

SCS ENGINEERS

June 21, 2018
File No. 25211232.50

Mr. Michael Schmoller
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Subject: Vapor Mitigation System Documentation and Maintenance Plan
Monona Classic Cleaners, 3918 Monona Drive, Madison, Wisconsin
BRRTS #02-13-368525

Dear Mr. Schmoller:

On behalf of Mr. Ralph Stinson, SCS Engineers (SCS) is providing the following report, which includes construction documentation and a maintenance plan for a vapor mitigation system (VMS) installed in the building located at 3916/3918 Monona Drive, Madison, WI (**Figure 1**).

BACKGROUND

The VMS was constructed by Acura Services, LLC (Acura) consistent with approved Drycleaner Environmental Response Fund (DERF) Change Order 6, dated August 4, 2017. It was designed to reduce the potential for vapor intrusion into the building by depressurizing the building sub-slab. The VMS was required because chlorinated volatile organic compounds (CVOCs) were detected in the sub-slab at concentrations in excess of Wisconsin Department of Natural Resources (WDNR) vapor risk screening levels.

CONSTRUCTION DOCUMENTATION

Acura's VMS construction documentation report is included in **Attachment A**. Photos of the VMS are included with the VMS maintenance plan (**Attachment B**).

The VMS was constructed with three vacuum pickup points. Two pickup points were installed in the basement under the southern side of the building (3918 Monona Drive). One pickup point was installed in the northern slab on the grade side of the building (3916 Monona Drive).

Each pickup point was constructed with either a 3-inch diameter or 2-inch diameter schedule 40 PVC pipe set in the sub-slab material. The PVC pipes were sealed into the floor to prevent leakage. The two pickup points in the southern side of the building were plumbed to a single 3-inch diameter PVC pipe that runs along the ceiling of the basement and extends through the east wall of the building. The pickup point in the northern side of the building was extended out the north end of the building with 3-inch diameter PVC pipe. The pipes were sealed into the building walls.



An AMG Eagle vacuum fan capable of producing up to approximately 4.0 inches of water column (WC) vacuum was connected to PVC pipes on the exterior of the building. The exhaust pipe for each fan was extended a few feet above the roof line.

Each fan was equipped with an on/off switch for servicing and a manometer was fitted to one pickup point on each side of the building to monitor fan operation.

Temporary vacuum observation points (VOP-1 through VOP-4) were installed through the building slab to evaluate the VMS pressure field extension. Initial VMS fan and sub-slab vacuum readings were measured on October 5, 2017, and measurements were made again on June 13, 2018, as summarized below. The measurements show consistent VMS fan vacuums and good pressure field extension under the slab.

Observation Point	Approximate Distance from Nearest Pickup Point (feet)	10/05/2017 Vacuum (Inches WC)	6/13/2018 Vacuum (Inches WC)
3916 Manometer	Not Applicable	3.5	3.6
3918 Manometer	Not Applicable	3.6	3.5
VOP-1	14	0.081	0.116
VOP-2	13	0.191	0.059
VOP-3	30	0.003	0.002
VOP-4	23	0.009	0.013

MAINTENANCE PLAN

A VMS maintenance plan is included in **Attachment B**. The maintenance plan summarizes the purpose, design, maintenance requirements, and limitations.

Please contact Robert Langdon at 608-216-7329 if you have any questions regarding this letter.

