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220 Athens Way, Suite 410 | Nashville, Tennessee 37228 | Telephone 615-255-9300 | Facsimile 615-255-9345 | www.ensafe.com

November 5, 2010

Larry Rosenmann
NYS Department of Environmental Conservation
Division of Solid and Hazardous Materials
625 Broadway
Albany, New York 12233-7258

Re: Carrier Corporation, Thompson Road Facility, Syracuse, New York
Corrective Action Order – Index CO 7-20051118-4
SSAS-13/IAS-13 — Soil Vapor Intrusion Monitoring, 3rd Quarter 2010

Mr. Rosenmann,

Please find enclosed one copy of the soil vapor intrusion monitoring report for Building TR-5, (IAS-13 & SSAS-13).

The 4th quarter and final sampling event is scheduled for November 11, 2010.

Please call me if you have any questions at (615) 255-9300.

Sincerely,

EnSafe Inc.

May M. Heflin

May Heflin, PE

cc: Mr. Mark Sergott — NYSDEC
Mr. Tim DiGuilio — NYSDEC
Mr. James E. Gruppe — NYSDEC
Mr. William Penn — UTC
Mr. Nelson Wong — Carrier Corp.

SOIL VAPOR INTRUSION REPORT
3rd QUARTER 2010, BUILDING TR-5

REVISION NO: 0

UNITED TECHNOLOGIES CORPORATION
CARRIER CORPORATION — THOMPSON ROAD FACILITY
SYRACUSE, NEW YORK

EnSafe Project Number
0888808712

Prepared for:

United Technologies Corporation
Remediation Shared Services
United Technologies Building
Hartford, Connecticut 06010

Prepared by:

EnSafe Inc.
220 Athens Way, Suite 410
Nashville, Tennessee 37228
(615) 255-9300
(800) 588-7962
www.ensafe.com

November 2010

SOIL VAPOR INTRUSION REPORT
3rd QUARTER 2010, BUILDING TR-5

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November 2010

Prepared By:	**Reviewed By:**
May M. Heflin	Tammy E. Keim
May M. Heflin, PE	Tammy Keim, PG
November 5, 2010	November 5, 2010
Date	Date

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Appendices

1.0 INTRODUCTION

EnSafe Inc. has been retained by United Technologies Corporation (UTC) Remediation Shared Services to perform quarterly soil vapor intrusion monitoring at Building TR-5 at the Carrier Corporation (Carrier) Thompson Road facility in Syracuse, New York, for four consecutive quarters. The quarterly monitoring is in response to New York State Department of Environment and Conservation (NYSDEC) Consent Order (CO) CO 7-20051118-4 (order) dated February 13, 2006.

Background

The analytical results from a TR-3 degreaser investigation in July 2007 (*Monitoring Well 18 Source Investigation Report*) confirmed a volatile organic compound (VOC) source area near the former location of the degreaser in Building TR-3. A *Focused Corrective Measures Study, Building TR-3 (former degreaser location)* was submitted to NYSDEC in September 2008, and was conditionally approved by them in correspondence dated February 12, 2009.

Building TR-5 SVI Sampling

As shown on **Figure 1 — Building TR-5 Site Figure**, Building TR-5 is approximately 150-feet south of the former Building TR-3 location (in which the former degreaser was located), with storm lines and laterals passing from the former degreaser location to the north and western sides of the Building TR-5. Therefore, Carrier proposed a quarterly indoor and sub-slab sample be obtained from the north end of Building TR-5 for a period of one year in the *Corrective Measures Study Work Plan, Soil Vapor Intrusion* submitted to NYSDEC in September 2009. Conditional approval was received from NYSDEC in correspondence dated August 31, 2009.

