



February 21, 2013



Shirley A. Carlson
Shirton, Inc./dba Shorewood Queensway Dry Cleaners
4300 N. Oakland Avenue
Shorewood, WI 53211

Subject: SSDS Performance Monitoring Report 1
 4312-4316 North Oakland Avenue
 Shorewood, Wisconsin
 WDNR BRRTS# 02-41-552089
 EnviroForensics Project# 6107

FID 241 094 590

Dear Ms. Carlson:

Environmental Forensic Investigations, Inc. (EnviroForensics) is pleased to provide this sub-slab depressurization system (SSDS) performance monitoring report for Shorewood Queensway Dry Cleaners located at 4300 North Oakland Avenue in Shorewood, Wisconsin (the Site). The SSDS was installed to mitigate potential vapor intrusion risk in the three southernmost commercial tenant spaces of the adjoining building located at 4312-4334 North Oakland Avenue in Shorewood, Wisconsin (Aunt Peg's). The system has been operating since November 19, 2012. The performance monitoring data was collected in accordance with the *SSDS Performance Monitoring Work Scope and Cost Estimate* dated January 9, 2013.

Data Collection

EnviroForensics mobilized to the Site on December 20, 2012 to collect sub-slab pressure measurements and indoor and outdoor air samples. EnviroForensics requested access to each of the three individual tenant spaces affected by the SSDS system (i.e. 4312, 4314, and 4316 Oakland Avenue); however, access to the 4314 tenant space was not provided.

Sub-slab pressure measurements were collected from all eight existing monitoring points using an electronic micro-manometer with a resolution of 0.001 inches of water. The monitoring point layout is depicted on Figure 1.

DocFind:\6107\VI Assessment\72261-13.doc

Environmental Forensic Investigations, Inc.
200 S. Executive Drive, Suite 101, Brookfield, Wisconsin
Phone: 414-982-3988 • Fax 262-789-6699

Indoor air samples were collected from the basement spaces at 4312 (Salon Divine) and 4316 (RJ Builders). These samples were designated 6107-IA-4312 and 6107-IA-4316, respectively. The indoor air samples were collected from the breathable space (3 to 5 feet above the floor) in 6-liter vacuum canisters, regulated to withdraw a time-integrated sample over an 8-hour period during normal working hours. An outdoor air sample designated 6107-OA was collected near the southeast corner of the Aunt Peg's building to evaluate background conditions. All vacuum canisters were batch certified by the laboratory for quality assurance purposes. The air samples were submitted to Test America of Knoxville, Tennessee for analysis of volatile organic compounds (VOCs) according to EPA Method TO-15.

Weather data collected at ARPSWXNET Station MC9730, located in Glendale, Wisconsin were accessed to evaluate potential affects on the air sampling results. The following weather data were reported during the 8-hour sampling period:

- Temperature ranged from 33 to 40 °F ;
- Average wind speed was 7.7 mph from the northeast;
- Humidity averaged 96%;
- Barometric pressure fell steadily from 29.5 to 29.1 in Hg; and
- Rainfall occurred continuously at an average rate of approximately 0.15 inches per hour.

This data will be considered when evaluating and comparing future indoor air sample results.

Monitoring Results

Sub-slab pressure measurement data are summarized on Table 1. The micro-manometer measurements indicate that the SSDS has induced a negative pressure beneath the floor slab. The measurements collected on December 20, 2012, one month after system start-up, ranged from -0.884 to -0.001 inches of water. The highest (i.e. most negative) measurements were detected in monitoring points located 15 feet from each suction point.

The indoor and outdoor air analytical results are summarized in Table 2 and the laboratory analytical report is provided in Attachment A. Several VOCs were detected in the indoor air samples, including the dry cleaning solvent tetrachloroethylene (PCE),

refrigerant compounds dichlorofluoromethane and trichlorofluoromethane, and petroleum-related compounds benzene, 1,2,4-trimethylbenzene, and toluene. Indoor air samples 6107-IA-4312 and 6107-IA-4316 contained PCE at concentrations of 14 $\mu\text{g}/\text{m}^3$ and 3.3 $\mu\text{g}/\text{m}^3$, respectively, which are below the vapor action level (VAL) of 180 $\mu\text{g}/\text{m}^3$. The concentrations of all compounds detected in the indoor air samples were below the applicable VALs.

Dichlorofluoromethane was detected in the outdoor air sample at a concentration of 2.1 $\mu\text{g}/\text{m}^3$. No other VOCs were detected in the outdoor air sample. The absence of PCE and other compounds in the outdoor air sample indicates that the indoor air samples were not affected by background air quality.

Conclusions

The SSDS has induced negative pressure beneath the basement slab and concentrations of VOCs in indoor air are below the applicable VALs. The performance monitoring data indicates that the system is effectively mitigating potential vapor intrusion risk at the Aunt Peg's building.

