



**ENVIRONMENTAL STRATEGIES CONSULTING LLC**

11911 Freedom Drive, Suite 900 • Reston, Virginia 20190 • (703) 709-6500 • Fax (703) 709-8505



July 7, 2004

Mr. Carl Cuipyllo  
New York State Department of Environmental Conservation  
Region 7  
615 Erie Boulevard West  
Syracuse, NY 13204-2400

Re: Vadose Zone Sampling Results  
Emerson Power Transmission, Ithaca, New York

Dear Mr. Cuipyllo:

Environmental Strategies Consulting LLC, on behalf of Emerson, has prepared this letter summarizing the Vadose Zone sampling program conducted near the Emerson Power Transmission (EPT) facility in Ithaca, New York. The work was completed in accordance with procedures described in the *Vadose Zone Work Plan*, dated January 16, 2004, and approved by the New York State Department of Environmental Conservation (NYSDEC) on May 13, 2004.

The investigation consisted of installing and sampling nine shallow vadose zone sampling points (designated VP-1 through VP-9) at locations along South Cayuga Street, South Hill Terrace, and South Geneva Street (Figure 1). At the request of Emerson, four sampling points were added to the original scope of work to assess the area further down South Cayuga Street. In addition, because of construction activities along Spencer Street, alternate sampling locations were selected along South Geneva Street. The alternate and additional sample locations were approved by the NYSDEC.

**Vadose Zone Sampling Procedures**

The Vadose Zone sampling was conducted on June 17, 2004. The samples were collected approximately 1 foot above the saturated zone or bedrock and ranged in depth from 4.0 to 5.5 feet below ground surface (bgs). Samples VP-4, VP-6, VP-8, and VP-9 were collected from areas along South Cayuga Street and samples VP-5 and VP-7 were collected along the EPT facility access road. Samples VP-1 through VP-3 were collected from alternate locations on South Geneva Street.

Before installing the sampling devices, Environmental Strategies drilled an exploratory boring at each sampling location to verify the depth to groundwater or bedrock. The soil borings were advanced by collecting continuous soil samples using a vehicle-mounted hydraulic probe equipped

with a 4-foot-long 2-inch-outside diameter macrocore sampler fitted with a single-use acetate liner.

The recovered soil samples were logged in the field for color, texture, and moisture content using the unified soil classification system. At the completion of the boring, the soil samples were returned to the borehole and the remainder of the borehole was sealed with granular bentonite hydrated with potable water. The borehole was capped with soil cuttings or asphalt patch to match the surrounding surface.

The soil gas sampling points were installed by advancing a second borehole using the macro-core sampler. A stainless steel screen fitted with 0.25-inch inside-diameter Teflon-lined tubing was lowered to the bottom of each borehole, which was then backfilled with quartz sand to form a 1-foot-thick sampling interval. The remaining annular space was sealed with hydrated granular bentonite. The bentonite was hydrated to form a thick paste before it was placed in the borehole. The bentonite paste was placed into the borehole in 3 to 6-inch lifts that were compacted to form a seal.

To ensure that the sample was representative of the vadose zone, a minimum of one well volume of gas was purged from the sampling equipment and the surrounding sand pack using a calibrated hand pump. Once the well was purged, the tubing was clamped (to prevent the entry of ambient air) and connected to an evacuated 6-liter SUMMA™ canister equipped with a flow controller. The clamp was removed and the valve on the canister was then opened to initiate the sample collection.

The flow regulator was pre-set by the laboratory to collect the soil gas sample over 8 hours. The valve on the canister was closed at the end of the 8-hour period and the canister was labeled with the sample name, location, time and date of sample collection, and the analytical method.

Once the sampling activities were complete, the tubing was removed from the ground and the borehole was capped with soil cuttings or asphalt patch to match the surrounding surface. The direct-push rods and drive point were decontaminated between each point using a non-phosphate detergent and tap water wash followed by a tap water rinse. Disposable nitrile gloves were worn by the sampling personnel and the gloves were changed before the collection of each sample.