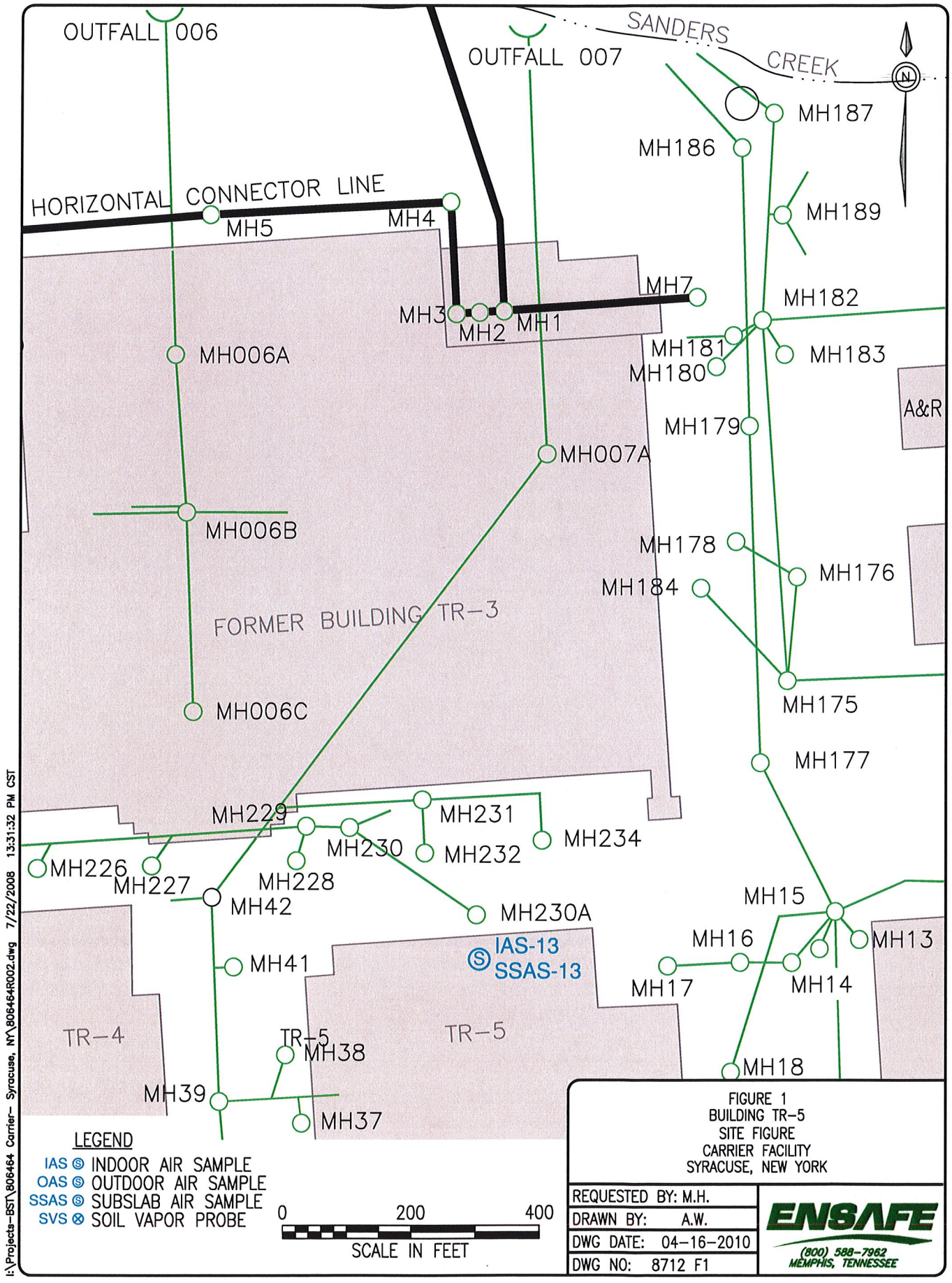

FIGURE 1
BUILDING TR-5
SITE FIGURE
CARRIER FACILITY
SYRACUSE, NEW YORK

REQUESTED BY:	M.H.
DRAWN BY:	A.W.
DWG DATE:	04-16-2010
DWG NO:	8712 F1

ENSAFE
(800) 588-7962
MEMPHIS, TENNESSEE

I:\Projects-BST\806464 Carrier- Syracuse, NY\806464R002.dwg 7/22/2008 13:31:32 PM CST