Planned Activities

EnviroForensics will conduct the second of three SSDS performance monitoring events during March 2013. A letter report documenting the monitoring results will be completed and transmitted to you within one month of receipt of the laboratory analytical reports.

We appreciate the opportunity to provide you with this summary report. If you have any questions or require additional information, please feel free to contact us at 414-326-4412.



Sincerely,

Environmental Forensic Investigations, Inc

A handwritten signature in blue ink, appearing to read "Brian Kappen".

Brian Kappen, PG
Project Manager

A handwritten signature in blue ink, appearing to read "Wayne P. Fassbender".

Wayne Fassbender, PG, PMP
Senior Project Manager

cc: William P. Scott, Gonzalez Saggio & Harlan
William J. Mulligan, Davis and Kuelthau
Michael Scott, Davis and Kuelthau

attachments

TABLES

TABLE 1
SUMMARY OF SUB-SLAB PRESSURE MEASUREMENTS
AUNT PEG'S OAKLAND AVE, LLC
Shorewood Queensway Dry Cleaners
Shorewood, Wisconsin

Date	Point ID	4312 N. Oakland Ave				4316 N. Oakland Ave			
		SS-1	SS-3	SS-4	SS-5	SS-2	SS-6	SS-7	SS-8
11/19/2012	System Off	-0.003	0.008	0.000	0.003	--	--	--	--
	System On	-1.083	-0.855	-0.002	-0.037	--	--	--	--
12/20/2012	System On	-0.884	-0.018	-0.002	-0.001	-0.550	-0.070	-0.010	-0.003

Notes:

All pressure measurements reported in inches of water
 -- = no measurement

TABLE 2
SUMMARY OF INDOOR AND OUTDOOR AIR ANALYTICAL RESULTS
AUNT PEG'S OAKLAND AVE, LLC
Shorewood Queensway Dry Cleaners
Shorewood, Wisconsin

Sample ID	Sample Date	Tetrachloroethylene	Dichlorodifluoromethane	Trichlorofluoromethane	Benzene	1,2,4-Trimethylbenzene	1,2-Dichloroethane	Toluene
<i>4312 Salon</i> 6107-IA-4312	12/20/2012	14	3.0	6.1	0.65	1.1	<0.81	3.5
6107-IA-4314	12/20/2012	NS	NS	NS	NS	NS	NS	NS
<i>RSA Wilder</i> 6107-IA-4316	12/20/2012	3.3	2.8	2.6	<0.64	<0.98	1.7	8.3
<i>outdoor</i> 6107-OA	12/20/2012	<1.4	2.1	<1.1	<0.64	<0.98	<0.81	<0.75
Vapor Action Level¹		180	440	3,100	16	31	4.7	22,000

Notes:

Only detected compounds are listed

All Concentrations reported in units of ug/m³

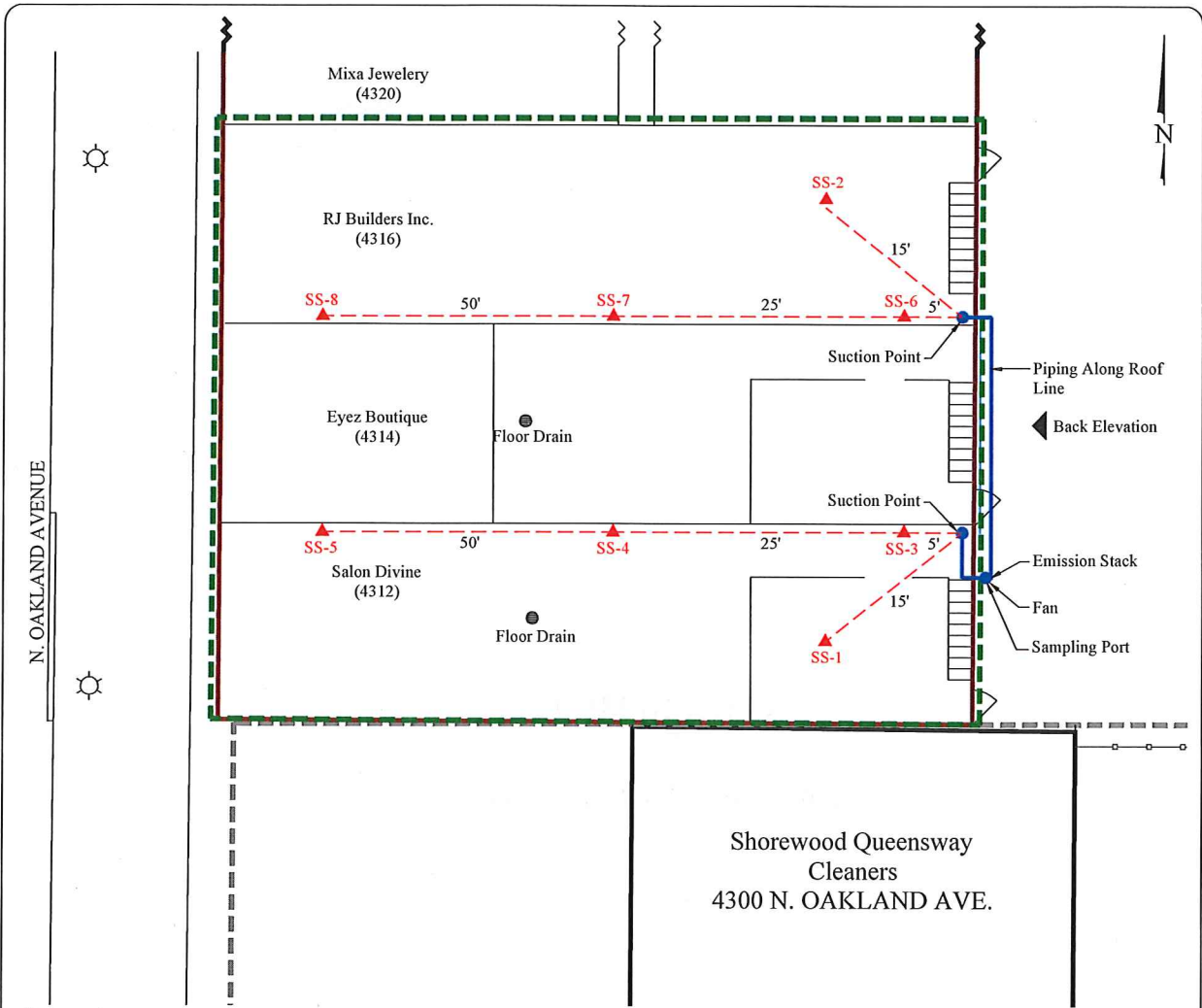
¹ The Vapor Action Levels are based on U.S. E.P.A.'s Regional Screening Levels (RSL's) for non-residential indoor air with a 1 x 10⁻⁵ lifetime cancer risk for carcinogens, or hazard index = 1 for non-carcinogens.