The SUMMA™ canisters were shipped to Severn Trent Laboratories, Inc., in Knoxville, Tennessee, which is certified by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program. Samples of the soil gas in each canister were analyzed for site-related volatile organic compounds by U.S. Environmental Protection Agency Method TO-15. In accordance with the *Operation, Maintenance, and Monitoring Manual* for the site, dated April 1997, and its addendum pages, dated July 11, 1997, the soil gas samples were analyzed for the following compounds detected in site groundwater: 1,2-dichloroethane, cis-1,2-dichloroethene, trans-1,2-dichloroethene, methylene chloride, tetrachloroethene, 1,1,1-trichloroethane, trichloroethene, and vinyl chloride.

The sample locations will be surveyed by a surveyor licensed in New York. Each sample location was marked by Environmental Strategies with paint so that the sample locations could be accurately identified by the surveyor. Horizontal measurements will be accurate to the nearest 0.1 foot and vertical measurements to the nearest 0.01 foot.

July 7, 2004

### **Vadose Zone Sampling Results**

The analytical results for the soil gas samples are summarized in Table 1 and copies of the laboratory reports are enclosed as Attachment 1. For comparison, Table 1 also includes the 25<sup>th</sup> and 75<sup>th</sup> percentile values for site-related constituents in background outdoor air as listed in the NYSDOH's background air quality database.

If you have any questions or comments regarding the contents of this letter, please contact us at (703) 709-6500.

Sincerely yours,



Scott P. Haitz  
Senior Project Director

SPH:lrp

k:\client\emerson\ithaca\soil gas\rev\_trans-nysdec3.doc

### **Attachment**

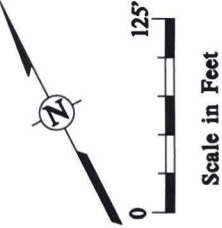
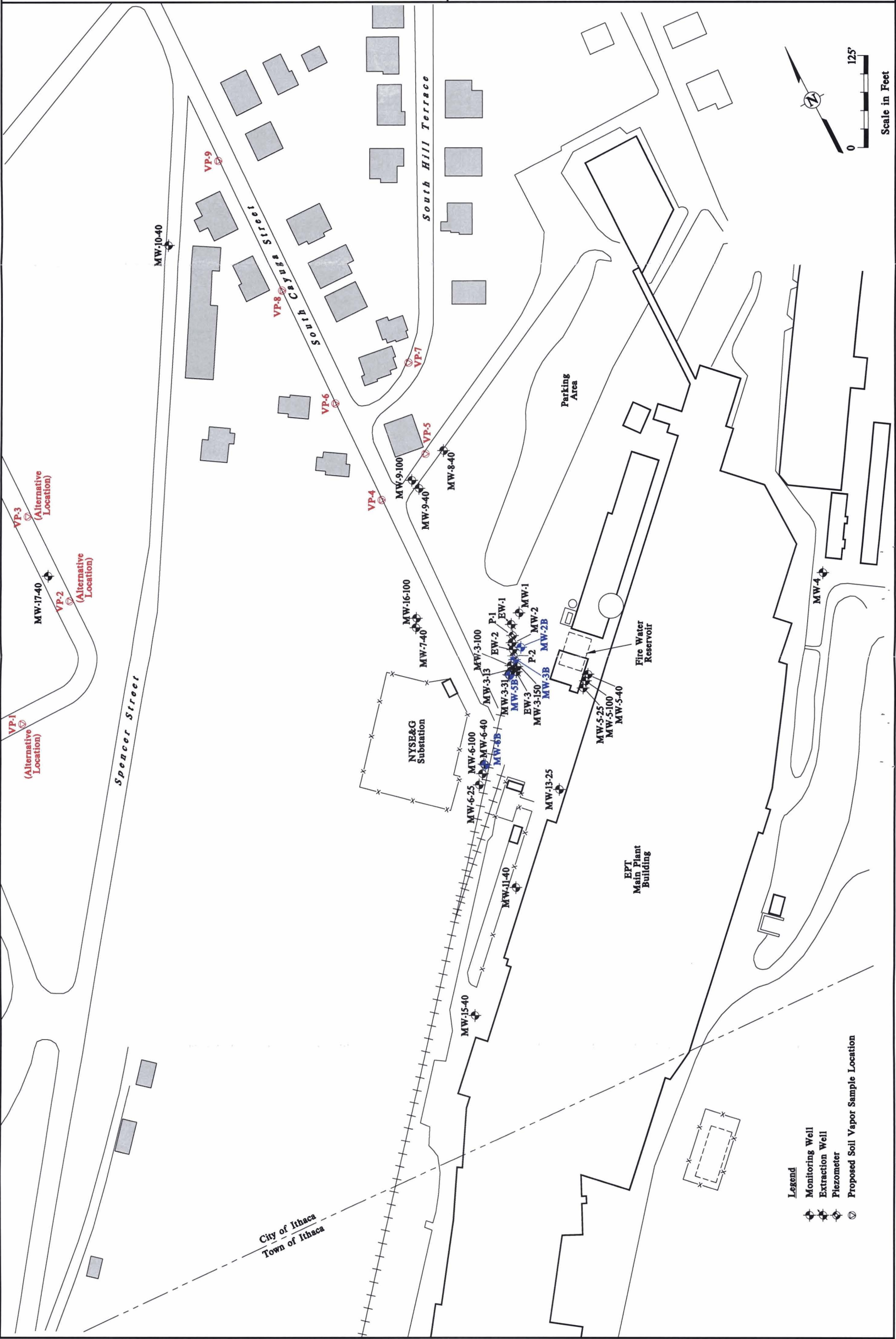
cc\encl: Mr. Derek Chase, Emerson