2.0 AIR MONITORING/SAMPLING ACTIVITIES

Indoor air and sub-slab vapor samples were collected (IAS-13/SSAS-13) at the north end of Building TR-5 in Storage Room E203 (see **Figure 2 — IAS/SSAS Sample Location**). Mr. Dick Jones with New York Department of Health (NYSDOH) visited the Carrier facility on January 27, 2010, and approved the location for indoor air and sub-slab vapor sampling.

The indoor air and sub-slab vapor samples collected were analyzed for specific VOCs (TCE and its degradation products) as outlined in the approved work plan using United States Environmental Protection Agency (USEPA) TO-15. Copies of the laboratory data are provided in **Appendix A.** EnSafe personnel, Michael Spina, collected the samples for laboratory analysis on September 8, 2010. Samples were analyzed by a NYSDEC-approved analytical laboratory, Air Toxics Ltd. in Folsom, California.

Historical groundwater sampling in the vicinity of the Building TR-3 degreaser discovered VOCs, which represent the contaminants of concern (COC) at the site (i.e., TCE and its degradation products). These site related VOCs also appeared in the February 2010 sub-slab vapor samples. **Table 1** shows the sample location and corresponding detected concentrations of the COCs. TCE was not found above the NYSDEC guidance value (5 micrograms per cubic meter [$\mu g/m^3$]) in the indoor air sample IAS-13 . TCE was found at 14 $\mu g/m^3$ in the sub-slab vapor sample SSAS-13. Other detected compounds are included in Table 1. The laboratory data package as well as the data evaluation summary are included in Appendices A and B, respectively.

Table 1
September 2010 Air Results after Data Review
Carrier Corporation, Thompson Road Facility Vapor Intrusion Monitoring

				Sample ID:	SSAS-13	IAS-13
				Laboratory ID:	1007056-01A/B	1007056-02A/B
				Sample Date:	09/08/2010	09/08/2010
Method	**Analyte**	**CAS No**	**Units**			
TO-15	1,1-Dichloroethane	75-34-3	µg/m^3		0.66 U	0.66 U
TO-15	1,1-Dichloroethene	75-35-4	µg/m^3		20	0.65
TO-15	Benzene	71-43-2	µg/m^3		0.26 J	0.56
TO-15	cis-1,2-Dichloroethene	156-59-2	µg/m^3		0.65 U	0.65 U
TO-15	Ethylbenzene	100-41-4	µg/m^3		0.71 U	0.86
TO-15	m+p Xylene	9999900-05-0	µg/m^3		0.71 U	2.6
TO-15	o-Xylene	95-47-6	µg/m^3		0.71 U	0.75
TO-15	Toluene	108-88-3	µg/m^3		0.65	13
TO-15	trans-1,2-Dichloroethene	156-60-5	µg/m^3		0.65 U	0.65 U
TO-15	Vinyl chloride	75-01-4	µg/m^3		0.42 U	0.13 J
TO-15	Xylene (Total)	1330-20-7	µg/m^3		1.4 U	3.4
TO-15SIM	Trichloroethene	79-01-6	µg/m^3		14	0.75

Notes:
J = estimated
U = undetected
The NYSDOH has developed several guidelines for chemicals in air (TCE, PCE, TCDD, PCBs, and MeCl). The State of New York does not have any standard, criteria or guidance values for concentrations of volatile chemicals in subsurface vapors (either soil vapor or sub-slab vapor).

3.0 DATA EVALUATION

The data was reviewed by laboratory QA/QC personnel and was found to be valid with few qualifications. An EnSafe chemist reviewed the data and determined the data to be usable with the appropriate qualification(s). A *Data Evaluation and Usability Report* is included as **Appendix B** of this report.