Bolded values exceed the laboratory method detection limit

Bolded and orange shaded values exceed the Vapor Action Level

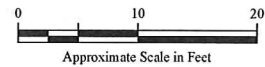
NS = No sample collected. EnviroForensics was not provided access.

FIGURES



Legend

- SS-1 ▲ Pressure testing points
- - - - - Shorewood Queensway property boundary
- - - - - Aunt Peg's basement area



Back of Building Showing As-Built System

No.	Date	Revision	Approved

ENVIROforensics
 ENVIRONMENTAL FORENSIC INVESTIGATIONS, INC.
 602 N Capitol Ave, Suite 210 • Indianapolis, IN 46204
 EnviroForensics.com

Date: 1/11/13
 Designed: MMM
 Drawn: MMM
 Checked: BK
 DWG file: 63101-11

SSDS INSTALLATION SCHEMATIC
 Aunt Peg Oakland LLC
 4312-4334 N. Oakland Avenue
 Shorewood, Wisconsin

Figure
1
Project
6107



ATTACHEMENT A

Laboratory Analytical Report



TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

6107-Queensway Clnrs

Lot #: H2L280417

Wayne Fassbender

Environmental Forensic Investi
200 S. Executive Drive
Ste. 101
Brookfield, WI 53045

TESTAMERICA LABORATORIES, INC.

A handwritten signature in black ink, appearing to read "J A McKinney", is written over a large, stylized circular flourish.

Jamie A. McKinney
Project Manager

January 4, 2013

ANALYTICAL METHODS SUMMARY

H2L280417

<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

H2L280417

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
MXQM5	001	6107-OA	12/20/12	15:30
MXQM7	002	6107-IA-4312	12/20/12	15:40
MXQM8	003	6107-IA-4316	12/20/12	15:50
MXQM9	004	6107-SSDS-2	12/20/12	14:05

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 H2L280417

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

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

The "Relinquished by" field on the chain of custody documentation did not contain a signature.

All samples were received without caps attached.

Quality Control and Data Interpretation

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

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	ACLASS	DoD ELAP		ADE-1434
TestAmerica Knoxville	Arkansas	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana	NELAC	6	LA110001
TestAmerica Knoxville	Louisiana	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina	North Carolina DENR	4	64
TestAmerica Knoxville	North Carolina	North Carolina PHL	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	USDA	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia	West Virginia DEP	3	345
TestAmerica Knoxville	West Virginia	West Virginia DHHR (DW)	3	9955C
TestAmerica Knoxville	Wisconsin	State Program	5	998044300

