CONSTRUCTION COMPLETION REPORT
SOIL VAPOR EXTRACTION IRM
LOOHNS CORNING SITE
SITE # 851028

WORK ASSIGNMENT NO. D004434-35

Prepared for:

New York State Department of Environmental Conservation
Albany, New York

Prepared by:

MACTEC Engineering and Consulting, PC
Portland, Maine

MACTEC No: 3612102148

MAY 2012

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Submitted by:

_____
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Project Manager

Approved by:

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Mark J. Stelmack, P.E.
Principal Professional

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

CCR	Construction Completion Report
FS	Feasibility Study
IRM	Interim Remedial Measure
MACTEC	MACTEC Engineering and Consulting, P.C.
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCE	tetrachloroethene
PVC	polyvinyl chloride
RI	Remedial Investigation
SC	Site Characterization
Site	Loohns Corning site
SVE	soil vapor extraction
$\mu g/m^3$	microgram(s) per cubic meter
VOC	volatile organic compound
wci	water column (inches)

1.0 INTRODUCTION AND SITE BACKGROUND

MACTEC Engineering and Consulting, P.C. (MACTEC) under contract to the New York State Department of Environmental Conservation (NYSDEC), is conducting a Remedial Investigation/Feasibility Study (RI/FS) at the Loohns Corning site (Site), a former dry cleaner in Corning, New York (Figure 1.1). The Site is listed as Class 2 Inactive Hazardous Waste Site No. 8-51-028 in the Registry of Hazardous Waste Sites in New York State (NYS).

MACTEC prepared this Construction Completion Report (CCR) to document an Interim Remedial Measure (IRM) performed in January 2012.

This CCR has been prepared in accordance with the NYSDEC requirements in work assignment No. D004434-35 dated February 19, 2010; with the July 2005 Superfund Standby Contract between MACTEC and the NYSDEC; and with DER-10/Technical Guidance for the Completion of Site Investigation and Remediation (NYSDEC, 2010).

1.1 SITE LOCATION

The Site is located at 37 East Pulteney Street in the City of Corning, Steuben County, New York. (Figure 1.1). The Site property consists of 0.5 acres including a light commercial/retail building with a large front parking lot. According to the City of Corning Assessor's office, the Site building was constructed in 1971. A former dry cleaner occupied one of the center commercial spaces. The building is one story and is slab-on-grade.

1.2 RI/FS AND IRM OVERVIEW

Based on the findings from a Site Characterization (SC) completed by MACTEC (MACTEC, 2007) and other prior environmental investigations, the NYSDEC reclassified the Site as a Class 2 Inactive hazardous waste site (Site No. 851028), and in 2010 directed MACTEC to perform a RI/FS.

The RI investigation was conducted based on the presence of chlorinated volatile organic compounds (VOCs), specifically tetrachloroethene (PCE), in Site media. PCE is a listed hazardous waste under

Title 6 of the New York Codes, Rules, and Regulations Part 371 (NYS, 1999). Based on SC and historical data, PCE is present in groundwater, soil, soil vapor (sub-slab and exterior soils), and indoor air at the Site. As a result of reported concentrations of PCE in soil, groundwater, sub-slab soil vapor, and indoor air samples, NYSDEC recommended further action. Although concentrations and locations of PCE detected in groundwater indicate a release at the Site, results do not indicate that PCE contamination is migrating off-site in groundwater at concentrations above the NYS GA standard.

During the RI, the NYSDEC identified a soil removal IRM as a priority. The NYSDEC determined that removing accessible contaminated soil would be an appropriate remedial action to mitigate residual soil contamination and potentially reduce levels of PCE in sub-slab vapor beneath the Site structure.

In June 2010, MACTEC conducted a sampling investigation to further evaluate the area of impacted soils and provide supporting data needed to design a soil removal IRM (MACTEC, 2011). In December 2010, removal of accessible impacted soil from the apparent release area to the rear of the former dry cleaners was completed. As part of the soil IRM, MACTEC installed a soil vapor extraction (SVE) well within the backfilled excavation that could be used for further source area contaminant reduction, if needed.

In June 2011, MACTEC collected groundwater samples from the two permanent monitoring wells and collected soil vapor samples from the exterior extraction well and from a sub-slab location within the former dry cleaner space. This sampling indicated reduced levels of impact to Site groundwater, but persistent elevated levels of PCE in sub-slab vapor. Based on the results, the NYSDEC identified a SVE IRM as a priority. The NYSDEC determined that installing a modified SVE system would be an appropriate remedial action to reduce residual source area impact in shallow soil beneath the building slab and to mitigate potential human exposure to potential soil vapor impact.

In January 2012, MACTEC installed a modified SVE system within the former dry cleaner. The system includes a single extraction point located in the rear hallway with a radon-type fan used to extract sub-slab vapor and vent above the structure roof. The system is currently operating. In February 2012, MACTEC collected sub-slab and indoor air samples to document post-SVE IRM

conditions. A RI/FS Report was submitted to NYSDEC in February 2012 (MACTEC, 2012). The report identified the completion of the SVE IRM but did not include system specifics or post-IRM results. The SVE IRM and post-IRM sampling is presented in this CCR.

1.3 IRM BIDDING INFORMATION AND AWARD

The NYSDEC identified the scope of the SVE IRM. MACTEC issued Request for Quotations on November 11, 2011. Bids were received from three responsive bidders. MACTEC reviewed the bids and recommended award to Mitigation Tech of Brockport, New York based on price, technical capability, and their ability to meet the project schedule. The NYSDEC authorized the award and MACTEC executed a subcontract agreement with mitigation Tech for the SVE IRM. Mitigation Tech's bid price was $4,650.00.

The SVE IRM was performed in January 2012.

2.0 IRM SCOPE OF WORK

2.1 DESCRIPTION OF IRM

The NYSDEC determined that an IRM consisting of a Modified Sub-Slab Vapor Extraction System was required at the Loohns Site. The IRM included the installation of a vapor point in a rear utility room in the former dry cleaner space. The vapor point was installed within a cavity excavated to a depth of 22 inches to provide a local vapor extraction function as well as general sub-slab depressurization.

The elements of the 2012 IRM included:

- a 16 x 16-inch saw cut opening in the concrete slab, excavated to a depth of 22 inches
- a vertical perforated 3-inch polyvinyl chloride (PVC) vapor point installed within the excavated cavity and surrounded by washed crushed stone backfill
- three-inch solid PVC riser extending vertically from floor opening and piped horizontally through the building wall at a height of 10-feet above grade
- one Radonaway GP-501 in-line fan mounted on the exterior wall with 3-inch PVC riser extending two feet above the roofline to vent extracted air
- an exterior electrical switch in the vicinity of the fan
- waterproof electrical conduit extending from the fan housing to the existing electrical panel on the rear wall of the building
- new concrete installed to seal the floor opening around solid PVC.
- a U-tube vacuum indicator on the vertical pipe run
- a test port on the exhaust stack
- sealing of observed slab joints, penetrations, and cracks in the vicinity of the suction point

2.2 PROJECT PREPARATION AND GOVERNING DOCUMENTS

MACTEC prepared project plans detailing the work elements, submittals, schedule, and project requirements. These were provided to bidders during the contractor selection process. Once the NYSDEC approved the subcontract award, MACTEC worked with the selected bidder (Mitigation Tech) to develop and review project plans for execution of the work.

Mitigation Tech submitted a Work Plan that was accepted by MACTEC in final form on January 17, 2012. The work plan provided descriptions of the methods, procedures, equipment and materials to be used to complete the project.

2.3 IRM EXECUTION

2.3.1 IRM Construction

The IRM construction was completed on January 25, 2012. Mitigation Tech completed all elements required in the Scope of Work. A Construction Report provided by the contractor is included in Appendix A.

After the fan was installed and operating, the vacuum was checked at the vapor test points that were installed in November 2011. The results, in inches of water column (wci) were:

TP-1 0.081 wci
TP-2 0.166 wci
TP-3 0.079 wci
TP-4 0.009 wci

The manometer reading at the suction point was 3.5”wci.

The system was determined to be operating successfully. Operation and Maintenance Instructions provided by Mitigation Tech are included in Appendix B.

2.3.2 Post-Construction Air and Vapor Surveys

As directed by the NYSDEC, MACTEC returned to the site on February 29, 2012 to collect indoor air and soil vapor samples to document conditions after the SVE system had been operating for a month. Samples were collected from the former dry cleaner space and the adjoining businesses located on either side of the former cleaner.

Table 2.1: IRM Documentation Samples

Structure	Location	Date	Sample ID	Media
03 (Tanning Salon)	IA-03	2/29/2012	LCIA003001	Air
03 (Tanning Salon)	SV-03	2/29/2012	LCSV003001	Vapor
04 (former Loohns Cleaner)	IA-04	2/29/2012	LCIA004001	Air
04 (former Loohns Cleaner)	SV-04	2/29/2012	LCSV004001	Vapor
05 (Tattoo Parlor)	IA-05	2/29/2012	LCIA005001	Air
05 (Tattoo Parlor)	SV-05	2/29/2012	LCSV005001	Vapor

Sample locations are shown in Figure 2.1. Structure 03 is an active business (tanning salon). The indoor air sample was obtained from the utility room at the rear (north) of the structure. The soil vapor sample was obtained from a closet within the utility room. At the former dry cleaner (Structure 04), that soil vapor sample was collected from the central hallway leading to the rear (north) exit. It is located near former soil vapor sample SV-01 collected during the RI. The indoor air sample was collected from a central location. At Structure 05, the indoor air and soil vapor samples were obtained from a storage room in the north portion of the business space and near the west wall shared with the former dry cleaner. MACTEC conducted a survey at each structure using the New York State Department of Health (NYSDOH) "Indoor Air Quality Questionnaire and Building Inventory" form. The completed surveys include sketches of the structure layout and the locations of the air and sub-slab samples. The survey forms and sampling field records are provided in Appendix C. Photographs of the IRM and post-IRM activities are included in Appendix D.

The air and sub-slab samples were collected into 6-liter SUMMA-type canisters over a 24-hour period. The air and vapor sample were analyzed by Enalytic, LLC of Syracuse for VOCs by United States Environmental Protection Agency Method TO-15.

The sample results are shown in Table 2.2. The results indicate that the IRM is effectively controlling vapor intrusion into the building interior and that modified SVE system is removing contaminants from under the slab. The concentration of PCE in sub-slab vapor at the former dry cleaner dropped from 130,000 micrograms per cubic meter ($\mu g/m^3$) in June 2011, as reported in the RI/FS Report (MACTEC, 2012), to 290 $\mu g/m^3$. PCE concentrations in sub-slab vapor in the samples from the adjoining structures were 48 $\mu g/m^3$ (SV-03) and 990 $\mu g/m^3$ (SV-05). Concentrations of PCE in indoor

air samples were low, ranging from 7.2 µg/m^3 (IA-03) to 11 µg/m^3 (IA-05). These concentrations are well below the NYSDOH guideline for PCE in indoor air of 100 µg/m^3 (NYSDOH, 2006).