4.0 FUTURE MONITORING ACTIVITIES

The next quarterly monitoring event for IAS/SSAS-13 is scheduled for November/December 2010 and will complete the 4-quarter monitoring period proposed for this location.

Appendix A
Air Toxics Ltd. Laboratory Report
Air Monitoring Data, September 2010

Air Toxics LTD.
Laboratory Services Since 1989

9/22/2010
Ms. May Heflin
EnSafe, Inc.
220 Athens Way, Suite 410

Nashville TN 38134

Project Name: Carrier Syracuse
Project #: 8970
Workorder #: 1009167

Dear Ms. May Heflin

The following report includes the data for the above referenced project for sample(s) received on 9/9/2010 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott

Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1009167

Work Order Summary

CLIENT:	Ms. May Heflin EnSafe, Inc. 220 Athens Way, Suite 410 Nashville, TN 38134	**BILL TO:**	Ms. Sandra D. Ross EnSafe, Inc. 5724 Summer Trees Drive Memphis, TN 38134
PHONE:	(615) 255-9300	**P.O. #**	9883
FAX:		**PROJECT #**	8970 Carrier Syracuse
DATE RECEIVED:	09/09/2010	**CONTACT:**	Ausha Scott
DATE COMPLETED:	09/22/2010		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SSAS-TR5	Modified TO-15	5.5 "Hg	5 psi
01B	SSAS-TR5	Modified TO-15	5.5 "Hg	5 psi
02A	IAS-TR5	Modified TO-15	5.5 "Hg	5 psi
02B	IAS-TR5	Modified TO-15	5.5 "Hg	5 psi
03A	Lab Blank	Modified TO-15	NA	NA
03B	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
04B	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA
05AA	LCSD	Modified TO-15	NA	NA
05B	LCS	Modified TO-15	NA	NA
05BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Frumarn DATE: 09/22/10

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
EnSafe, Inc.
Workorder# 1009167

Two 6 Liter Summa Canister (SIM Certified) samples were received on September 09, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	*TO-15*	*ATL Modifications*
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

Sample identifications for samples SSAS-TR5 and IAS-TR5 were not provided on the sample tags. Therefore the information on the Chain of Custody was used to process and report the samples.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. All The canisters

used for this project have been certified to the Reporting Limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: SSAS-TR5

Lab ID#: 1009167-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Dichloroethene	0.16	5.1	0.65	20
Benzene	0.16	0.080 J	0.52	0.26 J
Toluene	0.16	0.17	0.62	0.65
m,p-Xylene	0.16	0.043 J	0.71	0.19 J
Total Xylenes	0.33	0.043 J	1.4	0.19 J

Client Sample ID: SSAS-TR5

Lab ID#: 1009167-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.033	2.6	0.18	14

Client Sample ID: IAS-TR5

Lab ID#: 1009167-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	0.051 J	0.42	0.13 J
1,1-Dichloroethene	0.16	0.16	0.65	0.65
Benzene	0.16	0.17	0.52	0.56
Toluene	0.16	3.4	0.62	13
Ethyl Benzene	0.16	0.20	0.71	0.86
m,p-Xylene	0.16	0.61	0.71	2.6
o-Xylene	0.16	0.17	0.71	0.75
Total Xylenes	0.33	0.78	1.4	3.4

Client Sample ID: IAS-TR5

Lab ID#: 1009167-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.033	0.14	0.18	0.75

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SSAS-TR5

Lab ID#: 1009167-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**u091709**	**Date of Collection:**	**9/8/10 4:15:00 PM**
Dil. Factor:	**1.64**	**Date of Analysis:**	**9/17/10 01:42 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.42	Not Detected
1,1-Dichloroethene	0.16	5.1	0.65	20
trans-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.66	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Benzene	0.16	0.080 J	0.52	0.26 J
Toluene	0.16	0.17	0.62	0.65
Ethyl Benzene	0.16	Not Detected	0.71	Not Detected
m,p-Xylene	0.16	0.043 J	0.71	0.19 J
o-Xylene	0.16	Not Detected	0.71	Not Detected
Total Xylenes	0.33	0.043 J	1.4	0.19 J