Sincerely,



Robert Langdon
Senior Project Manager
SCS ENGINEERS

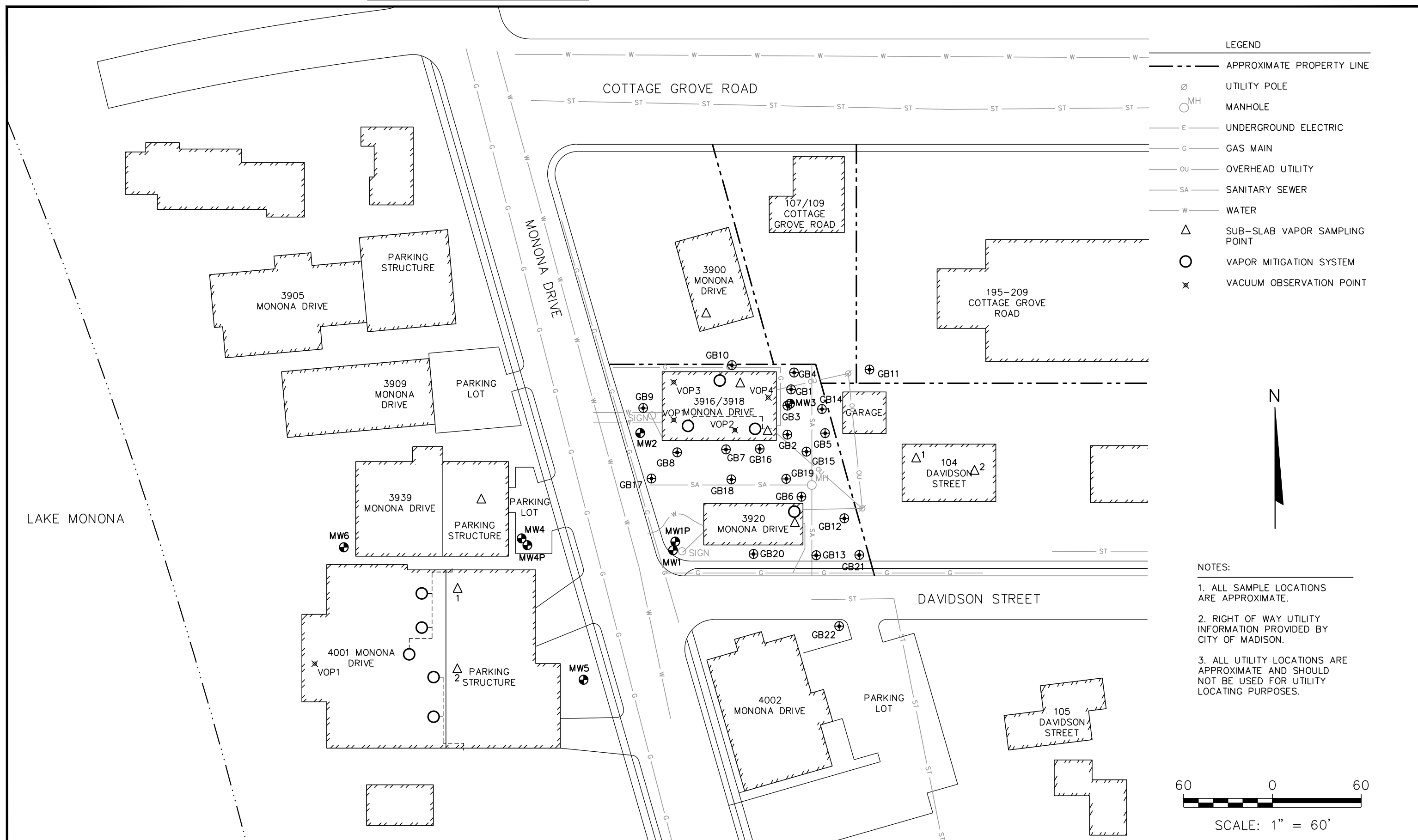


Mark R. Huber, PE
Project Director
SCS ENGINEERS

REL/jsn_lmh/MRH

cc: Ralph Stinson

Attachments: Figure 1 – Site Plan
Attachment A – October 12, 2017 Acura Post Mitigation Report
Attachment B – June 21, 2018 VMS Maintenance Plan

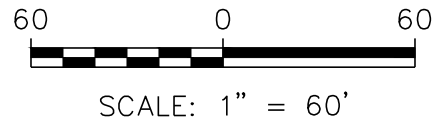


LEGEND

- APPROXIMATE PROPERTY LINE
- ⊙ MH UTILITY POLE
- MH MANHOLE
- E — UNDERGROUND ELECTRIC
- G — GAS MAIN
- OU — OVERHEAD UTILITY
- SA — SANITARY SEWER
- W — WATER
- △ SUB-SLAB VAPOR SAMPLING POINT
- VAPOR MITIGATION SYSTEM
- ⊗ VACUUM OBSERVATION POINT



- NOTES:
1. ALL SAMPLE LOCATIONS ARE APPROXIMATE.
 2. RIGHT OF WAY UTILITY INFORMATION PROVIDED BY CITY OF MADISON.
 3. ALL UTILITY LOCATIONS ARE APPROXIMATE AND SHOULD NOT BE USED FOR UTILITY LOCATING PURPOSES.