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Data Summary

Environmental Forensic Investigation Inc

Client Sample ID: 6107-OA

GC/MS Volatiles

Lot-Sample # H2L280417 -001 Work Order # MXQM51AA Matrix.....: AIR

Date Sampled...: 12/20/2012 Date Received...: 12/28/2012

Prep Date.....: 01/02/2013 Analysis Date... 01/02/2013

Prep Batch #....: 3002069

Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Dichlorodifluoromethane	0.42	0.20	2.1	0.99
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND	1.4
Chloromethane	ND	0.50	ND	1.0
Vinyl chloride	ND	0.20	ND	0.51
Bromomethane	ND	0.20	ND	0.78
Chloroethane	ND	0.20	ND	0.53
Trichlorofluoromethane	ND	0.20	ND	1.1
1,1-Dichloroethene	ND	0.20	ND	0.79
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.20	ND	1.5
Methylene chloride	ND	0.50	ND	1.7
1,1-Dichloroethane	ND	0.20	ND	0.81
cis-1,2-Dichloroethene	ND	0.20	ND	0.79
Chloroform	ND	0.20	ND	0.98
1,1,1-Trichloroethane	ND	0.20	ND	1.1
Carbon tetrachloride	ND	0.20	ND	1.3
Benzene	ND	0.20	ND	0.64
1,2-Dichloroethane	ND	0.20	ND	0.81
Trichloroethene	ND	0.20	ND	1.1
1,2-Dichloropropane	ND	0.20	ND	0.92
cis-1,3-Dichloropropene	ND	0.20	ND	0.91
Toluene	ND	0.20	ND	0.75
trans-1,3-Dichloropropene	ND	0.20	ND	0.91
1,1,2-Trichloroethane	ND	0.20	ND	1.1
Tetrachloroethene	ND	0.20	ND	1.4
1,2-Dibromoethane (EDB)	ND	0.20	ND	1.5
Chlorobenzene	ND	0.20	ND	0.92
Ethylbenzene	ND	0.20	ND	0.87
m-Xylene & p-Xylene	ND	0.20	ND	0.87
o-Xylene	ND	0.20	ND	0.87
Styrene	ND	0.20	ND	0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND	1.4
1,3,5-Trimethylbenzene	ND	0.20	ND	0.98
1,2,4-Trimethylbenzene	ND	0.20	ND	0.98
1,3-Dichlorobenzene	ND	0.20	ND	1.2
1,4-Dichlorobenzene	ND	0.20	ND	1.2
1,2-Dichlorobenzene	ND	0.20	ND	1.2
Benzyl chloride	ND	0.40	ND	2.1

Environmental Forensic Investigation Inc

Client Sample ID: 6107-OA

GC/MS Volatiles

Lot-Sample # H2L280417 - 001 Work Order # MXQM51AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
1,2,4-Trichlorobenzene	ND	1.0	ND	7.4
Hexachlorobutadiene	ND	1.0	ND	11
SURROGATE		PERCENT RECOVERY		LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene		89		60 - 140

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Environmental Forensic Investigation Inc

Client Sample ID: 6107-IA-4312

GC/MS Volatiles

Lot-Sample # H2L280417 -002 Work Order # MXQM71AA Matrix.....: AIR

Date Sampled...: 12/20/2012 Date Received...: 12/28/2012
 Prep Date.....: 01/02/2013 Analysis Date...: 01/03/2013
 Prep Batch #....: 3002069
 Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Dichlorodifluoromethane	0.60	0.20	3.0	0.99
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND	1.4
Chloromethane	ND	0.50	ND	1.0
Vinyl chloride	ND	0.20	ND	0.51
Bromomethane	ND	0.20	ND	0.78
Chloroethane	ND	0.20	ND	0.53
Trichlorofluoromethane	1.1	0.20	6.1	1.1
1,1-Dichloroethene	ND	0.20	ND	0.79
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.20	ND	1.5
Methylene chloride	ND	0.50	ND	1.7
1,1-Dichloroethane	ND	0.20	ND	0.81
cis-1,2-Dichloroethene	ND	0.20	ND	0.79
Chloroform	ND	0.20	ND	0.98
1,1,1-Trichloroethane	ND	0.20	ND	1.1
Carbon tetrachloride	ND	0.20	ND	1.3
Benzene	0.20	0.20	0.65	0.64
1,2-Dichloroethane	ND	0.20	ND	0.81
Trichloroethene	ND	0.20	ND	1.1
1,2-Dichloropropane	ND	0.20	ND	0.92
cis-1,3-Dichloropropene	ND	0.20	ND	0.91
Toluene	0.93	0.20	3.5	0.75
trans-1,3-Dichloropropene	ND	0.20	ND	0.91
1,1,2-Trichloroethane	ND	0.20	ND	1.1
Tetrachloroethene	2.1	0.20	14	1.4
1,2-Dibromoethane (EDB)	ND	0.20	ND	1.5
Chlorobenzene	ND	0.20	ND	0.92
Ethylbenzene	ND	0.20	ND	0.87
m-Xylene & p-Xylene	ND	0.20	ND	0.87
o-Xylene	ND	0.20	ND	0.87
Styrene	ND	0.20	ND	0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND	1.4
1,3,5-Trimethylbenzene	ND	0.20	ND	0.98
1,2,4-Trimethylbenzene	0.22	0.20	1.1	0.98
1,3-Dichlorobenzene	ND	0.20	ND	1.2
1,4-Dichlorobenzene	ND	0.20	ND	1.2
1,2-Dichlorobenzene	ND	0.20	ND	1.2
Benzyl chloride	ND	0.40	ND	2.1