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	102	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SSAS-TR5

Lab ID#: 1009167-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**c091711**	**Date of Collection:**	**9/8/10 4:15:00 PM**
Dil. Factor:	**1.64**	**Date of Analysis:**	**9/17/10 05:33 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.033	2.6	0.18	14

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: IAS-TR5

Lab ID#: 1009167-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**u091710**	**Date of Collection: 9/8/10 4:15:00 PM**	
Dil. Factor:	**1.64**	**Date of Analysis: 9/17/10 02:34 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	0.051 J	0.42	0.13 J
1,1-Dichloroethene	0.16	0.16	0.65	0.65
trans-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.66	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.65	Not Detected
Benzene	0.16	0.17	0.52	0.56
Toluene	0.16	3.4	0.62	13
Ethyl Benzene	0.16	0.20	0.71	0.86
m,p-Xylene	0.16	0.61	0.71	2.6
o-Xylene	0.16	0.17	0.71	0.75
Total Xylenes	0.33	0.78	1.4	3.4

J = Estimated value.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	102	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: IAS-TR5

Lab ID#: 1009167-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**c091712**	**Date of Collection:**	**9/8/10 4:15:00 PM**
Dil. Factor:	**1.64**	**Date of Analysis:**	**9/17/10 06:20 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.033	0.14	0.18	0.75

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	91	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1009167-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**u091708a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/10 12:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
1,1-Dichloroethene	0.10	Not Detected	0.40	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.40	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Benzene	0.10	Not Detected	0.32	Not Detected
Toluene	0.10	Not Detected	0.38	Not Detected
Ethyl Benzene	0.10	Not Detected	0.43	Not Detected
m,p-Xylene	0.10	0.0068 J	0.43	0.030 J
o-Xylene	0.10	Not Detected	0.43	Not Detected
Total Xylenes	0.20	0.0068 J	0.87	0.030 J

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	94	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1009167-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**c091710a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/10 03:52 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.020	Not Detected	0.11	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1009167-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**u091702**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/10 07:49 AM**	

Compound	%Recovery
Vinyl Chloride	96
1,1-Dichloroethene	98
trans-1,2-Dichloroethene	97
1,1-Dichloroethane	92
cis-1,2-Dichloroethene	100
Benzene	96
Toluene	98
Ethyl Benzene	105
m,p-Xylene	108
o-Xylene	108
Total Xylenes	108

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	108	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1009167-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**c091702**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/10 07:29 AM**	

Compound	%Recovery
Trichloroethene	94

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	101	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1009167-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**u091703**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/10 08:31 AM**	

Compound	%Recovery
Vinyl Chloride	96
1,1-Dichloroethene	82
trans-1,2-Dichloroethene	92
1,1-Dichloroethane	82
cis-1,2-Dichloroethene	92
Benzene	90
Toluene	88
Ethyl Benzene	99
m,p-Xylene	99
o-Xylene	98
Total Xylenes	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	107	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1009167-05AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**u091704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/10 09:38 AM**	

Compound	**%Recovery**
Vinyl Chloride	94
1,1-Dichloroethene	81
trans-1,2-Dichloroethene	92
1,1-Dichloroethane	82
cis-1,2-Dichloroethene	92
Benzene	89
Toluene	85
Ethyl Benzene	98
m,p-Xylene	99
o-Xylene	98
Total Xylenes	99

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1009167-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**c091703**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/10 08:13 AM**	

Compound	**%Recovery**
Trichloroethene	83

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCSD

Lab ID#: 1009167-05BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**c091704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/17/10 08:59 AM**	

Compound	**%Recovery**
Trichloroethene	86

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130

Appendix B
Data Evaluation and Usability Report
for Air Samples Collected September 2010

1.0 DATA EVALUATION

This section presents analytical data for vapor samples collected in September 2010 from the Carrier Corporation, Thompson Road Facility and the quality assurance/quality control (QA/QC) evaluation and usability of those data. Samples discussed in this report were collected on September 8, 2010 and were submitted to Air Toxics LTD of Folsom, California (New York certification number 11291). Samples were reported by the laboratory in one laboratory work order: 1009167. Table 1-1 provides an analytical summary for samples discussed in this report.