Figure 1



ENVIRONMENTAL STRATEGIES CONSULTING LLC  
11911 FREEDOM DRIVE SUITE 900  
RESTON, VIRGINIA 20190  
(703) 709-6500

Figure 1  
Site Layout and Proposed Vaporose Zone Sampling Locations  
EPT Facility  
Ithaca, New York



- Legend**
- Monitoring Well
  - Extraction Well
  - Piezometer
  - Proposed Soil Vapor Sample Location

Table 1

**Table 1**

**Soil Gas Results  
Emerson Power Transmission Facility  
Ithaca, New York  
July 7, 2004 (a)**

<b><u>Parameter (ppb(v/v))</u></b>	<b><u>VP-1 (ALT)</u></b>	<b><u>VP-2 (ALT)</u></b>	<b><u>VP-3 (ALT)</u></b>	<b><u>VP-4</u></b>	<b><u>VP-5</u></b>	<b><u>VP-6</u></b>	<b><u>VP-7</u></b>	<b><u>VP-8</u></b>	<b><u>VP-9</u></b>	<b><u>NYSDOH Background Outdoor Air Levels (b)</u></b>
1,2-Dichloroethane	2.1 U	0.3 U	0.6 U	0.31 U	0.32 U	9.6 U	14 U	9.6 U	3.2 U	<0.2
cis-1,2-Dichloroethene	2.1 U	0.3 U	0.6 U	1.1	0.32 U	9.6 U	14 U	9.6 U	3.2 U	<0.3 - <2.5
trans-1,2-Dichloroethene	2.1 U	0.3 U	0.6 U	0.31 U	0.32 U	9.6 U	14 U	9.6 U	3.2 U	<1.8 - <2.5
Methylene chloride	5.4 U	0.75 U	1.5 U	0.78 U	0.8 U	24 U	36 U	24 U	8 U	<0.3 - 1.1
Tetrachloroethene	2.1 U	0.32	1.1	6.3	0.32 U	400	14 U	650	49	<0.2 - <1.0
1,1,1-Trichloroethane	2.1 U	1.2	3.2	15	0.32 U	310	22	220	310	0.18 - 0.51
Trichloroethene	2.1 U	0.3 U	0.6 U	8.2	0.32	61	14 U	80	23	<0.2 - <1.0
Vinyl chloride	2.1 U	0.3 U	0.6 U	0.31 U	0.32 U	9.6 U	14 U	9.6 U	3.2 U	<0.4

a/ U = compound not detected above reporting limit; ALT = alternate sampling location.