Environmental Forensic Investigation Inc

Client Sample ID: 6107-IA-4312

GC/MS Volatiles

Lot-Sample # H2L280417 - 002 Work Order # MXQM71AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
1,2,4-Trichlorobenzene	ND	1.0	ND	7.4
Hexachlorobutadiene	ND	1.0	ND	11
SURROGATE		PERCENT RECOVERY		LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene		88		60 - 140

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Environmental Forensic Investigation Inc

Client Sample ID: 6107-IA-4316

GC/MS Volatiles

Lot-Sample # H2L280417 - 003 Work Order # MXQM81AA Matrix.....: AIR

Date Sampled...: 12/20/2012 Date Received...: 12/28/2012

Prep Date.....: 01/02/2013 Analysis Date... 01/03/2013

Prep Batch #.....: 3002069

Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Dichlorodifluoromethane	0.57	0.20	2.8	0.99
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND	1.4
Chloromethane	ND	0.50	ND	1.0
Vinyl chloride	ND	0.20	ND	0.51
Bromomethane	ND	0.20	ND	0.78
Chloroethane	ND	0.20	ND	0.53
Trichlorofluoromethane	0.46	0.20	2.6	1.1
1,1-Dichloroethene	ND	0.20	ND	0.79
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.20	ND	1.5
Methylene chloride	ND	0.50	ND	1.7
1,1-Dichloroethane	ND	0.20	ND	0.81
cis-1,2-Dichloroethene	ND	0.20	ND	0.79
Chloroform	ND	0.20	ND	0.98
1,1,1-Trichloroethane	ND	0.20	ND	1.1
Carbon tetrachloride	ND	0.20	ND	1.3
Benzene	ND	0.20	ND	0.64
1,2-Dichloroethane	0.41	0.20	1.7	0.81
Trichloroethene	ND	0.20	ND	1.1
1,2-Dichloropropane	ND	0.20	ND	0.92
cis-1,3-Dichloropropene	ND	0.20	ND	0.91
Toluene	2.2	0.20	8.3	0.75
trans-1,3-Dichloropropene	ND	0.20	ND	0.91
1,1,2-Trichloroethane	ND	0.20	ND	1.1
Tetrachloroethene	0.48	0.20	3.3	1.4
1,2-Dibromoethane (EDB)	ND	0.20	ND	1.5
Chlorobenzene	ND	0.20	ND	0.92
Ethylbenzene	ND	0.20	ND	0.87
m-Xylene & p-Xylene	ND	0.20	ND	0.87
o-Xylene	ND	0.20	ND	0.87
Styrene	ND	0.20	ND	0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND	1.4
1,3,5-Trimethylbenzene	ND	0.20	ND	0.98
1,2,4-Trimethylbenzene	ND	0.20	ND	0.98
1,3-Dichlorobenzene	ND	0.20	ND	1.2
1,4-Dichlorobenzene	ND	0.20	ND	1.2
1,2-Dichlorobenzene	ND	0.20	ND	1.2
Benzyl chloride	ND	0.40	ND	2.1

Environmental Forensic Investigation Inc

Client Sample ID: 6107-IA-4316

GC/MS Volatiles

Lot-Sample # H2L280417 - 003 Work Order # MXQM81AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
1,2,4-Trichlorobenzene	ND	1.0	ND	7.4
Hexachlorobutadiene	ND	1.0	ND	11
SURROGATE		PERCENT RECOVERY		LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene		87		60 - 140

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Environmental Forensic Investigation Inc