2.3.3 Health and Safety

Work was performed by Mitigation Tech under a Site-specific Health and Safety Plan. MACTEC's Site engineer, Mr. David Lovejoy, oversaw and documented the IRM activities and served as MACTEC's Health and Safety Officer. Mr. Lovejoy conducted a work plan/safety meeting before the work commenced to review the planned tasks and associated safety hazards.

All work was accomplished under Level D personal protective equipment. The outdoor air temperature during the period of construction was consistently slightly above freezing. This served to minimize the potential for volatile organic release to air. No VOCs were recorded in the breathing zone or near the excavation faces during the excavation. Dust monitoring was not deemed necessary by the NYSDEC due to the limited nature of the excavation, the weather, and on-site conditions.

All work was accomplished safely and there were no safety or health incidents during the course of the project.

3.0 REFERENCES

MACTEC, 2007. Final Site Characterization Report, Region 8 Dry Cleaning Sites, Loohns Corning Site, Corning, New York, March 2007.

MACTEC, 2011. Construction Completion Report Loohns Corning Site # 851028, MACTEC Engineering and Consulting, P.C., February 2011.

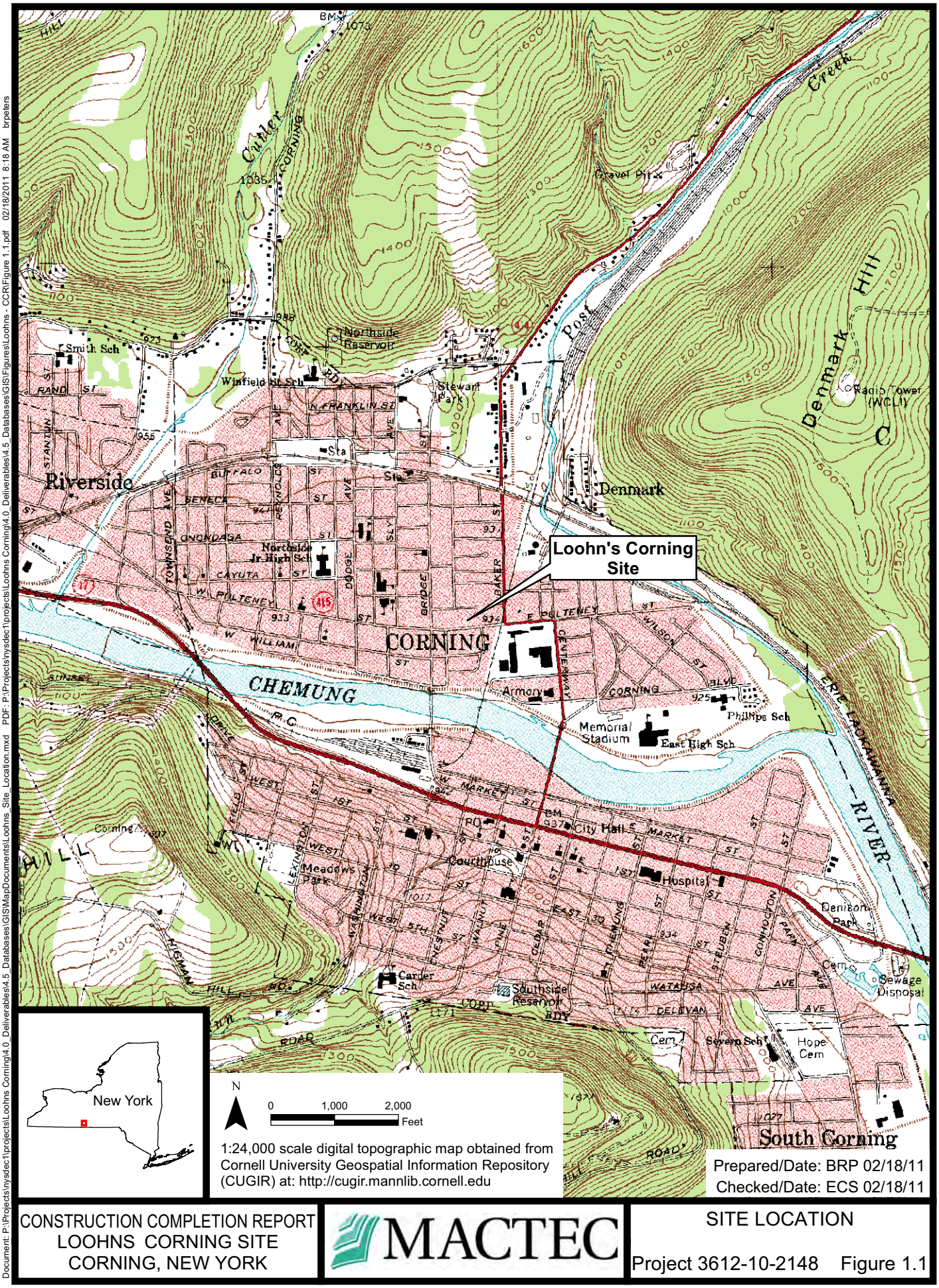
MACTEC, 2012. Remedial Investigation / Feasibility Study Report Loohns Corning Site #851028, February 2012.

NYS, 1999. New York Codes, Rules, and Regulations, Title 6, Part 371- Identification and Listing of Hazardous Wastes. Amended November 1999.

NYSDEC, 2010. DER-10/Technical Guidance for Site Investigation and Remediation, FINAL, May 3 2010

NYSDOH, 2006. Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Final, October 2006.

FIGURES



1:24,000 scale digital topographic map obtained from Cornell University Geospatial Information Repository (CUGIR) at: http://cugir.mannlib.cornell.edu

Prepared/Date: BRP 02/18/11
Checked/Date: ECS 02/18/11

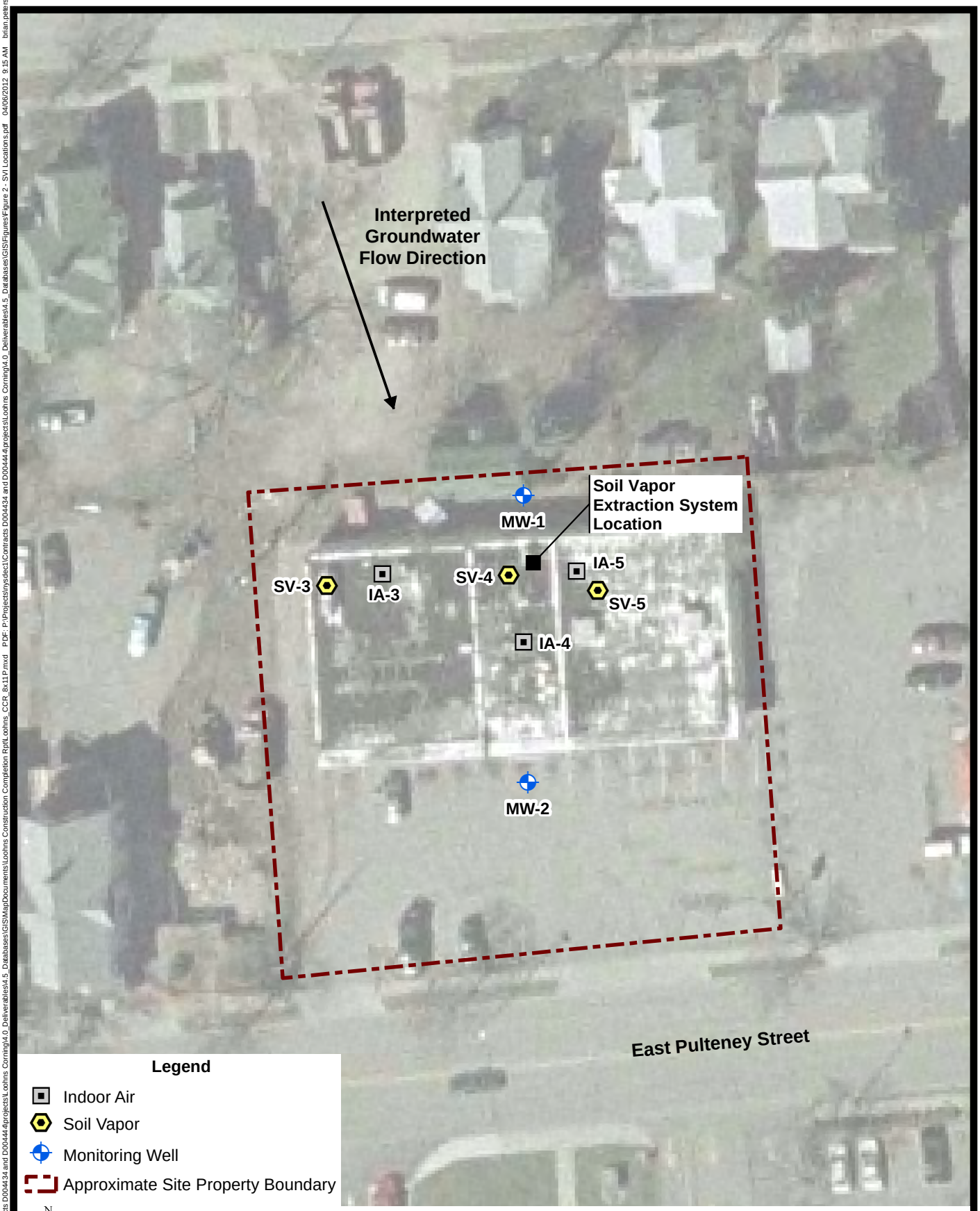
CONSTRUCTION COMPLETION REPORT
LOOHNS CORNING SITE
CORNING, NEW YORK

MACTEC

SITE LOCATION

Project 3612-10-2148 Figure 1.1

Document: P:\Projects\nysdec1\projects\Loohns Corning\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\Loohns_Site_Location.mxd PDF: P:\Projects\nysdec1\projects\Loohns Corning\4.0_Deliverables\4.5_Databases\GIS\Figures\Loohns - CCRFigure 1.1.pdf 02/18/2011 8:18 AM brpeters



Steuben County color digital orthoimagery (2002) obtained from New York State GIS Clearinghouse at: http://www.nysgis.state.ny.us

Prepared/Date: BRP 04/06/12
Checked/Date: BAS 04/06/12

CONSTRUCTION COMPLETION REPORT
LOOHNS CORNING SITE
CORNING, NEW YORK

MACTEC

SOIL VAPOR INTRUSION
SAMPLE LOCATIONS
Project 3612-10-2148 Figure 2.1

Document: P:\Projects\nyse1\Contracts D004434 and D004444\projects\Loohns Corning\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\Loohns Construction Completion Rpt\Loohns_CCR_8x11P.mxd PDF: P:\Projects\nyse1\Contracts D004434 and D004444\projects\Loohns Corning\4.0_Deliverables\4.5_Databases\GIS\Figures\Figure 2- SVI Locations.pdf 04/06/2012 9:15 AM brian.peters