PROJECT NO.	25211232.50	DRAWN BY:	KP/BJM		CLIENT RALPH STINSON 4218 GREEN AVENUE MADISON, WI 53704	SITE 3918 MONONA DRIVE MADISON, WISCONSIN	FIGURE 1
DRAWN:	01/06/04	CHECKED BY:	REL				
REVISED:	06/14/18	APPROVED BY:	REL, 06/14/18				

ATTACHMENT A

October 12, 2017 Acura Post Mitigation Report



Soil Vapor & Radon Mitigation Services
Anthony G. Hendricks P.E.

October 12, 2017

Post Mitigation Report

Project: Java Cat Mitigation, 3918 Monona Dr., Monona, WI 53716

For: Mr. Ralph Stinson & Ms Linda Stinson
4218 Green Ave.
Madison, WI 53704

Project Summary

Acura Services LLC installed two mitigation systems in two buildings October 3, 4, & 5 2017. The area to be mitigated in the basement of the main building housing Java Cat is approximately 65 feet long by 25 feet wide. The second building which abuts the first building to the north, used as an art studio is reported to be a slab on grade 65 feet long by 20 feet wide.

Soil Gas Pickup Point(s) (See drawing & Pictures for visual reference.)

Main Building (Java Cat)

Communication testing was performed before starting excavation. The testing indicated good communication between the two proposed pickup points.

A main pickup point was excavated inside the utility room in the back of the building approximately 10 feet from the east side of the building. A hole was opened up through the concrete floor and excavated 36 inches from the top of the concrete. The sub slab material was dirty sand with a little gravel. A flat sump lid was caulked and sealed to the floor and a 3 inch hub installed on the lid to connect the pickup point and piping. A second pickup point was installed on the west end of the building near a room used as an office. A five inch hole was opened up and sub slab material excavated approximately 27 inches from the top of the slab. A hub with a two inch opening was installed in this pickup point. A two inch pipe was then run to connect to the three inch pipe installed on the main pickup point in the utility room.

Second Building (Art Studio)

A pickup point was located near the middle of the building on the north side. The concrete was broken out and excavation begun. At 21 inches below the slab asphalt was found indicating that this building was built over a parking lot without removal of the material. The hole was widened outward to try to improve the efficiency of extracting soil vapor. The material removed from the pickup point was fine builder's sand with large cobbles. Large cobbles limited the widening of the hole. (See picture of one removed cobble.) The hole was backfilled with pea gravel then a flat sump lid installed and sealed to the concrete. A 3 inch hub was installed on the lid to connect the pickup point and piping.



Soil Vapor & Radon Mitigation Services
Anthony G. Hendricks P.E.

Fan Description

The fans are specially designed & fabricated for use in mitigation systems. The fans installed are both AMG Eagle; 160 watts, 1.37 amps max., 3150 rpm, capable of pulling 3.985 inches of W.C.

Main Building (Java Cat)

After startup the manometer read 3.5 inches of water column. Based on the fan curve the fan is moving approximately 18 cfm.

Second Building (Art Studio)

After startup the manometer read 3.6 inches of water column. Based on the fan curve the fan is moving approximately 12 cfm.

Sealing Description

No sealing issues were observed.

Electrical

Electrical connection was made to the fan(s) with an on/off switch for servicing the fan.

Manometer(s)

A U-tube manometer to indicate operation was installed on the riser pipe on the pickup point. A label with startup information and contact information was installed beside the manometer.

Testing To Validate Performance

Main Building (Java Cat)

Vapor pins were installed by SCS. These were used to take depressurization readings.

- VOP-1 approx. 14 feet west of the 2nd pick up point read minus - 0.081. (Located in the office near the water meter.)
- VOP-2 approx. 13 feet west of the main pickup point read minus -0.191. (Located in between the two pickup points in front of the work bench.)