Table 1-1
Analytical Summary

Work Order	Sample Identification	Laboratory Identification	Date Sampled	Receipt Pressure (mm Hg)
1009167	SSAS-TR5	1009167-01	9/08/2010	5.5
1009167	IAS-TR5	1009167-02	9/08/2010	5.5

Notes:
mm Hg = millimeters of mercury (vacuum pressure)

Analyses were conducted in accordance with *Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in, Specially-prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)*, Second Edition, Center for Environmental Research Information Office of Research and Development, U.S. Environmental Protection Agency (USEPA), January 1999, EPA/625/R-96/010b (TO-15).

Samples were analyzed and reported as definitive data and QC forms and raw data were submitted for data review (NYSDEC Category B-equivalent package). The quality assurance criterion used to assess all data were established by the analytical method (TO-15) and was consistent with the relevant guidance provided in *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999, EPA540/R-99/008 (Functional Guidelines). The TO-15 method was modified to report the project specific compounds of concern as documented in the *Quality Assurance Project Plan for the Soil Vapor Intrusion Work Plan*, Carrier Thompson Road Facility, Syracuse, New York, EnSafe Inc., September 2006. The elements of the data package provided by the laboratory are presented in Table 1-2.

Table 1-2
Data Package Elements

- Completed chain-of-custody documentation
- Analytical results
- Sample receipt and log-in information
- Laboratory case narrative
- **Organic QC summaries and raw data:**
  - Organic surrogate recoveries
  - Volatile tuning data
  - Laboratory control samples
  - Laboratory blanks
  - Initial and calibration check data
  - Internal standard areas and retention times
  - Sample and QC quantitation reports
  - Sample and QC chromatograms
  - Sample and QC spectra
  - Raw calibration data
  - Raw sample preparation bench sheets
  - Analytical run log

When the QC parameters did not fall within the specific method and laboratory guidelines, the data evaluator annotated or "flagged" the corresponding analytes where anomalies were found. The following flags were used to annotate data outside QC criteria during data evaluation.

U	**Undetected** — The analyte was present in a sample, but at a concentration less than 10 times the blank concentration for common organic constituents (methylene chloride, acetone, and 2-butanone) or five times the blank concentration for other constituents; the associated value shown is the quantitation limit after evaluation of the blank.
J	**Estimated Value** — At least one QC parameter was outside control limits.
UJ	**Undetected and Estimated** — The parameter was analyzed but not detected above the listed quantitation limit; the quantitation limit is estimated because one or more QC parameters were outside control limits.
R/UR	**Unusable Data** — At least one QC parameter grossly exceeded control limits.

These "flags" were applied to data where anomalies are noted during evaluation. The laboratory's "U" qualifier, defined as the target analyte was not detected above the laboratory's reporting limit, remained on the data unless superseded by the evaluation qualifier (e.g., "UJ" or "UR").

2.0 VOLATILE ORGANIC ANALYSES IN AIR

Volatile organic compounds (VOC) data evaluation of previously referenced samples for the Thompson Road Facility included the following parameters:

- Completeness*
- Holding times*
- Gas chromatograph/mass spectrometry (GC/MS) tuning*
- Surrogate spike recoveries*
- Initial calibration*
- Calibration verification*
- Laboratory control spike (LCS) results*
- Laboratory method blanks
- Canister certification*
- GC/MS Internal standard (IS) performance*
- Laboratory duplicate precision*

An asterisk (*) above indicates that QC results were within criteria. All data were found to be complete to perform data review and no discrepancies were noted upon sample receipt. Data which were acceptable, as indicated with an asterisk (*) above, will not be discussed further in the following sections.