Client Sample ID: 6107-SSDS-2

GC/MS Volatiles

Lot-Sample # H2L280417 -004 Work Order # MXQM91AA Matrix.....: AIR

Date Sampled...: 12/20/2012 Date Received...: 12/28/2012
 Prep Date.....: 01/02/2013 Analysis Date...: 01/03/2013
 Prep Batch #.....: 3002069
 Dilution Factor.: 10 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Dichlorodifluoromethane	ND	2.0	ND	9.9
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	2.0	ND	14
Chloromethane	ND	5.0	ND	10
Vinyl chloride	ND	2.0	ND	5.1
Bromomethane	ND	2.0	ND	7.8
Chloroethane	ND	2.0	ND	5.3
Trichlorofluoromethane	ND	2.0	ND	11
1,1-Dichloroethene	ND	2.0	ND	7.9
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.0	ND	15
Methylene chloride	ND	5.0	ND	17
1,1-Dichloroethane	ND	2.0	ND	8.1
cis-1,2-Dichloroethene	20	2.0	79	7.9
Chloroform	ND	2.0	ND	9.8
1,1,1-Trichloroethane	ND	2.0	ND	11
Carbon tetrachloride	ND	2.0	ND	13
Benzene	ND	2.0	ND	6.4
1,2-Dichloroethane	ND	2.0	ND	8.1
Trichloroethene	7.3	2.0	39	11
1,2-Dichloropropane	ND	2.0	ND	9.2
cis-1,3-Dichloropropene	ND	2.0	ND	9.1
Toluene	ND	2.0	ND	7.5
trans-1,3-Dichloropropene	ND	2.0	ND	9.1
1,1,2-Trichloroethane	ND	2.0	ND	11
Tetrachloroethene	100	2.0	680	14
1,2-Dibromoethane (EDB)	ND	2.0	ND	15
Chlorobenzene	ND	2.0	ND	9.2
Ethylbenzene	ND	2.0	ND	8.7
m-Xylene & p-Xylene	ND	2.0	ND	8.7
o-Xylene	ND	2.0	ND	8.7
Styrene	ND	2.0	ND	8.5
1,1,2,2-Tetrachloroethane	ND	2.0	ND	14
1,3,5-Trimethylbenzene	ND	2.0	ND	9.8
1,2,4-Trimethylbenzene	ND	2.0	ND	9.8
1,3-Dichlorobenzene	ND	2.0	ND	12
1,4-Dichlorobenzene	ND	2.0	ND	12
1,2-Dichlorobenzene	ND	2.0	ND	12
Benzyl chloride	ND	4.0	ND	21

Environmental Forensic Investigation Inc

Client Sample ID: 6107-SSDS-2

GC/MS Volatiles

Lot-Sample # H2L280417 - 004 Work Order # MXQM91AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
1,2,4-Trichlorobenzene	ND	10	ND	74
Hexachlorobutadiene	ND	10	ND	110

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	89	60 - 140

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Environmental Forensic Investigation Inc

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample # H3A020000 - 069B Work Order # MXQ741AA Matrix.....: AIR

Prep Date.....: 12/19/2012 Date Received...: 12/22/2012

Prep Batch #.....: 01/02/2013 Analysis Date... 01/02/2013

Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Dichlorodifluoromethane	ND	0.20	ND	0.99
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND	1.4
Chloromethane	ND	0.50	ND	1.0
Vinyl chloride	ND	0.20	ND	0.51
Bromomethane	ND	0.20	ND	0.78
Chloroethane	ND	0.20	ND	0.53
Trichlorofluoromethane	ND	0.20	ND	1.1
1,1-Dichloroethene	ND	0.20	ND	0.79
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.20	ND	1.5
Methylene chloride	ND	0.50	ND	1.7
1,1-Dichloroethane	ND	0.20	ND	0.81
cis-1,2-Dichloroethene	ND	0.20	ND	0.79
Chloroform	ND	0.20	ND	0.98
1,1,1-Trichloroethane	ND	0.20	ND	1.1
Carbon tetrachloride	ND	0.20	ND	1.3
Benzene	ND	0.20	ND	0.64
1,2-Dichloroethane	ND	0.20	ND	0.81
Trichloroethene	ND	0.20	ND	1.1
1,2-Dichloropropane	ND	0.20	ND	0.92
cis-1,3-Dichloropropene	ND	0.20	ND	0.91
Toluene	ND	0.20	ND	0.75
trans-1,3-Dichloropropene	ND	0.20	ND	0.91
1,1,2-Trichloroethane	ND	0.20	ND	1.1
Tetrachloroethene	ND	0.20	ND	1.4
1,2-Dibromoethane (EDB)	ND	0.20	ND	1.5
Chlorobenzene	ND	0.20	ND	0.92
Ethylbenzene	ND	0.20	ND	0.87
m-Xylene & p-Xylene	ND	0.20	ND	0.87
o-Xylene	ND	0.20	ND	0.87
Styrene	ND	0.20	ND	0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND	1.4
1,3,5-Trimethylbenzene	ND	0.20	ND	0.98
1,2,4-Trimethylbenzene	ND	0.20	ND	0.98
1,3-Dichlorobenzene	ND	0.20	ND	1.2
1,4-Dichlorobenzene	ND	0.20	ND	1.2
1,2-Dichlorobenzene	ND	0.20	ND	1.2
Benzyl chloride	ND	0.40	ND	2.1

Environmental Forensic Investigation Inc
 Client Sample ID: INTRA-LAB BLANK
 GC/MS Volatiles

Lot-Sample # H3A020000 - 069B Work Order # MXQ741AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
1,2,4-Trichlorobenzene	ND	1.0	ND	7.4
Hexachlorobutadiene	ND	1.0	ND	11
SURROGATE		PERCENT RECOVERY		LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene		90		60 - 140

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Environmental Forensic Investigation Inc

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample # H3A020000 -069C Work Order # MXQ741AC Matrix.....: AIR