All soil gas samples were analyzed using EPA-2 TO-15 - "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air," EPA-625/R-96/010B, January 1999.

b/ NYSDOH 25th to 75th percentile background concentrations in outdoor air.

k:/client/emerson/ithaca/soil gas/rev\_06\_17\_04\_EPT\_soilgas

## Attachment 1



SEVERN  
TRENT

STL

STL Knoxville  
5815 Middlebrook Pike  
Knoxville, TN 37921

Tel: 865 291 3000 Fax: 865 584 4315  
www.stl-inc.com

## ANALYTICAL REPORT

PROJECT NO. 127491.03

EPT - Ithaca, NY

Lot #: H4F210105

John Johnson

Environmental Strategies Corpo  
11911 Freedom Drive  
Suite 900  
Reston, VA 20190

SEVERN TRENT LABORATORIES, INC.



John Reynolds  
Project Manager

June 25, 2004

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## ANALYTICAL METHODS SUMMARY

H4F210105

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Volatile Organics by TO15	EPA-2 TO-15

### References:

EPA-2      "Compendium of Methods for the Determination of Toxic  
Organic Compounds in Ambient Air", EPA-625/R-96/010b,  
January 1999.

## SAMPLE SUMMARY

H4F210105

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
GJNJN	001	VP-5	06/17/04	16:02
GJNJQ	002	VP-4	06/17/04	16:12
GJNJR	003	VP-7	06/17/04	16:21
GJNJT	004	VP-6	06/17/04	16:28
GJNVJ	005	VP-8	06/17/04	16:33
GJNJW	006	VP-9	06/17/04	16:40
GJNJO	007	VP-1 (ALT)	06/17/04	18:21
GJNJ1	008	VP-2 (ALT)	06/17/04	19:20
GJNJ2	009	VP-3 (ALT)	06/17/04	19:53

### NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

## **PROJECT NARRATIVE**

### **H4F210105**

The results reported herein are applicable to the samples submitted for analysis only.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**The original chain of custody documentation is included with this report.**

#### **Sample Receipt**

There were no problems with the condition of the samples received.

#### **Quality Control**

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Samples VP-7 and VP-3(ALT) were reported with elevated reporting limits for all analytes due to the presence of non-target compounds. A dilution was necessary prior to analysis, and the reporting limits were adjusted accordingly.

STL Knoxville maintains the following certifications, approvals and accreditations: Arkansas DEQ Cert. # 03-049-0, California DHS ELAP Cert. #2423, Colorado DPHE, Connecticut DPH Cert. #PH-0223, Florida DOH Cert. #E87177, Georgia DNR Cert. #906, Hawaii DOH, Illinois EPA Cert. # 000687, Indiana DOH Cert. #C-TN-02, Kansas DHE Cert. # E-10349, Kentucky DEP Lab ID #90101, Louisiana DEQ Cert. #03079, Louisiana DOHH Cert. #LA030024, Maryland DHMH Cert. #277, Massachusetts DEP Cert. #M-TN009, Michigan DEQ Lab ID #9933, New Jersey DEP Cert. #TN001, New York DOH Lab #10781, North Carolina DPH Lab ID #21705, North Carolina DEHNR Cert. #64, Oklahoma DEQ ID #9415, Pennsylvania DEP Cert. # 68-576, South Carolina DHEC Lab ID #84001001, Tennessee DOH Lab ID #02014, Utah DOH Cert. #QUAN3, Virginia DGS Lab ID #00165, Washington DOE Lab #C120, Wisconsin DNR Lab ID #998044300, US Army Corps of Engineers, Naval Facilities Engineering Service Center, US EPA Perchlorate Approval and USDA Soil Permit #S-46424. This list of approvals is subject to change and does not imply that laboratory certification is available for all parameters reported in this environmental sample data report.



# Sample Data Summary

**ENVIRONMENTAL STRATEGIES CORPORATION**

Client Sample ID: VP-5

**GC/MS Volatiles**

Lot-Sample #....: H4F210105-001	Work Order #....: GJNJUN1AD	Matrix.....: AIR
Date Sampled....: 06/17/04	Date Received...: 06/19/04	
Prep Date.....: 06/22/04	Analysis Date...: 06/23/04	
Prep Batch #....: 4175189		
Dilution Factor: 1.61	Method.....: EPA-2 TO-15	