TABLES

Table 2.2: IRM Indoor Air and Sub-slab Vapor Sample Results

Structure ID	Structure 3				Structure 4				Structure 5			
Location	IA-03		SV-03		IA-04		SV-04		IA-05		SV-05	
Sample Date	2/29/2012		2/29/2012		2/29/2012		2/29/2012		2/29/2012		2/29/2012	
Sample ID	LCIA003001		LCSV003001		LCIA004001		LCSV004001		LCIA005001		LCSV005001	
QC Code	FS		FS		FS		FS		FS		FS	
Parameter Name	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,2,4-Trimethylbenzene	1	U	**1.6**		1	U	1	U	1	U	**9.1**	
1,2-Dichloroethane	0.82	U	0.82	U	0.82	U	0.82	U	**0.91**		0.82	U
1,3,5-Trimethylbenzene	**0.5**	J	**2.6**		1	U	**0.6**	J	1	U	**17**	
2-Butanone	**3.8**		**2.7**		**2.1**		**1.6**		**1.9**		**16**	
2-Propanol	**21**		**31**		**28**		**16**		**14000**		**110**	
4-Ethyltoluene	1	U	**1.6**		1	U	1	U	1	U	**9.7**	
4-Methyl-2-pentanone	0.83	U	**0.5**	J	0.83	U	0.83	U	**0.8**	J	**4.9**	
Acetone	**23**		**26**		**24**		**15**		**240**		**130**	
Benzene	**0.91**		**1.9**		**0.88**		**0.6**	J	**0.91**		**11**	
Carbon disulfide	0.63	U	**1.5**		0.63	U	0.63	U	**0.5**	J	**5.4**	
Carbon tetrachloride	**0.51**		1.3	U	**0.51**		1.3	U	**0.51**		1.3	U
Chloromethane	**1.4**		0.42	U	**1.5**		0.42	U	**1.6**		0.42	U
Dichlorodifluoromethane	**2.5**		**4.5**		**2.6**		**2.5**		**2.6**		**2.6**	
Ethyl benzene	**0.7**	J	**1**		0.88	U	0.88	U	0.88	U	**5.2**	
Heptane	0.83	U	**13**		0.83	U	0.83	U	0.83	U	**110**	
Hexane	0.72	U	**9.5**		0.72	U	0.72	U	0.72	U	**110**	
Styrene	0.87	U	**1.3**		0.87	U	0.87	U	0.87	U	0.87	U
Tetrachloroethene	**7.2**		**48**		**4.6**		**290**		**11**		**990**	
Tetrahydrofuran	0.6	U	0.6	U	**1.6**		0.6	U	**1.4**		0.6	U
Toluene	**2.8**		**5.1**		**2.1**		**3.4**		**3.3**		**110**	
Trichloroethene	**0.2**	J	1.1	U	0.22	U	1.1	U	**0.2**	J	**1.4**	
Trichlorofluoromethane	**1.4**		**1.4**		**3.4**		**3.4**		**2.3**		**2.5**	
Xylene, o	**0.8**	J	**1.6**		**0.5**	J	**0.5**	J	**0.5**	J	**12**	
Xylenes (m&p)	**1.8**		**4.9**		**1**	J	**1**	J	**1**	J	**40**	

Notes:
SVI = Soil Vapor Intrusion
VOCs = volatile organic compounds

Samples analyzed by EPA Method TO-15
Results in micrograms per cubic meter (µg/m3).
Detected compounds shown in **bold.**

Qualifiers
U = not detected at the reporting limit
J = estimated concentration

FS = Field Sample
IA = indoor air
SV = sub-slab soil vapor

APPENDIX A

MITIGATION TECH CONSTRUCTION COMPLETION REPORT

mitigation tech *vapor intrusion specialists*

CONSTRUCTION COMPLETION REPORT

April 2, 2012

Eric C. Sandin
Project Manager
AMEC Environment & Infrastructure
511 Congress Street | Suite 200
Portland, Maine 04101
Via email: eric.sandin@amec.com

Re: Former Loohns Cleaners Site # 3-44-055, 34 East Pulteny St., Corning, NY
Contract# D004434-35
Construction Report for sub-slab depressurization system
Date of Completion: January 25, 2012

This document presents a construction report, performance evaluation, O&M advice and certification of effectiveness for the sub-slab depressurization (SSD) system installed at 34 East Pulteny St., Corning, NY

Overview

The subject area includes an approximately 600 square foot portion of a commercial use building, consisting of slab on grade one story construction. The area is bounded on the rear by an alley and on the east and west sides by active businesses. Based on an analysis of sub-slab air communication data and a general building assessment, a single suction point SSD System was installed using principles and equipment typically used for radon mitigation in buildings. The primary objective of implementing this measure was to mitigate potential intrusion of vapors related to former dry cleaning operations that could migrate into occupied space from beneath the slab. This would be achieved by maintaining a negative pressure of at least .004 water column inches (wci) below the concrete slab relative to the air pressure above the slab in the subject area. All work is in compliance with the NYS DOH document, "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006".

Work Description

Work began with a general building assessment to determine appropriate and likely locations for fan, suction cavity and other SSD system components. Sub-slab air communication testing, supported by observations during slab drilling, suggested that a properly positioned single suction cavity would provide minimum acceptable vacuum influence to the subject area.

.

A suction cavity was constructed in the rear utility area near the furnace. The cavity consisted of approximately two cubic foot of excavated material, accessed through a 16" x 16" cut in the slab. The cavity was excavated to a depth of 22" with the intent of modifying its primary sub-slab depressurizing function to include also a limited degree of soil vapor extraction. Excavated material was coarse sand mixed with fine gravel. Cavity was backfilled with coarse gravel. Suction cavity was connected by 3" SCH 40 PVC risers to an appropriately sloped horizontal pipe exiting the rear sidewall of the building. All pipe was secured by metal hardware.

The vacuum fan was located at the rear of the building about 10' above grade and has an exhaust extending about two feet above the roof line. The fan model is a RADONAWAY GP-501, selected after testing as a good combination of performance, efficiency and durability. The fan has an adjacent weatherproof switch with *Sealtite* conduit connected to new breaker at the electrical panel near the rear entrance. The fan is held in place by 3" x 3" Fernco rubber couplings and is not audible in the building interior. Estimated power consumption is 150w. The fan is creating a vacuum of approximately 3.5 wci (water column inch) and is removing about 30 CFM from the sub-slab. Discharge is direct to atmosphere. A U-tube style manometer was installed on the pipe to indicate the presence of vacuum. Floor cracks and other slab penetrations were inspected for air leakage and polyurethane sealant applied where necessary. The fan was painted on site to resist yellowing.

The SSD System was energized and inspected for leaks, backdrafting, labeling and proper component operation. In order to verify system effectiveness and as a performance evaluation, four test points (TP) were established at distances from the suction cavities suitable to determine that the sub-slab of the subject area was being depressurized at least to the objective, as shown in the following table:

TP #	**Location/distance from suction point**	**Vacuum in negative wci**
1	Center, 18'	.081
2	Center, east, 11'	.166
3	Center, east, 13'	.079
4	Center, 28'	.009

Test points consist of a 5/8" drill hole through the slab, cleaned by vacuuming, and semi-permanently closed with closed cell backer rod and polyurethane sealant. Readings were by a Fluke Model 922 Micromanometer.

Work concluded about 6:00 PM on January 25, 2012, and system was left in operating condition. Site was cleaned and items restored to original positions. All debris and unused materials were removed from site.

See attached schematic for component locations

Standard Operating Procedure

1. Become familiar with the Sub-Slab Depressurization (SSD) System which has been permanently installed in this building to mitigate the potential intrusion of harmful soil vapor. This system consists of a vacuum fan, pipes, indicator gauge and other components designed to create vacuum beneath the concrete slab.
2. Leave fan in continuous operation, except for emergency conditions. Fans restart automatically in event of power loss. The fan has an on/off switch mounted near the fan on the exterior of the building. In the event of unusual fan noise, failure to start, or repeated circuit breaker trip, turn fan off and call for service.
3. Regularly inspect fan gauge to verify that the value, indicated by a mark on the gauge, has not changed significantly from the position of the mark. Gauge is inspected by observing the level of colored fluid.

4. Normal system operation requires unchanged structural conditions. Report any changes in structure, HVAC systems, slab conditions, etc., so that the change can be evaluated for impact on the SSD System. For service, call MITIGATION TECH at 1-800-637-9228
5. Ensure that a periodic inspection is performed, to include the following:
   - Visual inspection of the complete Sub-Slab Depressurization System (e.g., vent fan, piping, vacuum gauge, labeling, etc.)
   - Inspection of all components for condition and proper operation
   - Identification of any leaks in accordance with Sections 4.3.1(a) of the NYS DOH Guidance
   - Inspection of the discharge point to verify that no air intakes have been located nearby
   - Performance of pressure field extension testing (to ensure that the system is maintaining a vacuum beneath the slab)

Annual Maintenance Procedure

1. Conduct a visual inspection of the complete System (e.g., vent fan, piping, warning devices, labeling on system, etc.);
2. Conduct an inspection of all surfaces to which vacuum is applied;
3. Inspect all components for condition and proper operation;
4. Identify and repair any leaks in accordance with Sections 4.3.1(a) and 4.3.4(a) of the Guidance (i.e.; with the systems running, smoke tubes will used to check for leaks through concrete cracks, floor joints and at the suction points and any leaks will be resealed until smoke is no longer observed flowing through the opening).
5. Inspect the exhaust or discharge point(s) to verify that no air intakes have been located nearby;
6. Conduct pressure field extension testing (to ensure that the system is maintaining a vacuum beneath the entire slab) ; and
7. Interview an appropriate occupant seeking comments and observations regarding the operation of the System.

Certification

I hereby certify that the SSD System at this location is installed properly and is effective in achieving its above stated purpose.