Prep Date.....: 12/19/2012 Date Received.: 12/22/2012

Prep Batch #.....: 01/02/2013 Analysis Date... 01/02/2013

Dilution Factor.: 3002069 Method.....: TO-15

PARAMETER	SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
Dichlorodifluoromethane	5.00	5.11	25	25.3	102	60 - 140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5.00	6.22	35	43.5	124	60 - 140
Chloromethane	5.00	4.66	10	9.62	93	60 - 140
Vinyl chloride	5.00	4.66	13	11.9	93	70 - 130
Bromomethane	5.00	4.69	19	18.2	94	70 - 130
Chloroethane	5.00	4.37	13	11.5	87	70 - 130
Trichlorofluoromethane	5.00	5.40	28	30.3	108	60 - 140
1,1-Dichloroethene	5.00	4.58	20	18.2	92	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	5.00	4.60	38	35.3	92	70 - 130
Methylene chloride	5.00	4.11	17	14.3	82	70 - 130
1,1-Dichloroethane	5.00	4.04	20	16.4	81	70 - 130
cis-1,2-Dichloroethene	5.00	4.16	20	16.5	83	70 - 130
Chloroform	5.00	4.21	24	20.6	84	70 - 130
1,1,1-Trichloroethane	5.00	4.38	27	23.9	88	70 - 130
Carbon tetrachloride	5.00	5.61	31	35.3	112	70 - 130
Benzene	5.00	3.63	16	11.6	73	70 - 130
1,2-Dichloroethane	5.00	4.18	20	16.9	84	70 - 130
Trichloroethene	5.00	4.93	27	26.5	99	70 - 130
1,2-Dichloropropane	5.00	3.67	23	16.9	73	70 - 130
cis-1,3-Dichloropropene	5.00	3.72	23	16.9	74	70 - 130
Toluene	5.00	3.71	19	14.0	74	70 - 130
trans-1,3-Dichloropropene	5.00	3.93	23	17.8	79	70 - 130
1,1,2-Trichloroethane	5.00	4.02	27	21.9	80	70 - 130
Tetrachloroethene	5.00	4.88	34	33.1	98	70 - 130
1,2-Dibromoethane (EDB)	5.00	4.38	38	33.7	88	70 - 130
Chlorobenzene	5.00	4.62	23	21.3	92	70 - 130
Ethylbenzene	5.00	4.08	22	17.7	82	70 - 130
m-Xylene & p-Xylene	10.0	8.12	43	35.3	81	70 - 130
o-Xylene	5.00	4.13	22	17.9	83	70 - 130
Styrene	5.00	4.30	21	18.3	86	70 - 130
1,1,2,2-Tetrachloroethane	5.00	3.94	34	27.1	79	70 - 130
1,3,5-Trimethylbenzene	5.00	4.34	25	21.4	87	70 - 130
1,2,4-Trimethylbenzene	5.00	4.19	25	20.6	84	70 - 130
1,3-Dichlorobenzene	5.00	5.27	30	31.7	105	70 - 130
1,4-Dichlorobenzene	5.00	5.32	30	32.0	106	70 - 130
1,2-Dichlorobenzene	5.00	5.14	30	30.9	103	70 - 130

Environmental Forensic Investigation Inc

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample #	H3A020000 - 069C		Work Order #	MXQ741AC		Matrix.....:	AIR
PARAMETER	SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS	
Benzyl chloride	5.00	4.20	26	21.8	84	70 - 130	
1,2,4-Trichlorobenzene	5.00	5.64	37	41.9	113	60 - 140	
Hexachlorobutadiene	5.00	6.52	53	69.5	130	60 - 140	
SURROGATE			PERCENT RECOVERY			LABORATORY CONTROL LIMITS (%)	
4-Bromofluorobenzene			92			60 - 140	

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

Sample Receipt Documentation

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

(722280417)
Canister Samples Chain of Custody Record



TestAmerica assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information				Project Manager: <u>Brian Kappan</u>				1 of 1 COCs											
Company: <u>Enviroforensics</u>				Phone: <u>317-972-7870</u>															
Address: <u>200 S Executive Drive</u>				Site Contact:															
City/State/Zip: <u>Brookfield WI 53005</u>				TAL Contact:															
Phone: <u>317-972-7870</u>																			
FAX:																			
Project Name: <u>6107-Queensway Cnrs</u>				Analysis Turnaround Time															
Site/Location: <u>Shorewood WI</u>				Standard (Specify)															
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)
<u>6107-DA</u>	<u>12/20/12</u>	<u>7:30</u>	<u>15:30</u>	<u>-29.2</u>	<u>-1</u>	<u>K346</u>	<u>1364</u>	<u>X</u>								<u>X</u>			
<u>6107-IA-4312</u>		<u>7:40</u>	<u>15:40</u>	<u>-29.2</u>	<u>-1</u>	<u>K406</u>	<u>04174</u>	<u>Y</u>							<u>X</u>				
<u>6107-IA-4316</u>		<u>7:50</u>	<u>15:50</u>	<u>-29.7</u>	<u>-9</u>	<u>K443</u>	<u>1153</u>	<u>X</u>							<u>X</u>				
<u>6107-SSDS-2</u>		<u>14:00</u>	<u>14:05</u>	<u>29.7</u>	<u>-5</u>	<u>15</u>	<u>L-A7168</u>	<u>X</u>											<u>X</u>
Sampled by: <u>J. Jordan</u>				Temperature (Fahrenheit)				Vapor Extraction System Sample CUSTODY SEALS INTACT RECEIVED AT AMBIENT TEMP BKO 12-28-12 1 BOX FAX# 538830035258											
		Interior	Ambient																
	Start	<u>65</u>	<u>35</u>																
	Stop	<u>60</u>	<u>30</u>																
				Pressure (Inches of Hg)															
		Interior	Ambient																
	Start																		
	Stop																		
Special Instructions/QC Requirements & Comments:																			
										SCANS / SEALS / HF 1A									
Canisters Shipped by:				Date/Time:				Canisters Received by:											
Samples Relinquished by:				Date/Time:				Received by: <u>Brian Kappan 12-28-12 10:15</u>											
Relinquished by:				Date/Time:				Received by:											