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,2-Dichloroethane	ND	0.32	ppb (v/v)
cis-1,2-Dichloroethene	ND	0.32	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.32	ppb (v/v)
Methylene chloride	ND	0.80	ppb (v/v)
Tetrachloroethene	ND	0.32	ppb (v/v)
1,1,1-Trichloroethane	ND	0.32	ppb (v/v)
<b>Trichloroethene</b>	<b>0.32</b>	<b>0.32</b>	<b>ppb (v/v)</b>
Vinyl chloride	ND	0.32	ppb (v/v)

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	107	(70 - 130)
Toluene-d8	102	(70 - 130)
4-Bromofluorobenzene	107	(70 - 130)

**ENVIRONMENTAL STRATEGIES CORPORATION**

**Client Sample ID: VP-4**

**GC/MS Volatiles**

<b>Lot-Sample #...</b> : H4F210105-002	<b>Work Order #...</b> : GJNJQ1AD	<b>Matrix.....</b> : AIR
<b>Date Sampled...</b> : 06/17/04	<b>Date Received...</b> : 06/19/04	
<b>Prep Date.....</b> : 06/22/04	<b>Analysis Date...</b> : 06/23/04	
<b>Prep Batch #...</b> : 4175189		
<b>Dilution Factor</b> : 1.57	<b>Method.....</b> : EPA-2 TO-15	

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,2-Dichloroethane	ND	0.31	ppb (v/v)
<b>cis-1,2-Dichloroethene</b>	<b>1.1</b>	<b>0.31</b>	<b>ppb (v/v)</b>
trans-1,2-Dichloroethene	ND	0.31	ppb (v/v)
Methylene chloride	ND	0.78	ppb (v/v)
<b>Tetrachloroethene</b>	<b>6.3</b>	<b>0.31</b>	<b>ppb (v/v)</b>
<b>1,1,1-Trichloroethane</b>	<b>15</b>	<b>0.31</b>	<b>ppb (v/v)</b>
<b>Trichloroethene</b>	<b>8.2</b>	<b>0.31</b>	<b>ppb (v/v)</b>
Vinyl chloride	ND	0.31	ppb (v/v)

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	107	(70 - 130)

**ENVIRONMENTAL STRATEGIES CORPORATION**

**Client Sample ID: VP-7**

**GC/MS Volatiles**

<b>Lot-Sample #...</b> : H4F210105-003	<b>Work Order #...</b> : GJNJRIAD	<b>Matrix.....</b> : AIR
<b>Date Sampled...</b> : 06/17/04	<b>Date Received...</b> : 06/19/04	
<b>Prep Date.....</b> : 06/22/04	<b>Analysis Date...</b> : 06/23/04	
<b>Prep Batch #...</b> : 4175189		
<b>Dilution Factor</b> : 71.36	<b>Method.....</b> : EPA-2 TO-15	

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,2-Dichloroethane	ND	14	ppb (v/v)
cis-1,2-Dichloroethene	ND	14	ppb (v/v)
trans-1,2-Dichloroethene	ND	14	ppb (v/v)
Methylene chloride	ND	36	ppb (v/v)
Tetrachloroethene	ND	14	ppb (v/v)
1,1,1-Trichloroethane	22	14	ppb (v/v)
Trichloroethene	ND	14	ppb (v/v)
Vinyl chloride	ND	14	ppb (v/v)

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	101	(70 - 130)
Toluene-d8	105	(70 - 130)
4-Bromofluorobenzene	112	(70 - 130)



ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: VP-6

GC/MS Volatiles

Lot-Sample #...: H4F210105-004    Work Order #...: GJNJT1AD    Matrix.....: AIR  
Date Sampled...: 06/17/04    Date Received...: 06/19/04  
Prep Date.....: 06/22/04    Analysis Date...: 06/23/04  
Prep Batch #...: 4175189  
Dilution Factor: 48.13    Method.....: EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
trans-1,2-Dichloroethene	ND	9.6	ppb (v/v)
Methylene chloride	ND	24	ppb (v/v)
Tetrachloroethene	400	9.6	ppb (v/v)
1,1,1-Trichloroethane	310	9.6	ppb (v/v)
Trichloroethene	61	9.6	ppb (v/v)
Vinyl chloride	ND	9.6	ppb (v/v)
1,2-Dichloroethane	ND	9.6	ppb (v/v)
cis-1,2-Dichloroethene	ND	9.6	ppb (v/v)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	103	(70 - 130)
4-Bromofluorobenzene	107	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: VP-8