Nicholas E. Mouganis EPA listing # 15415-I; NEHA ID# 100722

55 SHUMWAY ROAD, BROCKPORT, NEW YORK, 14420 * OFFICE/FAX 585-637-7430

APPENDIX B

OPERATION AND MAINTENANCE INSTRUCTIONS

mitigation tech *vapor intrusion specialists*

OPERATION AND MAINTENANCE INSTRUCTIONS

Former Loohns Cleaners Site # 3-44-055

34 East Pulteny St., Corning, NY

Standard Operating Procedure

1. Become familiar with the Sub-Slab Depressurization (SSD) System which has been permanently installed in this building to mitigate the potential intrusion of harmful soil vapor. This system consists of a vacuum fan, pipes, indicator gauge and other components designed to create vacuum beneath the concrete slab.
2. Leave fan in continuous operation, except for emergency conditions. Fans restart automatically in event of power loss. The fan has an on/off switch mounted near the fan on the exterior of the building. In the event of unusual fan noise, failure to start, or repeated circuit breaker trip, turn fan off and call for service.
3. Regularly inspect fan gauge to verify that the value, indicated by a mark on the gauge, has not changed significantly from the position of the mark. Gauge is inspected by observing the level of colored fluid.
4. Normal system operation requires unchanged structural conditions. Report any changes in structure, HVAC systems, slab conditions, etc., so that the change can be evaluated for impact on the SSD System. For service, call MITIGATION TECH at 1-800-637-9228
5. Ensure that a periodic inspection is performed, to include the following:
   - Visual inspection of the complete Sub-Slab Depressurization System (e.g., vent fan, piping, vacuum gauge, labeling, etc.)
   - Inspection of all components for condition and proper operation
   - Identification of any leaks in accordance with Sections 4.3.1(a) of the NYS DOH Guidance
   - Inspection of the discharge point to verify that no air intakes have been located nearby
   - Performance of pressure field extension testing (to ensure that the system is maintaining a vacuum beneath the slab)

For service, call MITIGATION TECH
1-800-637-9228

Annual Maintenance Procedure

1. Conduct a visual inspection of the complete System (e.g., vent fan, piping, warning devices, labeling on system, etc.);
2. Conduct an inspection of all surfaces to which vacuum is applied;
3. Inspect all components for condition and proper operation;
4. Identify and repair any leaks in accordance with Sections 4.3.1(a) and 4.3.4(a) of the Guidance (i.e.; with the systems running, smoke tubes will used to check for leaks through concrete cracks, floor joints and at the suction points and any leaks will be resealed until smoke is no longer observed flowing through the opening).
5. Inspect the exhaust or discharge point(s) to verify that no air intakes have been located nearby;
6. Conduct pressure field extension testing (to ensure that the system is maintaining a vacuum beneath the entire slab) ; and
7. Interview an appropriate occupant seeking comments and observations regarding the operation of the System.

For service, call MITIGATION TECH
1-800-637-9228

APPENDIX C

INDOOR AIR AND SUB-SLAB VAPOR SURVEY AND SAMPLING RECORDS

INDOOR AIR SAMPLING RECORD

PROJECT NAME: Loohn's Corning | LOCATION ID: Structure 03 | DATE: 2/28/2012

PROJECT NO./TASK NO.: 3612102148 | CLIENT: NYSDEC

PROJECT LOCATION: Corning, New York | SAMPLER NAME: Brandon Shaw

WEATHER CONDITIONS (AM): 36°F, overcast | SAMPLER SIGNATURE:

WEATHER CONDITIONS (PM): 27°F, snowing | CHECKED BY: RCM | DATE: 3/7/12

SUMMA Canister Record Information

SUB-SLAB SOIL VAPOR SAMPLE		BASEMENT INDOOR AIR SAMPLE		FIRST FLOOR AIR SAMPLE		AMBIENT AIR SAMPLE	
Flow Regulator Number:	2716 ✓	Flow Regulator Number:	3952 ✓	Flow Regulator Number:		Flow Regulator Number:	
Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):	
Canister Serial Number:	282 ✓	Canister Serial Number:	304 ✓	Canister Serial Number:		Canister Serial Number:	
Start Date/Time	02-28-12 @ 1053 ✓	Start Date/Time	02-28-12 @ 1055 ✓	Start Date/Time		Start Date/Time	
Start Pressure ("Hg):	-29 ✓	Start Pressure ("Hg):	-30 ✓	Start Pressure ("Hg):		Start Pressure ("Hg):	
Stop Date/Time	02-29-12 @ 1021 ✓	Stop Date/Time	02-29-12 @ 1019 ✓	Stop Date/Time		Stop Date/Time	
Stop Pressure ("Hg):	-1 ✓	Stop Pressure ("Hg):	-2 ✓	Stop Pressure ("Hg):		Stop Pressure ("Hg):	
Sample ID: LCSV003001		Sample ID: LCIA003001		Sample ID:		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished	closet	Story/Level:	1st	Story/Level:		Direction from Building	
Floor Slab Thickness:	~6"	Room:	laundry	Room:		Distance from Building:	
Potential Vapor Entry Points:	none	Potential Vapor Entry Points:	door-leak	Potential Vapor Entry Points:		Distance from Roadway:	
Floor Surface:	Concrete	Floor Surface:	tile	Floor Surface:		Ground Surface:	
Noticable Odor:	none	Noticable Odor:	running related	Noticable Odor:		Noticable Odor:	
PID Reading (ppb):	498 ✓	PID Reading (ppb):	550 ✓	PID Reading (ppb):		PID Reading (ppb):	
Intake Depth/Height:	~8"	Intake Height:	~5'	Intake Height:		Intake Height above Ground Surface:	
Helium Test Conducted? Breakthrough %:	No	Indoor Air Temp	~70°F	Indoor Air Temp		Intake tubing?	

Comments/Location Sketch:

MACTEC

511 Congress Street, Portland, ME 04101

FIGURE 4.19
INDOOR AIR SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

Structure 03

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Brandon Shaw Date/Time Prepared 2-28-12

Preparer's Affiliation AMEC - Portland, ME Phone No. (207) 828-3367

Purpose of Investigation Soil vapor Intrusion Investigation - Lochn's Post Mitigation Testing

1. OCCUPANT:

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

RACT

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: _____

Checked For Completeness: RCM
3/7/12

Structure 03

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split-Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? 4

If the property is commercial, type?

Business Type(s) H+R Block, Tatoo parlor, vacant, tanning salon

Does it include residences (i.e., multi-use)? Y / N If yes, how many? NA

Other characteristics:

Number of floors 1 Building age unknown

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

Structure 07

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	crawlspace	slab	other none
c. Basement floor:	concrete	dirt	stone	other none
d. Basement floor:	uncovered	covered	covered with none	
e. Concrete floor:	unsealed	sealed	sealed with _____	
f. Foundation walls:	poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with paint	
h. The basement is:	wet	damp	dry	moldy (NA)
i. The basement is:	finished	unfinished	partially finished (NA)	
j. Sump present?	Y (N)			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: 0 (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

leaky door (drafty),

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: electric

Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other _____
Air conditioning:	Central Air	Window units	Open Windows	None

Structure 03

Are there air distribution ducts present? (Y) / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

Cold air return; duct work tight (newer) and wrapped in insulation + duct taped,

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally <- Seldom Almost Never

Level	General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)
Basement	N/A
1st Floor	tanning salons, waiting area, storage, bathroom
2nd Floor	
3rd Floor	
4th Floor	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. **Is there an attached garage?** Y / (N)

b. **Does the garage have a separate heating unit?** Y / N / (NA)

c. **Are petroleum-powered machines or vehicles stored in the garage** (e.g., lawnmower, atv, car) Y / N / (NA)
Please specify _____

d. **Has the building ever had a fire?** Y / N When? unknown

e. **Is a kerosene or unvented gas space heater present?** Y / (N) Where? _____

f. **Is there a workshop or hobby/craft area?** Y / (N) Where & Type? _____

g. **Is there smoking in the building?** Y / (N) How frequently? _____

h. **Have cleaning products been used recently?** (Y) / N When & Type? _____

i. **Have cosmetic products been used recently?** (Y) / N When & Type? _____

Structure 03

j. Has painting/staining been done in the last 6 months? (Y) N Where & When? inside areas

k. Is there new carpet, drapes or other textiles? (Y) N Where & When? _____

l. Have air fresheners been used recently? (Y) / N When & Type? _____

m. Is there a kitchen exhaust fan? Y (N) If yes, where vented? —

n. Is there a bathroom exhaust fan? (Y) N If yes, where vented? outside

o. Is there a clothes dryer? (Y) N If yes, is it vented outside? (Y) N

p. Has there been a pesticide application? Y (N) When & Type? _____

Are there odors in the building? (Y) N
If yes, please describe: tanning related odors

Do any of the building occupants use solvents at work? Y / (N)
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? —

If yes, are their clothes washed at work? Y (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) — No
Yes, use dry-cleaning infrequently (monthly or less) — (Unknown)
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? (Y) / N Date of Installation: January 2012
Is the system active or passive? (Active)/Passive → adjacent structure

9. WATER AND SEWAGE

Water Supply:	(Public Water)	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	(Public Sewer)	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. **Provide reasons why relocation is recommended:** _____

b. **Residents choose to:** remain in home relocate to friends/family relocate to hotel/motel

c. **Responsibility for costs associated with reimbursement explained?** Y / N

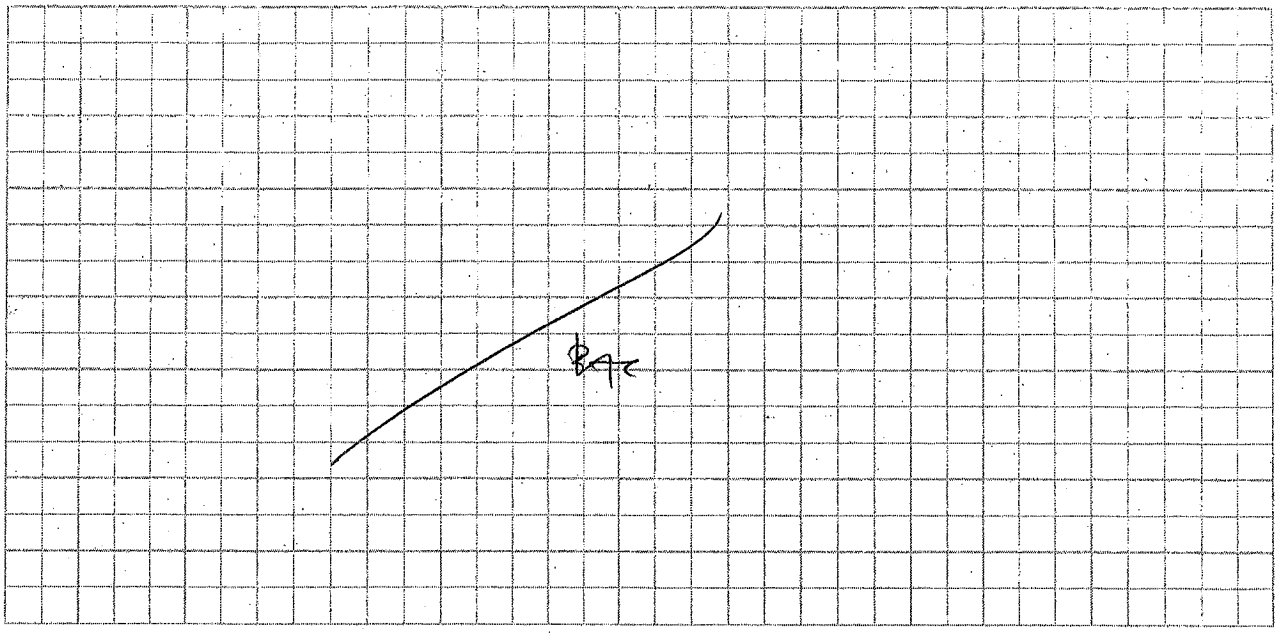
d. **Relocation package provided and explained to residents?** Y / N