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

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: HAL280411

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)	/			<input type="checkbox"/> 1a Do not match COC <input type="checkbox"/> 1b Incomplete information <input type="checkbox"/> 1c Marking smeared <input type="checkbox"/> 1d Label torn <input type="checkbox"/> 1e No label <input type="checkbox"/> 1f COC not received <input checked="" type="checkbox"/> 1g Other:	14A 1G, ALL SAMPLES RECEIVED WITHOUT CAPS
2. Is the cooler temperature within limits? (> freezing temp. of water to 6°C, VOST: 10°C)			/	<input type="checkbox"/> 2a Temp Blank = _____ <input type="checkbox"/> 2b Cooler Temp = _____ <input type="checkbox"/> 2c Cooling initiated for recently collected samples, ice present.	
3. Were samples received with correct chemical preservative (excluding Encore)?			/	<input type="checkbox"/> 3a Sample preservative = _____	
4. Were custody seals present/intact on cooler and/or containers?	/			<input type="checkbox"/> 4a Not present <input type="checkbox"/> 4b Not intact <input type="checkbox"/> 4c Other: _____	
5. Were all of the samples listed on the COC received?	/			<input type="checkbox"/> 5a Samples received-not on COC <input type="checkbox"/> 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	/			<input type="checkbox"/> 6a Leaking <input type="checkbox"/> 6b Broken	
7. Were VOA samples received without headspace?			/	<input type="checkbox"/> 7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	/			<input type="checkbox"/> 8a Improper container	
9. Did you check for residual chlorine, if necessary?			/	<input type="checkbox"/> 9a Could not be determined due to matrix interference	
10. Were samples received within holding time?	/			<input type="checkbox"/> 10a Holding time expired	
11. For rad samples, was sample activity info. provided?			/	<input type="checkbox"/> Incomplete information	
12. For 1613B water samples is pH<9?			/	If no, was pH adjusted to pH 7 - 9 with sulfuric acid? _____	
13. Are the shipping containers intact?	/			<input type="checkbox"/> 13a Leaking <input type="checkbox"/> 13b Other: _____	
14. Was COC relinquished? (Signed/Dated/Timed)			/	<input checked="" type="checkbox"/> 14a Not relinquished	
15. Are tests/parameters listed for each sample?	/			<input type="checkbox"/> 15a Incomplete information	
16. Is the matrix of the samples noted?	/			<input type="checkbox"/> 15a Incomplete information	
17. Is the date/time of sample collection noted?	/			<input type="checkbox"/> 15a Incomplete information	
18. Is the client and project name/# identified?	/			<input type="checkbox"/> 15a Incomplete information	
19. Was the sampler identified on the COC?	/			<input type="checkbox"/> 19a Other	
Quote #: <u>90977</u> PM Instructions: _____					

Sample Receiving Associate: *Raymond* Date: 12-28-12

QA026R23.doc, 022812

Test America - Knoxville ---- Air Canister Dilution Log

Lot Number: H2L280417

Initial Can Pressure							Subsequent Dilutions												
Analyst/Date	Sample prep Time	Pbarr (in)	Sample ID	Can #	Pres. upon receipt (-in or + psig)	Adj. Initial Pres. (-in or + psig)	Analyst/Date	I / S	Pbarr (in)	Initial Pres. Pi (in)	Final Pres. Pf (psig)	First InCan Final Pres. Pf (psig)	Second In-can Final Pres. Pf (psig)	Third InCan Final Pres. Pf (psig)	Serial Dilution Can #	Vol (mL)	Final Pres. Pf (psig)	Comments	
12/31/12	1200	29.23	MXQM5	1366 ✓	+1.0	-													10246
12/31/12			MXQM7	04174 ✓	0	-													↓
			MXQM8	1153 ✓	-7.8	-													↓
			MXQM9	LA7168 ✓	-2.9	-													10223