GC/MS Volatiles

Lot-Sample #....: H4F210105-005    Work Order #....: GJNJV1AD    Matrix.....: AIR  
Date Sampled....: 06/17/04    Date Received...: 06/19/04  
Prep Date.....: 06/22/04    Analysis Date...: 06/23/04  
Prep Batch #....: 4175189  
Dilution Factor: 48.24    Method.....: EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethane	ND	9.6	ppb (v/v)
cis-1,2-Dichloroethene	ND	9.6	ppb (v/v)
trans-1,2-Dichloroethene	ND	9.6	ppb (v/v)
Methylene chloride	ND	24	ppb (v/v)
Tetrachloroethene	650	9.6	ppb (v/v)
1,1,1-Trichloroethane	220	9.6	ppb (v/v)
Trichloroethene	80	9.6	ppb (v/v)
Vinyl chloride	ND	9.6	ppb (v/v)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	102	(70 - 130)
Toluene-d8	102	(70 - 130)
4-Bromofluorobenzene	108	(70 - 130)

# ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: VP-9

## GC/MS Volatiles

Lot-Sample #....: H4F210105-006    Work Order #....: GJNJW1AD    Matrix.....: AIR  
 Date Sampled....: 06/17/04    Date Received...: 06/19/04  
 Prep Date.....: 06/22/04    Analysis Date...: 06/23/04  
 Prep Batch #....: 4175189  
 Dilution Factor: 16.1    Method.....: EPA-2 TO-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethane	ND	3.2	ppb (v/v)
cis-1,2-Dichloroethene	ND	3.2	ppb (v/v)
trans-1,2-Dichloroethene	ND	3.2	ppb (v/v)
Methylene chloride	ND	8.0	ppb (v/v)
Tetrachloroethene	49	3.2	ppb (v/v)
1,1,1-Trichloroethane	310	3.2	ppb (v/v)
Trichloroethene	23	3.2	ppb (v/v)
Vinyl chloride	ND	3.2	ppb (v/v)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1,2-Dichloroethane-d4	104	(70 - 130)
Toluene-d8	100	(70 - 130)
4-Bromofluorobenzene	107	(70 - 130)

**ENVIRONMENTAL STRATEGIES CORPORATION**

**Client Sample ID: VP-1(ALT)**

**GC/MS Volatiles**

<b>Lot-Sample #...</b> : H4F210105-007	<b>Work Order #...</b> : GJNJ01AD	<b>Matrix.....</b> : AIR
<b>Date Sampled...</b> : 06/17/04	<b>Date Received...</b> : 06/19/04	
<b>Prep Date.....</b> : 06/22/04	<b>Analysis Date...</b> : 06/23/04	
<b>Prep Batch #...</b> : 4175189		
<b>Dilution Factor</b> : 10.7	<b>Method.....</b> : EPA-2 TO-15	

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1-Trichloroethane	ND	2.1	ppb (v/v)
Trichloroethene	ND	2.1	ppb (v/v)
Vinyl chloride	ND	2.1	ppb (v/v)
cis-1,2-Dichloroethene	ND	2.1	ppb (v/v)
trans-1,2-Dichloroethene	ND	2.1	ppb (v/v)
Methylene chloride	ND	5.4	ppb (v/v)
Tetrachloroethene	ND	2.1	ppb (v/v)
1,2-Dichloroethane	ND	2.1	ppb (v/v)

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	104	(70 - 130)
Toluene-d8	101	(70 - 130)
4-Bromofluorobenzene	108	(70 - 130)

ENVIRONMENTAL STRATEGIES CORPORATION

Client Sample ID: VP-2(ALT)

GC/MS Volatiles

Lot-Sample #....: H4F210105-008    Work Order #....: GJNJ11AD    Matrix.....: AIR  
 Date Sampled....: 06/17/04    Date Received...: 06/19/04  
 Prep Date.....: 06/22/04    Analysis Date...: 06/23/04  
 Prep Batch #....: 4175189  
 Dilution Factor: 1.5    Method.....: EPA-2 TO-15