Soil Vapor & Radon Mitigation Services *Anthony G. Hendricks P.E.*

Second Building (Art Studio)

VOP-3 approximately 30 feet west of the pickup point read minus -0.003.

VOP-4 approximately 23 feet east of the pickup point read minus -0.009.

Warranty

The fan comes with a manufacture's warranty for five years from date of startup. The startup date was written on a sticker affixed to the riser pipe along with installer, installer's phone number and initial inches of W.C.

Conclusion

Main Building (Java Cat)

The final depressurization testing indicates that the sub slab mitigation system installed has successfully depressurized below the slab of this building.

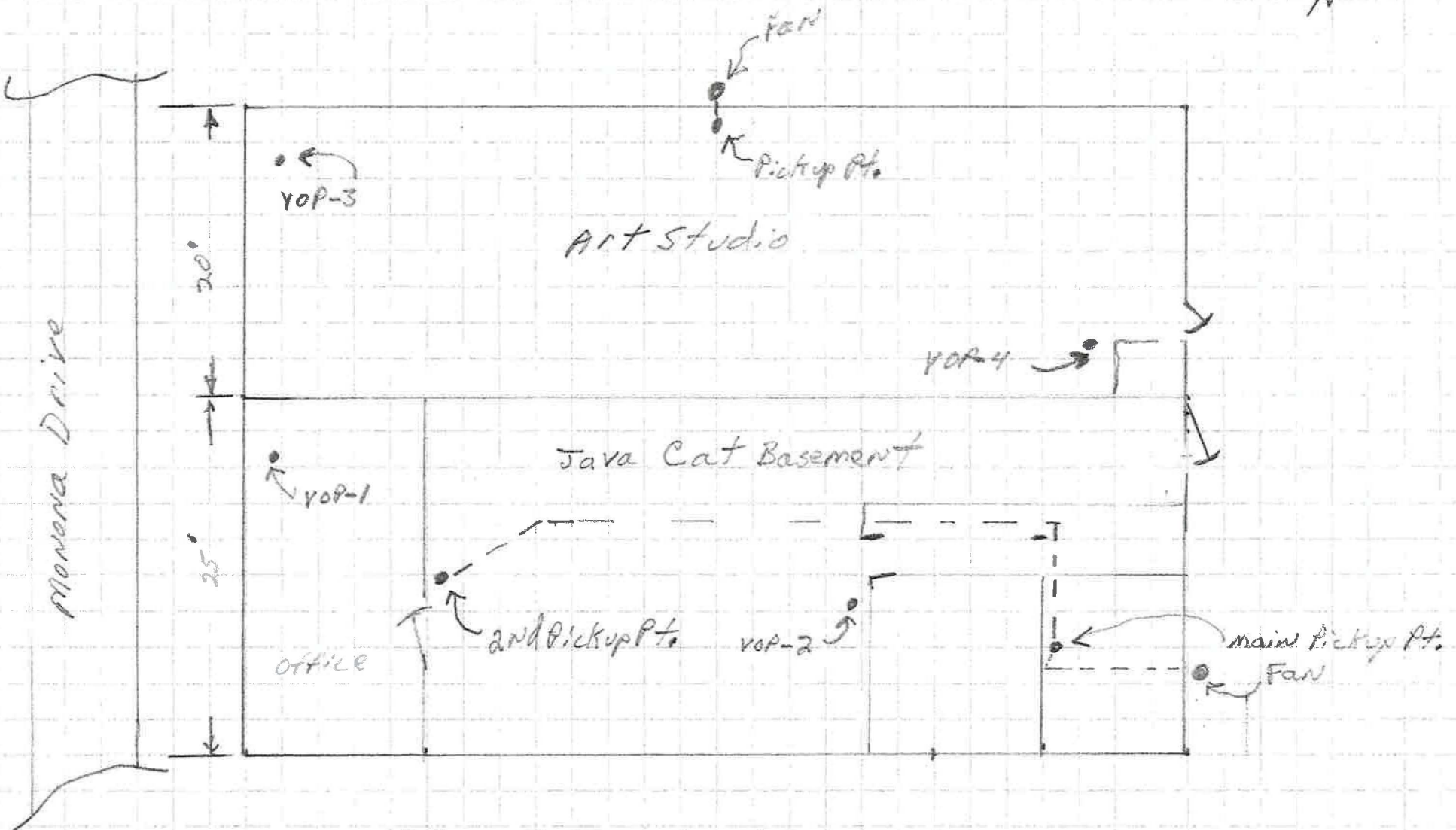
Second Building (Art Studio)

The final depressurization testing indicates that the sub slab mitigation system installed has probably depressurized most of the area below the slab in this building.