The project-specific reporting limits were 1 microgram per cubic meter ($\mu g/m^3$) for all VOCs, except for trichloroethene, which had a project-specific reporting limit of 0.25 $\mu g/m^3$. All samples were analyzed using Method TO-15 in the full-scan mode. Because trichloroethene has a project-specific reporting limit below the instrument's capability in the full-scan mode, it was quantitated via selective ion monitoring mode (SIM), as necessary, to meet the project-specific reporting limits. The results for each sample were acquired from two separate data files originating from the same analytical run. The two data files have the same base laboratory identifier and are differentiated with an "A" for compounds not determined via SIM and a "B" for trichloroethene, when quantitated via SIM.

Laboratory Method Blanks

Total xylene and m,p-xylene were detected in method blank 1009167-03ALB , at concentrations of 0.15 micrograms per cubic meter ($\mu g/m^3$). Samples were qualified in accordance with *Functional Guidelines* where detections were not believed to be site-related. According to *Functional Guidelines*, a sample result should not be considered positive unless the analyses' concentration in the sample exceeds 5 times the amount in any blank (10 times for common laboratory contaminants acetone, methylene chloride, 2-butanone, and cyclohexane). These amounts are referred to as *action levels*. Because blank samples may not be prepared using the same sample weight, volume, or dilution, these

variables were considered when using these blank criteria. Total xylene and m,p-xylene were detected in sample SSAS-TR5 at a concentration of 0.19 µg/m3 which was below the blank action level. Therefore, total xylene and m,p-xylene were flagged as undetected "U" in sample SSAS-TR5.

3.0 Conclusions and Data Usability

Data for the September 2010 air samples collected at the Thompson Road Facility were reviewed independently from the laboratory to assess data quality. No results were rejected; therefore analytical completeness was calculated to be 100%. Total xylene and m,p-xylene were flagged as undetected "U" in sample SSAS-TR5, due to method blank artifacts. The remaining results are usable for their intended purpose, according to USEPA guidelines. Analytical results can be found in Attachment B-1.

Attachment B-1
Analytical Results

Table B-1
Carrier Corporation, Thompson Road Facility Vapor Intrusion Monitoring
September 2010 Air Results after Data Review

		Sample Delivery Group:	1009167	1009167
		Laboratory ID:	1009167-01A/B	1009167-02A/B
		Sample ID:	SSAS-13 TR-5	IAS-13 TR-5
		Sample Date:	09/08/2010	09/08/2010
		Dilution Factor:	1.64	1.64
		Units:	µg/m3	µg/m3
Method	**Analyte**	**CAS No.**		
TO-15	1,1-Dichloroethane	75-34-3	0.66 U	0.66 U
TO-15	1,1-Dichloroethene	75-35-4	**20**	**0.65**
TO-15	Benzene	71-43-2	**0.26 J**	**0.56**
TO-15	cis-1,2-Dichloroethene	156-59-2	0.65 U	0.65 U
TO-15	Ethylbenzene	100-41-4	0.71 U	**0.86**
TO-15	m+p Xylene	9999900-05-0	0.71 U	**2.6**
TO-15	o-Xylene	95-47-6	0.71 U	**0.75**
TO-15	Toluene	108-88-3	**0.65**	**13**
TO-15	trans-1,2-Dichloroethene	156-60-5	0.65 U	0.65 U
TO-15	Vinyl chloride	75-01-4	0.42 U	**0.13 J**
TO-15	Xylene (Total)	1330-20-7	1.4 U	**3.4**
TO-15SIM	Trichloroethene	79-01-6	**14**	**0.75**

Notes:

$\mu g/m^3$	=	micrograms per cubic meter
bold	=	detected concentration
J	=	estimated value
U	=	undetected