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>	
		<u>LIMIT</u>	<u>UNITS</u>
1,2-Dichloroethane	ND	0.30	ppb (v/v)
cis-1,2-Dichloroethene	ND	0.30	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.30	ppb (v/v)
Methylene chloride	ND	0.75	ppb (v/v)
Tetrachloroethene	0.32	0.30	ppb (v/v)
1,1,1-Trichloroethane	1.2	0.30	ppb (v/v)
Trichloroethene	ND	0.30	ppb (v/v)
Vinyl chloride	ND	0.30	ppb (v/v)
	<u>PERCENT</u>	<u>RECOVERY</u>	
<u>SURROGATE</u>	<u>RECOVERY</u>	<u>LIMITS</u>	
1,2-Dichloroethane-d4	105	(70 - 130)	
Toluene-d8	100	(70 - 130)	
4-Bromofluorobenzene	105	(70 - 130)	

**ENVIRONMENTAL STRATEGIES CORPORATION**

**Client Sample ID: VP-3 (ALT)**

**GC/MS Volatiles**

<b>Lot-Sample #...</b> : H4F210105-009	<b>Work Order #...</b> : GJNJ21AD	<b>Matrix.....</b> : AIR
<b>Date Sampled...</b> : 06/17/04	<b>Date Received...</b> : 06/19/04	
<b>Prep Date.....</b> : 06/22/04	<b>Analysis Date...</b> : 06/23/04	
<b>Prep Batch #...</b> : 4175189		
<b>Dilution Factor:</b> 3	<b>Method.....</b> : EPA-2 TO-15	

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,2-Dichloroethane	ND	0.60	ppb (v/v)
cis-1,2-Dichloroethene	ND	0.60	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.60	ppb (v/v)
Methylene chloride	ND	1.5	ppb (v/v)
Tetrachloroethene	1.1	0.60	ppb (v/v)
1,1,1-Trichloroethane	3.2	0.60	ppb (v/v)
Trichloroethene	ND	0.60	ppb (v/v)
Vinyl chloride	ND	0.60	ppb (v/v)

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	106	(70 - 130)
Toluene-d8	94	(70 - 130)
4-Bromofluorobenzene	108	(70 - 130)

# METHOD BLANK REPORT

## GC/MS Volatiles

Client Lot #...: H4F210105  
MB Lot-Sample #: H4F230000-189

Work Order #...: GJTAQ1AA

Matrix.....: AIR

Analysis Date...: 06/22/04  
Dilution Factor: 1

Prep Date.....: 06/22/04  
Prep Batch #...: 4175189

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		
		<u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
1,2-Dichloroethane	ND	0.20	ppb (v/v)	EPA-2 TO-15
cis-1,2-Dichloroethene	ND	0.20	ppb (v/v)	EPA-2 TO-15
trans-1,2-Dichloroethene	ND	0.20	ppb (v/v)	EPA-2 TO-15
Methylene chloride	ND	0.50	ppb (v/v)	EPA-2 TO-15
Tetrachloroethene	ND	0.20	ppb (v/v)	EPA-2 TO-15
1,1,1-Trichloroethane	ND	0.20	ppb (v/v)	EPA-2 TO-15
Trichloroethene	ND	0.20	ppb (v/v)	EPA-2 TO-15
Vinyl chloride	ND	0.20	ppb (v/v)	EPA-2 TO-15
	<u>PERCENT</u>	<u>RECOVERY</u>		
<u>SURROGATE</u>	<u>RECOVERY</u>	<u>LIMITS</u>		
1,2-Dichloroethane-d4	102	(70 - 130)		
Toluene-d8	102	(70 - 130)		
4-Bromofluorobenzene	107	(70 - 130)		

### NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H4F210105      Work Order #...: GJTAQ1AC      Matrix.....: AIR  
LCS Lot-Sample#: H4F230000-189  
Prep Date.....: 06/22/04      Analysis Date...: 06/22/04  
Prep Batch #...: 4175189  
Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
1,1-Dichloroethene	104	(70 - 130)	EPA-2 TO-15
Benzene	84	(70 - 130)	EPA-2 TO-15
Toluene	89	(70 - 130)	EPA-2 TO-15
Chlorobenzene	90	(70 - 130)	EPA-2 TO-15
Trichloroethene	91	(70 - 130)	EPA-2 TO-15