Structure 03

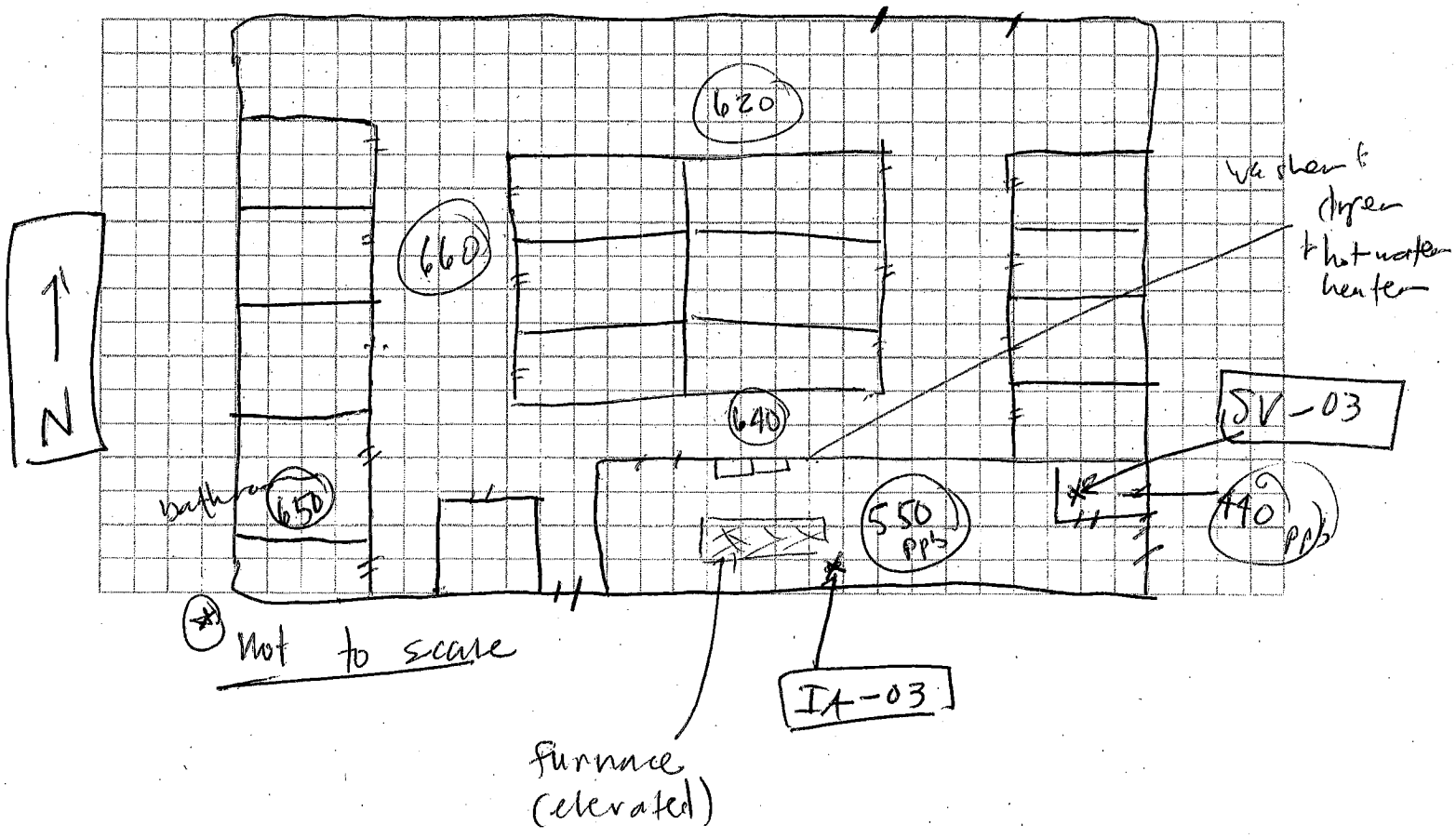
11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



First Floor:

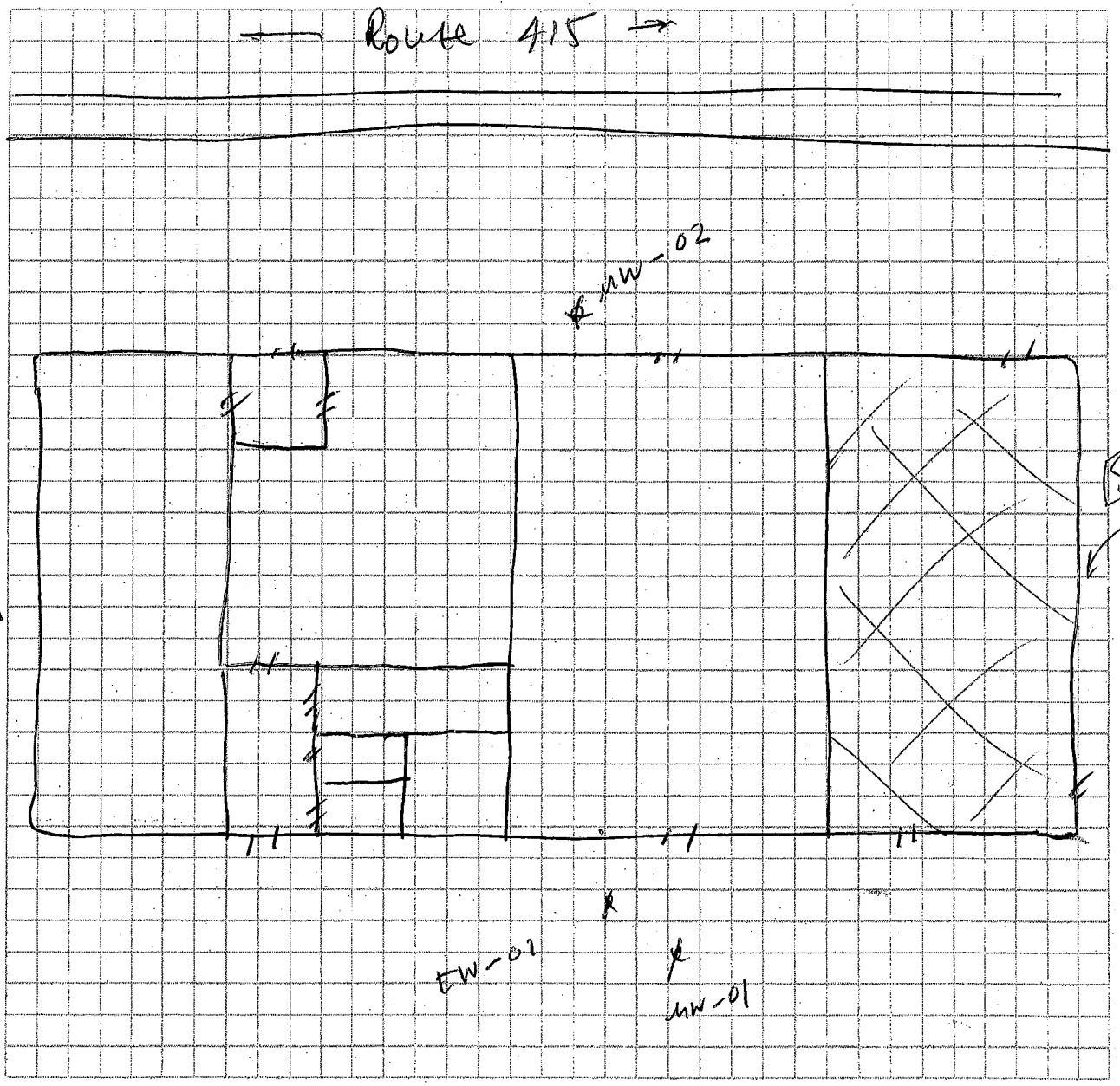


12. OUTDOOR PLOT

structure 03

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



Structure 03

13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: ppb mini Rae - Pike

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N
Storage Laundry	Roundup	1 gal	U	—	562 (ppb)	Y
	Great stuff	12 oz	UO	—	598	
	grout/tile sealer	2 gal	U		622	
	Tub grout	(2) 10 oz	U		622	
	waterborne Acrylic industrial enamel	1 gal	U		643	
	Minwax Polyurethane	12 oz	U		621	
	spray paint	12 oz	U	Acetone, xylene, toluene	702	
	Denatured Alcohol Strong	64 oz	U	Alcohols	2130	
	Goof Off	4.5 oz	U	Acetone, xylene	741	
	Lysol Cleaner	2 gal	U		520	
	Australian gold Disinfectant Cleaner	2 gal	U	didecyl dimethyl ammonium chloride	760	

Box

* Describe the condition of the product containers as **Unopened (UO), Used (U)**, or **Deteriorated (D)**

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

INDOOR AIR SAMPLING RECORD

PROJECT NAME: Loohn's Corning | LOCATION ID: Structure 04 | DATE: 2/28/2012

PROJECT NO./TASK NO.: 3612102148 | CLIENT: NYSDEC

PROJECT LOCATION: Corning, New York | SAMPLER NAME: Brandon Shaw

WEATHER CONDITIONS (AM): 40'F, overcast | SAMPLER SIGNATURE:

WEATHER CONDITIONS (PM): 29'F, snowing | CHECKED BY: RCM | DATE: 3/7/12

SUMMA Canister Record Information

SUB-SLAB SOIL VAPOR SAMPLE		BASEMENT INDOOR AIR SAMPLE		FIRST FLOOR AIR SAMPLE		AMBIENT AIR SAMPLE	
Flow Regulator Number:	2660 ✓	Flow Regulator Number:	3957 ✓	Flow Regulator Number:		Flow Regulator Number:	
Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):	
Canister Serial Number:	320 ✓	Canister Serial Number:	308 ✓	Canister Serial Number:		Canister Serial Number:	
Start Date/Time	02-28-12 @1135 ✓	Start Date/Time	02-28-12 @1131 ✓	Start Date/Time		Start Date/Time	
Start Pressure ("Hg):	-29 ✓	Start Pressure ("Hg):	-30 ✓	Start Pressure ("Hg):		Start Pressure ("Hg):	
Stop Date/Time	02-29-12 @1110 ✓	Stop Date/Time	02-29-12 @1105 ✓	Stop Date/Time		Stop Date/Time	
Stop Pressure ("Hg):	-10 ✓	Stop Pressure ("Hg):	-5 ✓	Stop Pressure ("Hg):		Stop Pressure ("Hg):	
Sample ID: LCSV004001		Sample ID: LCIA004001		Sample ID:		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished	On grade	Story/Level:	Main	Story/Level:		Direction from Building	
Floor Slab Thickness:	~6"	Room:	Kitchen Storage	Room:		Distance from Building:	
Potential Vapor Entry Points:	none	Potential Vapor Entry Points:	Fan door	Potential Vapor Entry Points:		Distance from Roadway:	
Floor Surface:	concrete	Floor Surface:	tile	Floor Surface:		Ground Surface:	
Noticable Odor:	none	Noticable Odor:	none	Noticable Odor:		Noticable Odor:	
PID Reading (ppb):	128 ✓	PID Reading (ppb):	21 ✓	PID Reading (ppb):		PID Reading (ppb):	
Intake Depth/Height:	~8"	Intake Height:	~4'	Intake Height:		Intake Height above Ground Surface:	
Helium Test Conducted? Breakthrough %:	No	Indoor Air Temp	~60'F	Indoor Air Temp		Intake tubing?	

