~~F~~	J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	**Toluene**	**9.2**		
100-41-4	**Ethylbenzene**	**1.4**	~~F~~	J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**1.3**	~~F B~~	J
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

DC
12/14/06

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 029
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL Date Received: 11/01/06
Work Order: JHQPM1AA Date Extracted:11/13/06
Dilution factor: 10 Date Analyzed: 11/13/06

QC Batch: 6320629

Client Sample Id: SG-31

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	**1,1,1-Trichloroethane**	**0.46**	**P**	J
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	**Benzene**	**3.8**		
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	**Styrene**	**2.2**		
79-01-6	**Trichloroethene**	**0.38**	**P**	J
136777-61-2	**m-Xylene & p-Xylene**	**11**		J
95-47-6	**o-Xylene**	**3.5**		J
127-18-4	Tetrachloroethene	2.0	U	J
108-88-3	**Toluene**	**18**		J
100-41-4	**Ethylbenzene**	**3.2**		J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	**Methylene chloride**	**6.3**	**B**	
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

Earth Tech, Inc.

Lab Name:Severn Trent Laboratories, Inc. SDG Number:

Matrix: (soil/water) AIR Lab Sample ID:H6K020103 029
Method: EPA-2 TO-15
Volatile Organics by GC/MS (TO-15) ppb(v/v)

Sample WT/Vol: / mL
Work Order: JHQPM1AC

Date Received: 11/01/06
Date Extracted:11/13/06
Date Analyzed: 11/13/06

Moisture %:

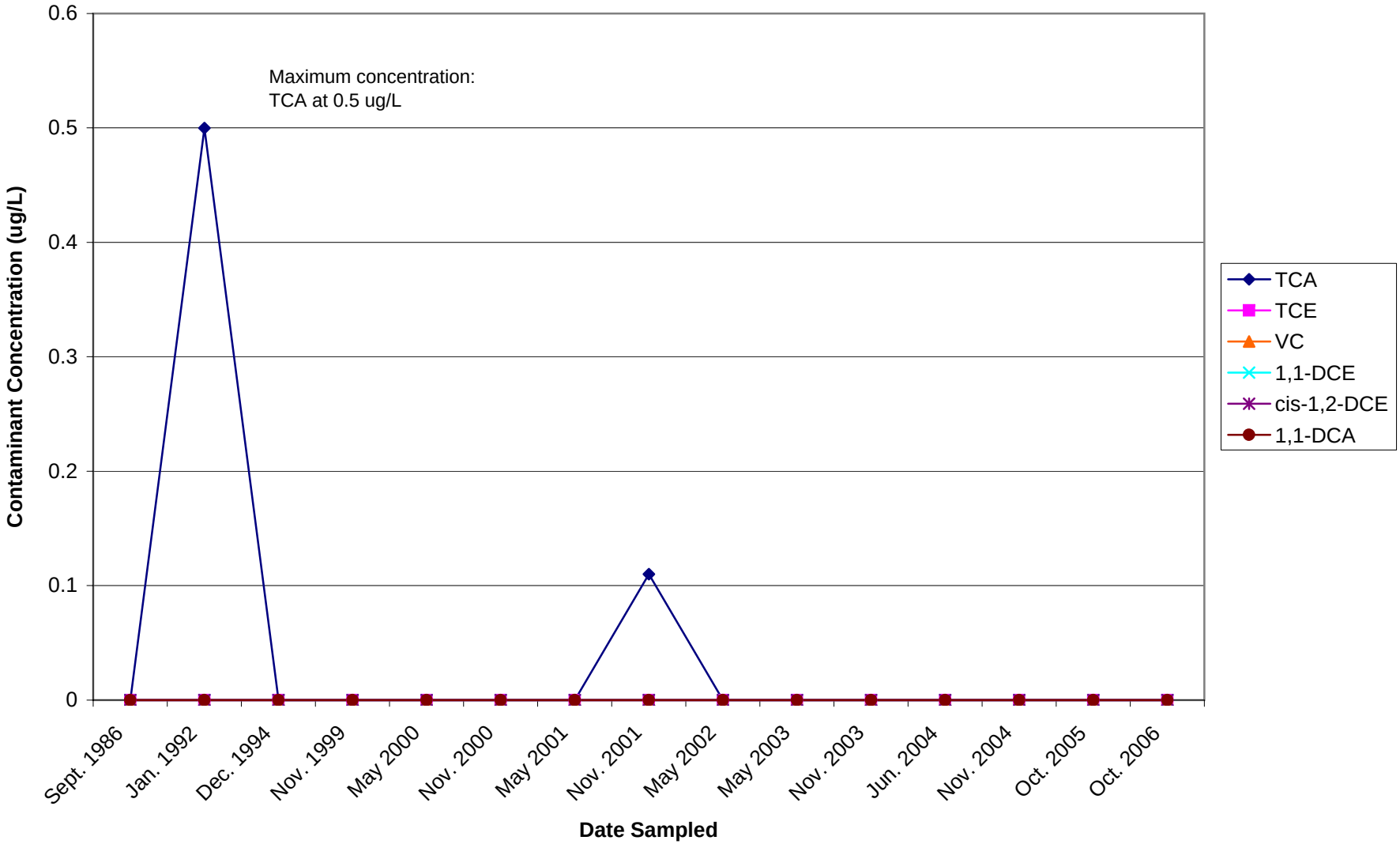
QC Batch: 6320629

Client Sample Id: SG-31 DUP

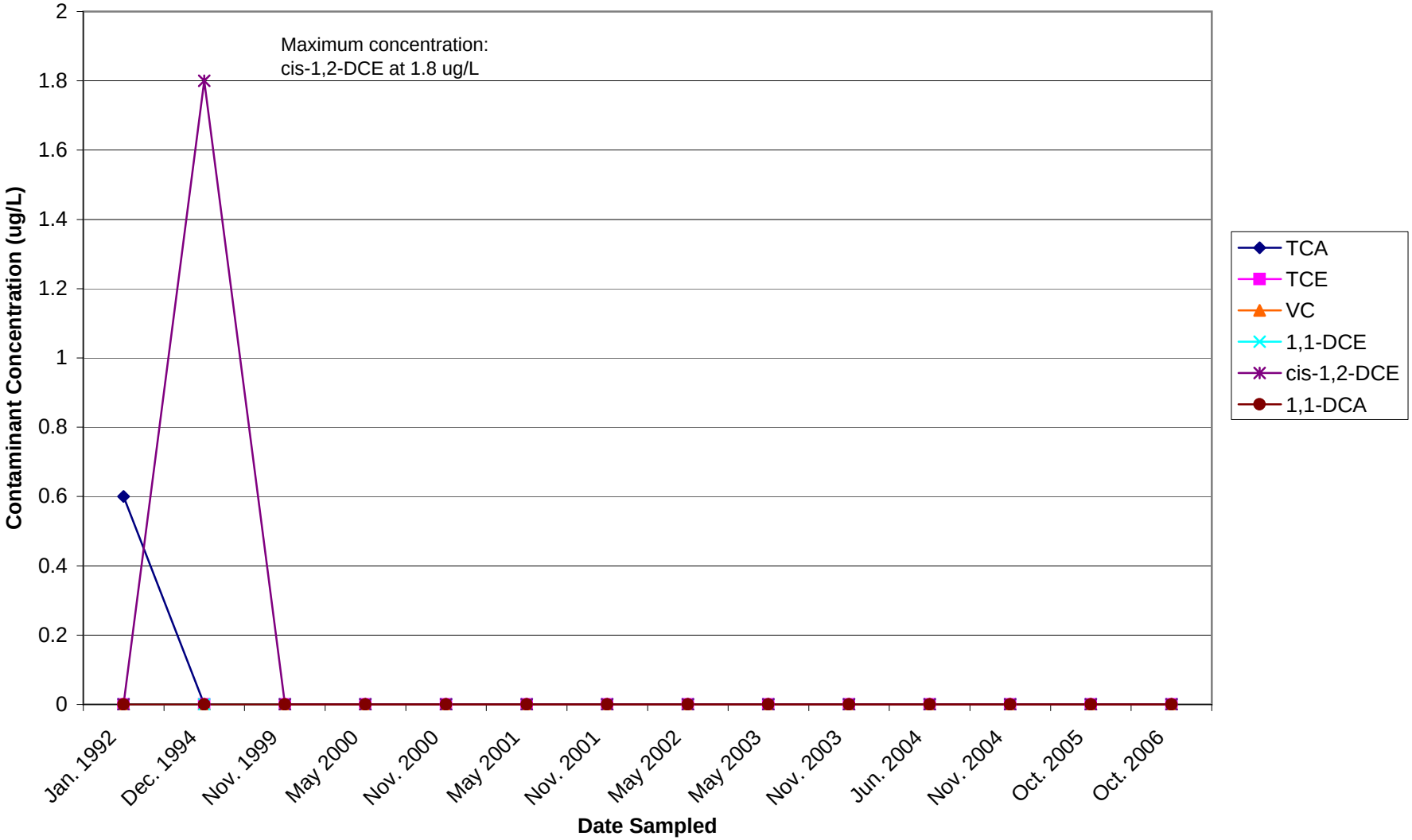
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ppb(v	Q	
74-83-9	Bromomethane	2.0	U	
108-90-7	Chlorobenzene	2.0	U	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	
71-55-6	1,1,1-Trichloroethane	0.56	~~F~~	J
107-06-2	1,2-Dichloroethane	2.0	U	
106-93-4	1,2-Dibromoethane (EDB)	2.0	U	
71-43-2	Benzene	4.8		
56-23-5	Carbon tetrachloride	2.0	U	
67-66-3	Chloroform	2.0	U	
100-42-5	Styrene	3.0		
79-01-6	Trichloroethene	0.47	~~F~~	J
136777-61-2	m-Xylene & p-Xylene	15		J
95-47-6	o-Xylene	4.9		J
127-18-4	Tetrachloroethene	2.0	U	
108-88-3	Toluene	24		J
100-41-4	Ethylbenzene	4.6		J
156-59-2	cis-1,2-Dichloroethene	3.0	U	
75-09-2	Methylene chloride	6.7		
74-87-3	Chloromethane	5.0	U	
75-00-3	Chloroethane	2.0	U	
75-01-4	Vinyl chloride	2.0	U	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	
75-35-4	1,1-Dichloroethene	2.0	U	
79-00-5	1,1,2-Trichloroethane	2.0	U	
75-34-3	1,1-Dichloroethane	2.0	U	
78-87-5	1,2-Dichloropropane	2.0	U	
156-60-5	trans-1,2-Dichloroethene	3.0	U	