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	99	(70 - 130)
4-Bromofluorobenzene	99	(70 - 130)

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters



# LABORATORY CONTROL SAMPLE DATA REPORT

## GC/MS Volatiles

Client Lot #....: H4F210105      Work Order #....: GJTAQ1AC      Matrix.....: AIR  
 LCS Lot-Sample#: H4F230000-189  
 Prep Date.....: 06/22/04      Analysis Date...: 06/22/04  
 Prep Batch #....: 4175189  
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
1,1-Dichloroethene	10.0	10.4	ppb (v/v)	104	EPA-2 TO-15
Benzene	10.0	8.44	ppb (v/v)	84	EPA-2 TO-15
Toluene	10.0	8.92	ppb (v/v)	89	EPA-2 TO-15
Chlorobenzene	10.0	8.98	ppb (v/v)	90	EPA-2 TO-15
Trichloroethene	10.0	9.12	ppb (v/v)	91	EPA-2 TO-15

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
1,2-Dichloroethane-d4	103	(70 - 130)
Toluene-d8	99	(70 - 130)
4-Bromofluorobenzene	99	(70 - 130)

### NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

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## Sample Receipt Documentation

[illegible]

CA \_\_\_\_\_ MA \_\_\_\_\_ PA \_\_\_\_\_ MN \_\_\_\_\_

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT: COPY TO ESC FILES

57288

**STL KNOXVILLE**  
**SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST**

CLIENT: ESC PROJECT: \_\_\_\_\_ Lot No.: 44F210105

**TO BE COMPLETED BY SAMPLE RECEIPT ASSOCIATE:**

- |   | YES                                 | NO                       | NA                                  |
|---|-------------------------------------|--------------------------|-------------------------------------|
| 1. Sample Receipt:  |                                     |                          |                                     |
| a. Do sample container labels match COC? (IDs, Dates, Times)  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| b. Is the cooler temperature within acceptance limits?<br>(NOTE: North Carolina, 1668, 1613B: 0-4°C; VOST: 10°C)  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. Were samples received with correct chemical preservative<br>(excluding Encore)?  | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. Were custody seals present/intact on cooler and/or containers?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| e. Were all of the samples listed on the COC received?  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| f. Were all of the sample containers received intact?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| g. Were containers received for VOAs received without headspace?  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h. Were samples received in the appropriate containers?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i. Did you check for residual chlorine, if necessary?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j. Were samples received within 1/2 of the holding time?  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| k. Were samples screened for radioactivity?   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| l. For aqueous samples for SOG tests (i.e., 1613B, 1668A, 8290,<br>LR PAHs), does the sample(s) have visible solids present?<br>If yes, was SOG staff notified? | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| m. Were client's sample documents (RFA/COC) received?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| n. Has the RFA/COC been relinquished? (Signed, Dated, Timed)  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| o. Are test/parameters listed for each sample?  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| p. Is the matrix of the samples noted?  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| q. Is the date/time of sample collection noted?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| r. Is the client and project name/No. identified?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| s. Was the sampler identified on the RFA/COC?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |

SAMPLE RECEIVING ASSOCIATE: Bryan Johnson DATE: 6-21-04

**TO BE COMPLETED BY PROJECT MANAGER :**

- |   | YES                                 | NO                       | NA                       |
|---|-------------------------------------|--------------------------|--------------------------|
| 1. Project manager "Sample Greet":  |                                     |                          |                          |
| a. Quote number to be logged-in under <u>57288</u>                              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Informed Login associates of special instructions ?<br><u>* 1-week TAT *</u> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

PROJECT MANAGER : OK DATE: 6/21/04

Client Sample ID	Analysis Requested	Condition (see legend )	Comments/Action

- ☐ Client informed on \_\_\_\_\_ by \_\_\_\_\_. Person contacted: \_\_\_\_\_
- ☐ Noted actions in comments section above.
- ☐ No action necessary; process as is.

Project Manager: \_\_\_\_\_ Date: \_\_\_\_\_