Comments/Location Sketch:

MACTEC

511 Congress Street, Portland, ME 04101

FIGURE 4.19
INDOOR AIR SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Brandon Shaw Date/Time Prepared 02-28-12 @

Preparer's Affiliation AMEC - Portland, ME Phone No. (207) 807-7353

Purpose of Investigation Soil Vapor Intrusion Investigation - Looby's Post Mitigation Testing

Structure 04

1. OCCUPANT:

Interviewed: Y / (N)

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: (Y) / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	(Commercial)/Multi-use
Industrial	Church	Other: _____

Checked For Completeness: RCM 3/7/12

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

Structure 04

If multiple units, how many? 9

If the property is commercial, type?

Business Type(s) H+R Block, tattoo parlor, vacant, tanning salon

Does it include residences (i.e., multi-use)? Y / (N) If yes, how many? ✓

Other characteristics:

Number of floors 1 Building age Unknown

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

Structure 01

5. **BASEMENT AND CONSTRUCTION CHARACTERISTICS** (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	crawlspace	slab	other none
c. Basement floor:	concrete	dirt	stone	other none
d. Basement floor:	uncovered	covered	covered with none	
e. Concrete floor:	unsealed	sealed	sealed with _____	
f. Foundation walls:	poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with paint	
h. The basement is:	wet	damp	dry	moldy NA
i. The basement is:	finished	unfinished	partially finished No	
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: 0 (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

leaky/drafty front door,

6. **HEATING, VENTING and AIR CONDITIONING** (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: unknown

Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other _____
Air conditioning:	Central Air	Window units	Open Windows	None

Are there air distribution ducts present? (Y) N

Structure 04

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

new furnace just installed; air ducts are v. tight.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	
1st Floor	storage, bathrooms, sales floor
2nd Floor	
3rd Floor	
4th Floor	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / (N)

b. Does the garage have a separate heating unit? Y / N / (NA)

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / (NA) Please specify _____

d. Has the building ever had a fire? Y / N When? unknown

e. Is a kerosene or unvented gas space heater present? Y / (N) Where? _____

f. Is there a workshop or hobby/craft area? Y / (N) Where & Type? _____

g. Is there smoking in the building? Y / (N) How frequently? _____

h. Have cleaning products been used recently? Y / (N) When & Type? _____

i. Have cosmetic products been used recently? Y / (N) When & Type? _____

Structure 04

j. Has painting/staining been done in the last 6 months? Y / (N) Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / (N) Where & When? _____

l. Have air fresheners been used recently? Y / (N) When & Type? _____

m. Is there a kitchen exhaust fan? (Y) / N If yes, where vented? Outside

n. Is there a bathroom exhaust fan? Y / (N) If yes, where vented? _____

o. Is there a clothes dryer? Y / (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? Y / (N)
If yes, please describe: N/A

Do any of the building occupants use solvents at work? Y / (N)
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? Vacant

If yes, are their clothes washed at work? Y / (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) (No)
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? (Y) / N Date of Installation: January 2012
Is the system active or passive? (Active)/Passive

9. WATER AND SEWAGE

Water Supply: (Public Water) Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: (Public Sewer) Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

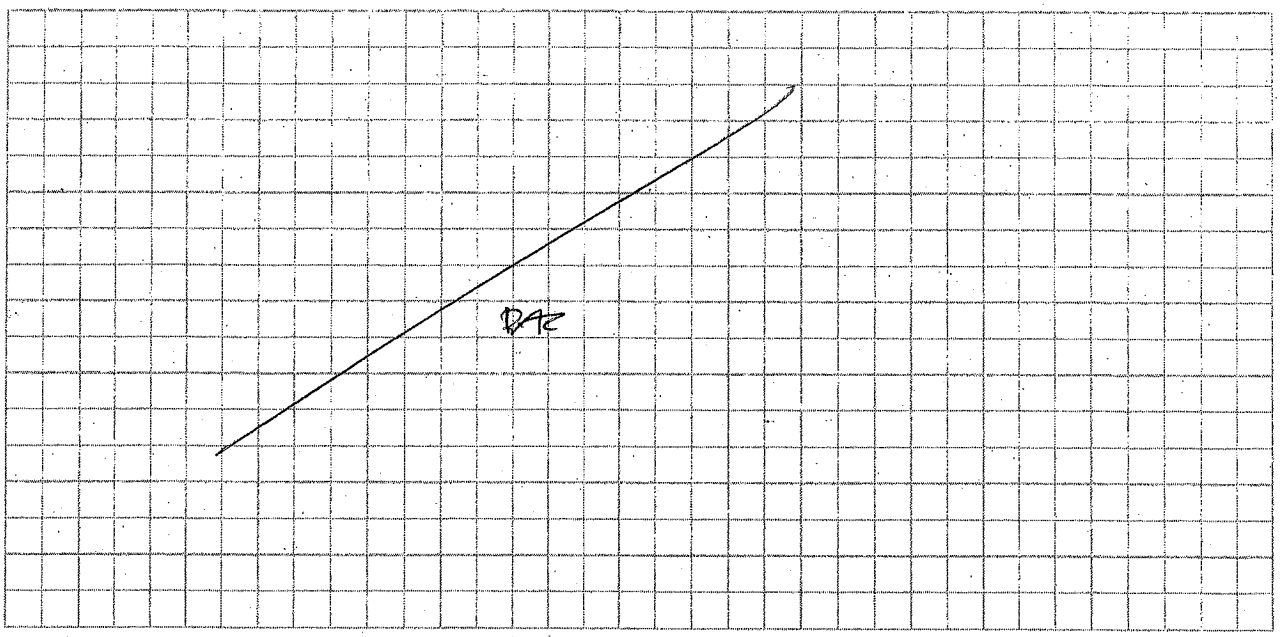
d. Relocation package provided and explained to residents? Y / N

structure 04

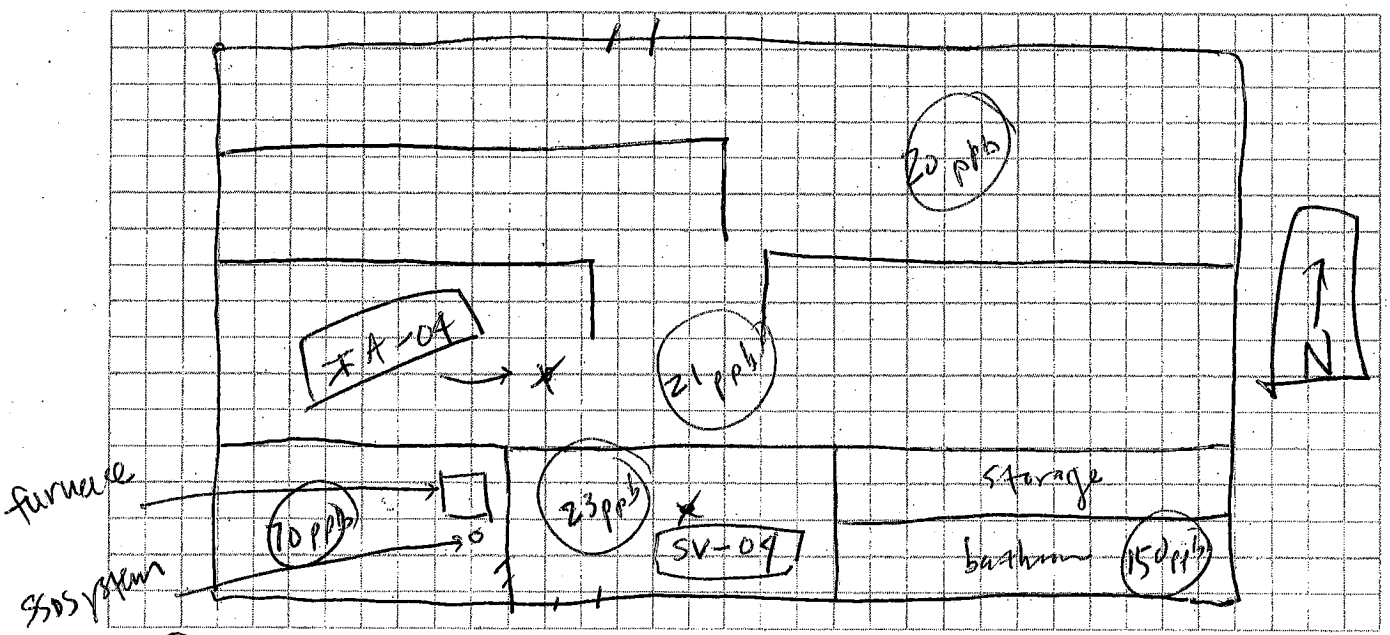
11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



First Floor:



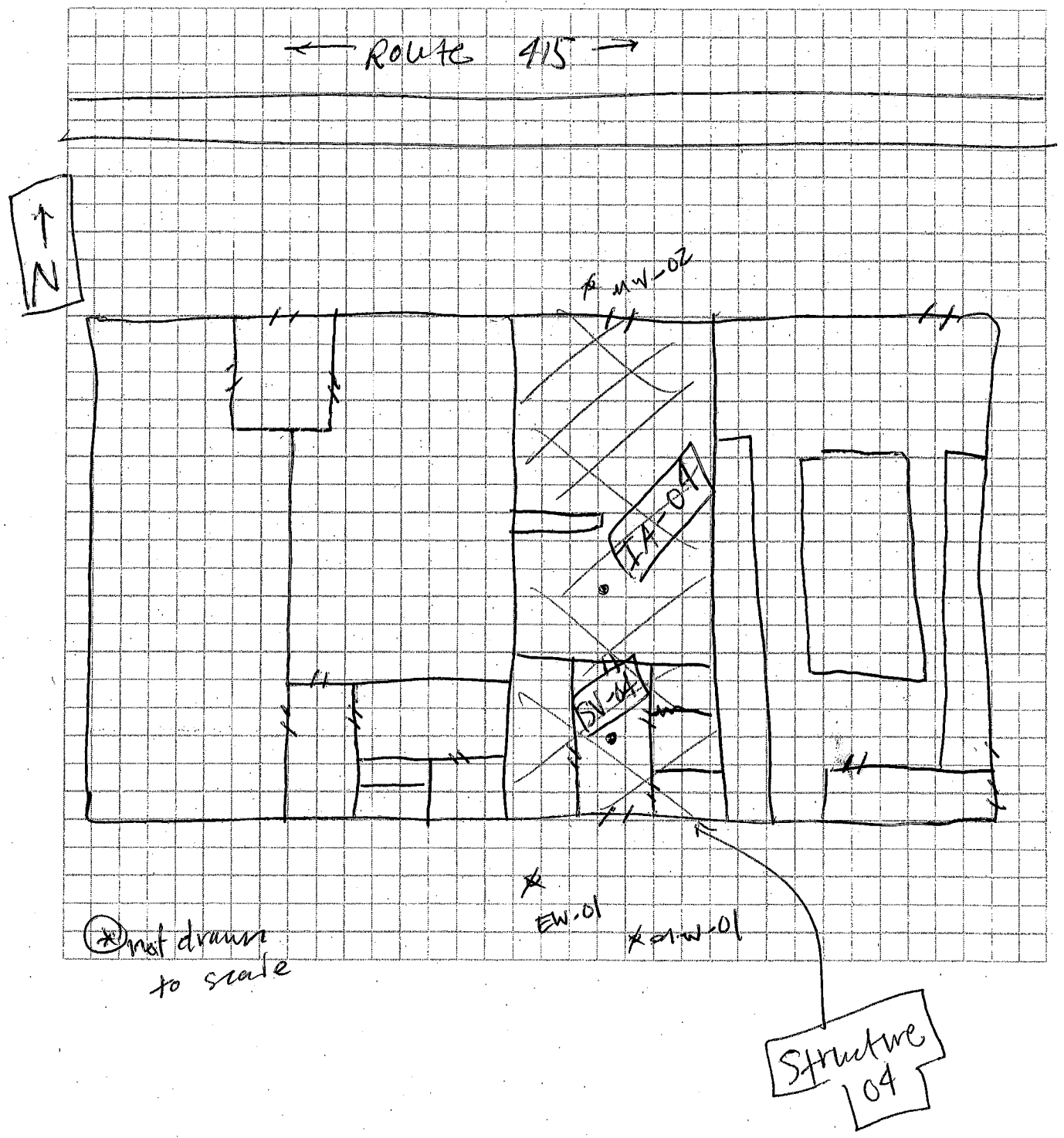
(N) not drawn to scale

12. OUTDOOR PLOT

Structure 04

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



* not drawn to scale

13. PRODUCT INVENTORY FORM

Structure 04

Make & Model of field instrument used: ppb - Minirae - Pine

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N
Kitchen	glass cleaner	1 gal	U	—	120 ppb	Y
"	Stainless Steel Cleaner	2 16 oz	U	Mineral oil	311	
Storage	Min wax stain	32 oz	U		496	
	WD-40	2 cans	U		26	
	Drywall corner bead	16 oz	U	Acetone, heptane	483	
	Propane fuel	—	U		29	
	Latex paint	6 gal	U		110	
Bath	Hand soap	—	U		—	
Closet	CLR	1 gal	U		22	
Kitchen	goo gone	—	U		26	
"	Simple green	—	U		15	
SSDS	System Hose	—	—		898 ppb	
	BC					

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

INDOOR AIR SAMPLING RECORD

PROJECT NAME: Loohn's Corning | LOCATION ID: Structure 05 | DATE: 2/28/2012

PROJECT NO./TASK NO.: 3612102148 | CLIENT: NYSDEC

PROJECT LOCATION: Corning, New York | SAMPLER NAME: Brandon Shaw

WEATHER CONDITIONS (AM): 40'F, overcast | SAMPLER SIGNATURE:

WEATHER CONDITIONS (PM): 33'F, raining/snow | CHECKED BY: RLM | DATE: 3/7/12

SUMMA Canister Record Information

SUB-SLAB SOIL VAPOR SAMPLE		BASEMENT INDOOR AIR SAMPLE		FIRST FLOOR AIR SAMPLE		AMBIENT AIR SAMPLE	
Flow Regulator Number:	4970	Flow Regulator Number:	2708	Flow Regulator Number:		Flow Regulator Number:	
Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):	
Canister Serial Number:	130	Canister Serial Number:	333	Canister Serial Number:		Canister Serial Number:	
Start Date/Time	02-28-12@1159	Start Date/Time	02-28-12@1256	Start Date/Time		Start Date/Time	
Start Pressure ("Hg):	-29	Start Pressure ("Hg):	-29	Start Pressure ("Hg):		Start Pressure ("Hg):	
Stop Date/Time	02-29-12@1134	Stop Date/Time	02-29-12@1135	Stop Date/Time		Stop Date/Time	
Stop Pressure ("Hg):	-1	Stop Pressure ("Hg):	-2	Stop Pressure ("Hg):		Stop Pressure ("Hg):	
Sample ID: LCSV005001		Sample ID: LCIA005001		Sample ID:		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished	Finished (overgrade)	Story/Level:	Main	Story/Level:		Direction from Building	
Floor Slab Thickness:	~6"	Room:	storage	Room:		Distance from Building:	
Potential Vapor Entry Points:	none	Potential Vapor Entry Points:	leaky door	Potential Vapor Entry Points:		Distance from Roadway:	
Floor Surface:	concrete	Floor Surface:	tile	Floor Surface:		Ground Surface:	
Noticable Odor:	none	Noticable Odor:	tattoo cleaning products	Noticable Odor:		Noticable Odor:	
PID Reading (ppb):	329	PID Reading (ppb):	1680	PID Reading (ppb):		PID Reading (ppb):	
Intake Depth/Height:	~9"	Intake Height:	~4'	Intake Height:		Intake Height above Ground Surface:	
Helium Test Conducted? Breakthrough %:	No	Indoor Air Temp	~68'F	Indoor Air Temp		Intake tubing?	

Comments/Location Sketch:

MACTEC
511 Congress Street, Portland, ME 04101

FIGURE 4.19
INDOOR AIR SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Brandon Shaw Date/Time Prepared 02-28-12 @ 1540

Preparer's Affiliation AMEC - Portland, ME Phone No. (207) 828-3367

Purpose of Investigation Soil vapor intrusion investigation - Lobhn's post mitigation Testing

1. OCCUPANT:

Interviewed: Y (N)

Last Name: _____ First Name: _____

Structure 05

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / (N)

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: _____

checked For Completeness: RLM
3/7/12

structure 05

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? 4

If the property is commercial, type?

Business Type(s) H+R Block, vacant, (tattoo parlor), tanning salon

Does it include residences (i.e., multi-use)? Y / (N) If yes, how many? —

Other characteristics:

Number of floors 1 Building age Unknown

Is the building insulated? (Y) / N How air tight? Tight / (Average) / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

Structure 05

5. **BASEMENT AND CONSTRUCTION CHARACTERISTICS** (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	crawlspace	slab	other none
c. Basement floor:	concrete	dirt	stone	other none
d. Basement floor:	uncovered	covered	covered with none	
e. Concrete floor:	unsealed	sealed	sealed with tile	
f. Foundation walls:	poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with paint	
h. The basement is:	wet	damp	dry	moldy (na)
i. The basement is:	finished	unfinished	partially finished	(na)
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: Ø (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

leaky/drafty door

6. **HEATING, VENTING and AIR CONDITIONING** (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: unknown

Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other _____
Air conditioning:	Central Air	Window units	Open Windows	None

Are there air distribution ducts present? (Y) N

Structure 05

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

cannot view due to being in drop ceiling

7. OCCUPANCY

Is basement/lowest level occupied? Full-time (Occasionally) Seldom Almost Never

Level	General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)
Basement	
1st Floor	tattoo shop, bathroom, storage, office
2nd Floor	
3rd Floor	
4th Floor	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y (N)

b. Does the garage have a separate heating unit? Y / (N) / (NA)

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / (NA) Please specify _____

d. Has the building ever had a fire? Y / N When? unknown

e. Is a kerosene or unvented gas space heater present? Y / (N) Where? _____

f. Is there a workshop or hobby/craft area? Y (N) Where & Type? _____

g. Is there smoking in the building? Y (N) How frequently? _____

h. Have cleaning products been used recently? (Y) / N When & Type? _____

i. Have cosmetic products been used recently? (Y) / N When & Type? _____

structure 05

j. Has painting/staining been done in the last 6 months? Y / (N) Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / (N) Where & When? _____

l. Have air fresheners been used recently? (Y) / N When & Type? _____

m. Is there a kitchen exhaust fan? Y / (N) If yes, where vented? —

n. Is there a bathroom exhaust fan? (Y) / N If yes, where vented? outside

o. Is there a clothes dryer? Y / (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? Y / (N)
If yes, please describe: NA

Do any of the building occupants use solvents at work? Y / (N)
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? NA

If yes, are their clothes washed at work? Y / (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) — No
Yes, use dry-cleaning infrequently (monthly or less) — (Unknown)
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? (Y) / N Date of Installation: January 2012
Is the system active or passive? (Active)/Passive
(*) adjacent unit in the structure.