APPENDIX F
Trend Analysis of VOCs in Groundwater

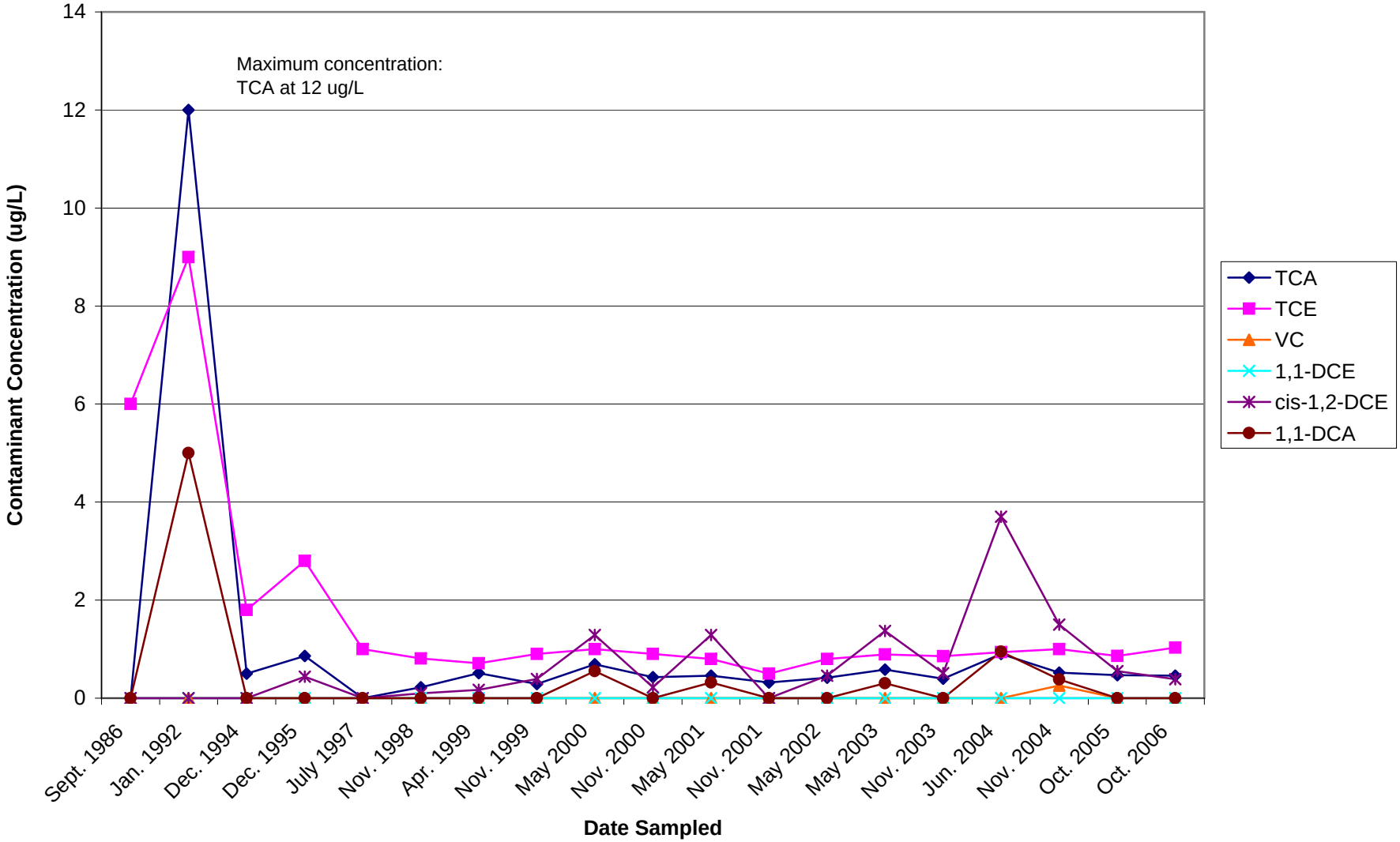
SW1 Trend Analysis of VOCs in Groundwater



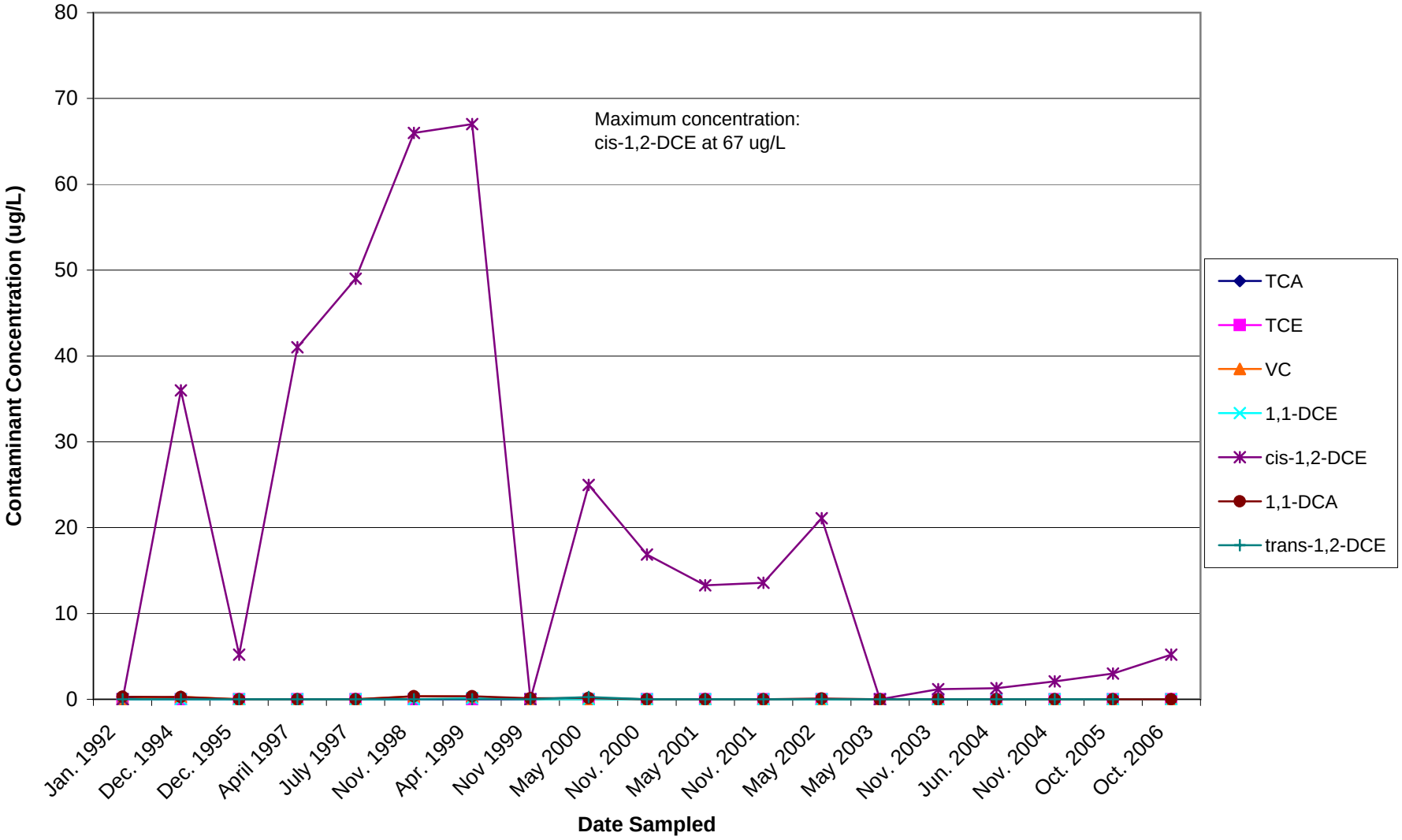
DW1 Trend Analysis of VOCs in Groundwater