9. WATER AND SEWAGE

Water Supply:	(Public Water)	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	(Public Sewer)	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

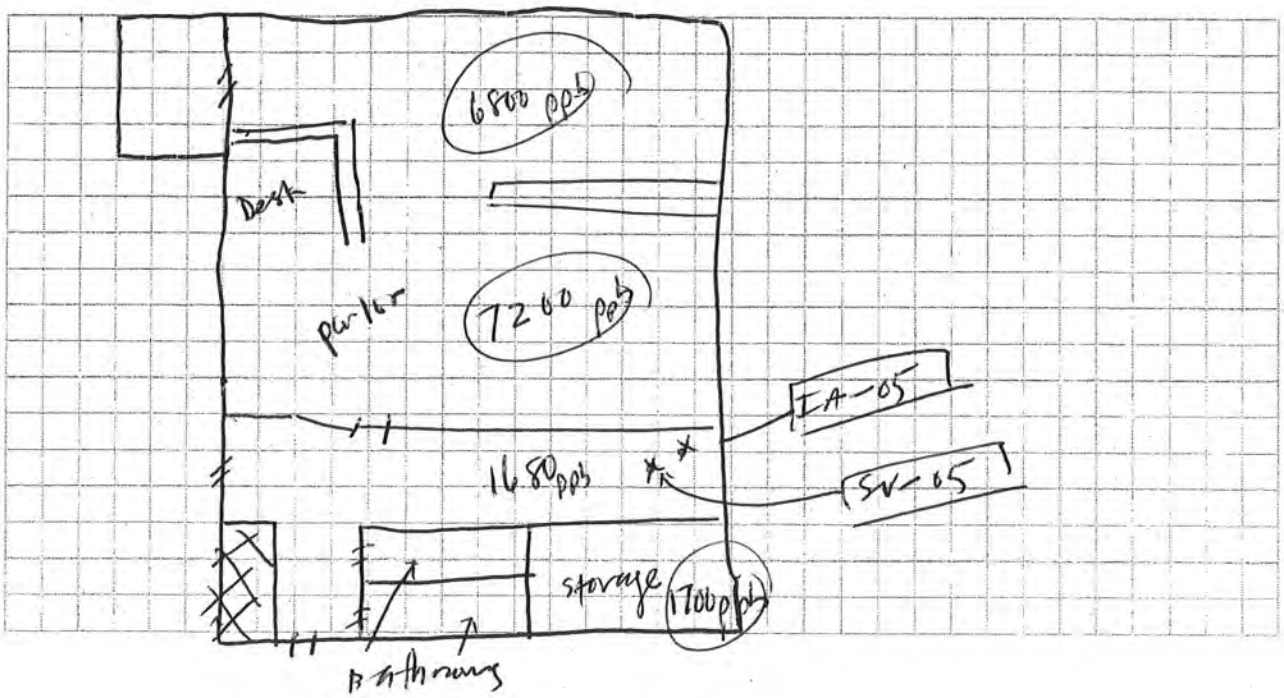
Structure 05

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:

First Floor:

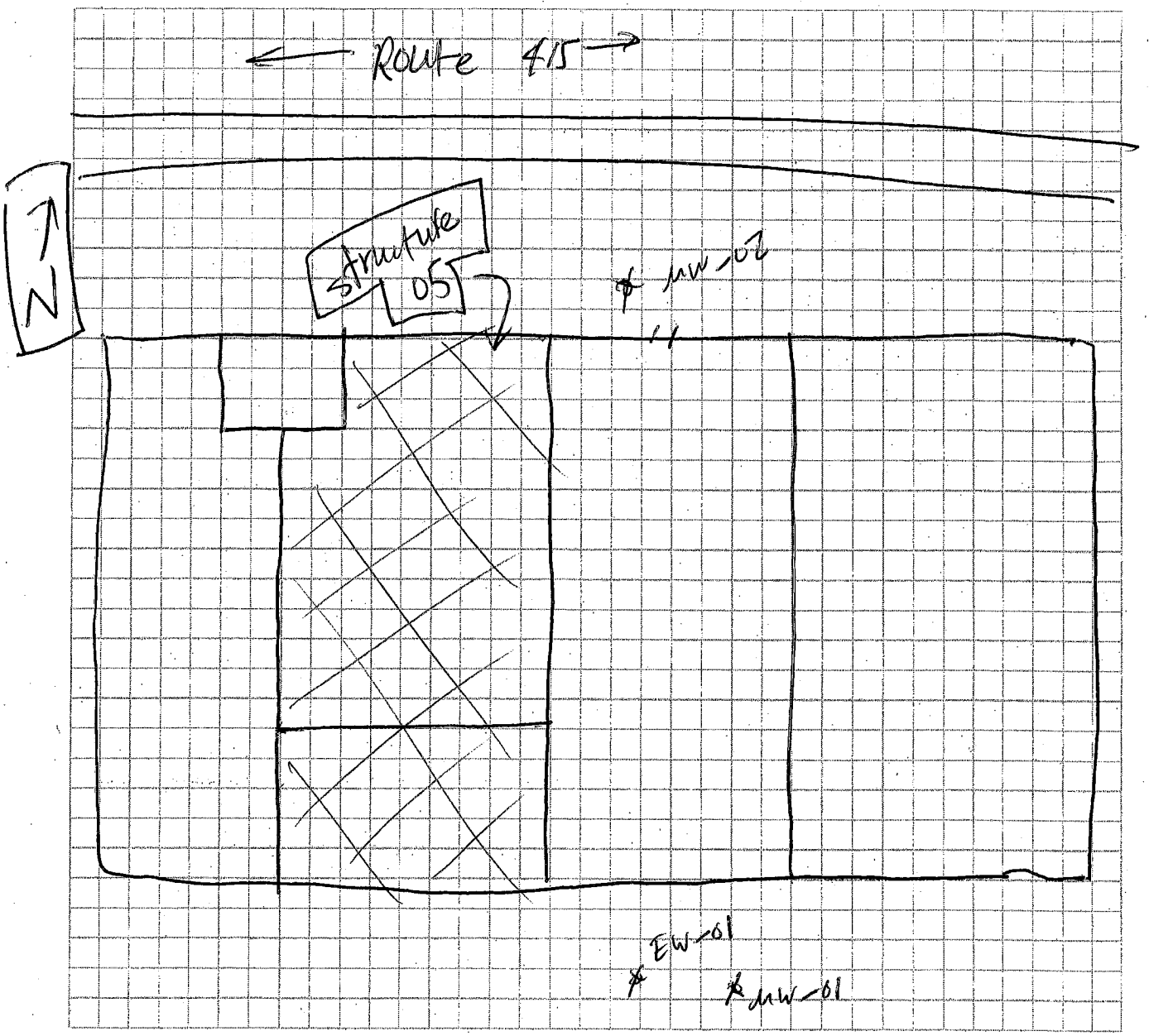


12. OUTDOOR PLOT

Structure 05

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



APPENDIX D

PHOTOGRAPHS

SVE PHOTOGRAPHS

SVE Floor Cut Opening

SVE Riser with Stone Fill

SVE PHOTOGRAPHS

SVE Riser with Grout Seal

Installed Manometer

SVE PHOTOGRAPHS

Radonaway GP501 Fan

Installed Fan Exterior

SVE PHOTOGRAPHS

Electrical Panel with SVE Breaker Marked

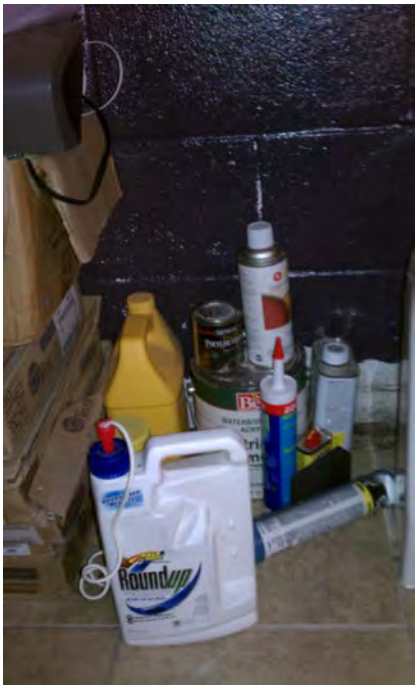
STRUCTURE 3 PHOTOGRAPHS (2/28/2012)

Indoor Air Sample Location at Structure 3.

Indoor Air Sample Location at Structure 3.

STRUCTURE 3 PHOTOGRAPHS (2/28/2012)

Chemical Inventory Near Sample Location at Structure 3

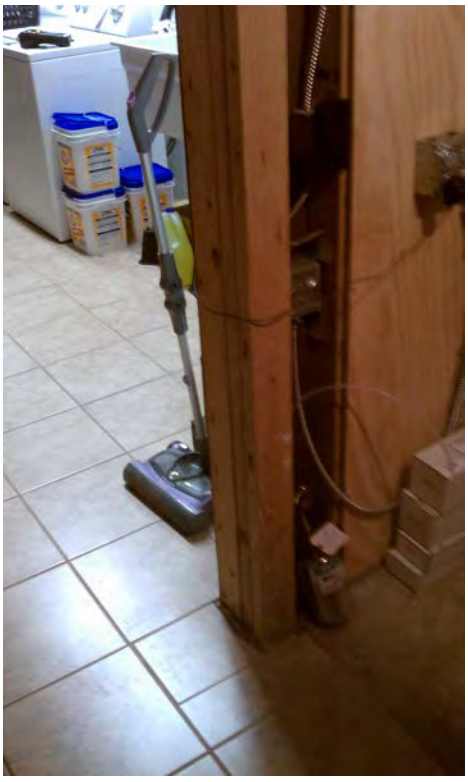


Sub-Slab Soil Vapor Sample Location at Structure 3

STRUCTURE 3 PHOTOGRAPHS (2/28/2012)

Sub-Slab Soil Vapor Sample Location at Structure 3

Sub-Slab Soil Vapor Sample Location at Structure 3



STRUCTURE 04 PHOTOGRAPHS (2/28/2012)

Indoor Air Sample Location at Structure 4

Indoor Air Sample Location at Structure 4

STRUCTURE 04 PHOTOGRAPHS (2/28/2012)

Sub-Slab Soil Vapor Sample Location at Structure 4

Sub-Slab Soil Vapor Sample Location at Structure 4

STRUCTURE 04 PHOTOGRAPHS (2/28/2012)

Sub-Slab Soil Vapor Sample Location at Structure 4

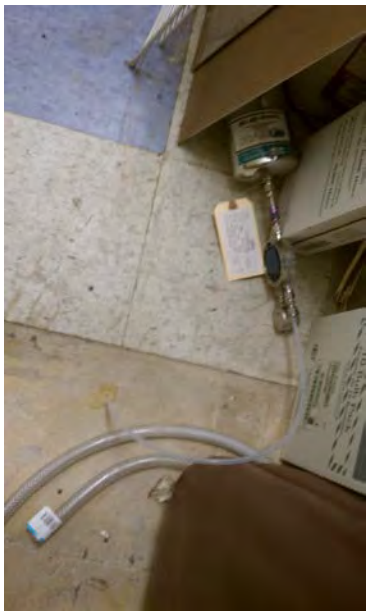
Area Near Sample Location at Structure 4

STRUCTURE 04 PHOTOGRAPHS (2/28/2012)

Chemical Inventory Near Sample Location at Structure 4

STRUCTURE 05 PHOTOGRAPHS (2/28/2012)

Sub-Slab Soil Vapor Sample Location at Structure 5.



Sub-Slab Soil Vapor Sample Location at Structure 5.

STRUCTURE 05 PHOTOGRAPHS (2/28/2012)

Indoor Air Sample Location at Structure 5.

Indoor Air Sample Location at Structure 5.

STRUCTURE 05 PHOTOGRAPHS (2/28/2012)

Indoor Air Sample Location at Structure 5.