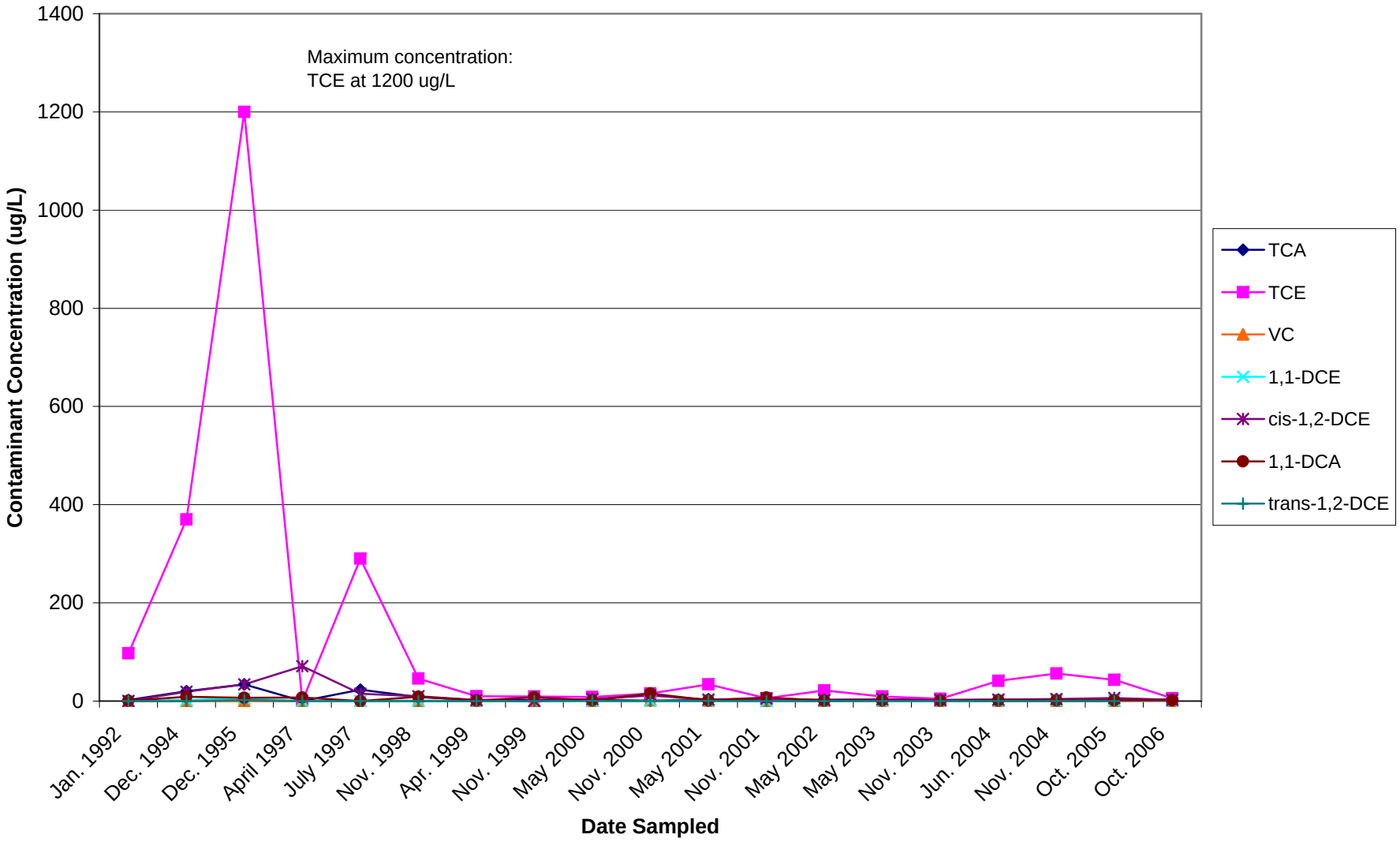
SW3 Trend Analysis of VOCs in Groundwater



DW3 Trend Analysis of VOCs in Groundwater



SW4 Trend Analysis of VOCs in Groundwater



SW7 Trend Analysis of VOCs in Groundwater