Report Prepared by;

Anthony G. Hendricks P.E / Owner

Cc; Rob Langdon, SCS Engineers



JAVA CAT Mitigation
Not to Scale

Drawn By Pro G. Ho.
Oct. 11, 2017

ATTACHMENT B

June 21, 2018 VMS Maintenance Plan

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN
3916/3918 Monona Drive, Madison, Wisconsin

June 21, 2018

Property Located at 3916/3918 Monona Drive, Madison, WI

WDNR BRRTS/Activity #02-13-368525

Legal Description, see **Attachment A**

Parcel ID #251/0710-093-0302-6

INTRODUCTION

This document is the Maintenance Plan for an active vapor mitigation system (VMS) at the above-referenced property consistent with the requirements of s. NR 724.13(2), Wis. Adm. Code. More site-specific information about this property may be found in:

- The case file in the WDNR South Central office
- BRRTS on the Web (WDNR's internet-based database of contaminated sites) for the link to a PDF for site-specific information at the time of closure and on continuing obligations
- RR Sites Map/GIS Registry layer for a map view of the site
- The WDNR project manager for Dane County

D.1 DESCRIPTIONS

System Description, Purpose, and Location

The VMS was constructed by Acura Services, LLC (Acura) consistent with approved Drycleaner Environmental Response Fund (DERF) Change Order 6, dated August 4, 2017. It was designed to reduce the potential for vapor intrusion into the building by depressurizing the building sub-slab. The VMS was required because chlorinated volatile organic compounds (CVOCs) were detected in the sub-slab at concentrations in excess of Wisconsin Department of Natural Resources (WDNR) vapor risk screening levels. The locations of various VMS components are shown on **Figure D.2**.

System Design and Construction Documentation

Photographs of the VMS are included in **Attachment B**. The VMS was constructed with three vacuum pickup points. Two pickup points were installed in the basement under the southern side of the building (3918 Monona Drive). One pickup point was installed in the northern slab on the grade side of the building (3916 Monona Drive).

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN (CONTINUED)

Each pickup point was constructed with either a 3-inch diameter or 2-inch diameter schedule 40 PVC pipe set in the sub-slab material. The PVC pipes were sealed into the floor to prevent leakage. The two pickup points in the southern side of the building were plumbed to a single 3-inch diameter PVC pipe that runs along the ceiling of the basement and extends through the east wall of the building. The pickup point in the northern side of the building was extended out the north end of the building with 3-inch diameter PVC pipe. The pipes were sealed into the building walls.

An AMG Eagle vacuum fan capable of producing up to approximately 4.0 inches of water column (WC) vacuum was connected to PVC pipes on the exterior of the building. The exhaust pipe for each fan was extended a few feet above the roof line. At startup both fans were pulling approximately 3.5 inches WC.

Each fan was equipped with an on/off switch for servicing and a manometer was fitted to one pickup point on each side of the building to monitor fan operation.

System Maintenance

Minimal operator control or maintenance of the VMS is required. There are no service requirements for the fans. The fan status is checked using the manometers. If a manometer displays greater than zero, the vacuum fan is functioning properly.

The floor in the vicinity of the VMS should be maintained as a barrier to prevent vapor intrusion. The structural integrity of the floor should be maintained, and any changes or repairs to the floor need to account for keeping the floor as impermeable as when the VMS was installed.

The potential for vapor intrusion of CVOCs should be reevaluated if there are changes to the floor, building HVAC system, or other changes that may influence the sub-slab vacuum distribution. If changes are made, pressure field extension testing of the sub-slab should be completed to make sure that adequate sub-slab vacuum is maintained.

Malfunctioning or damaged system components should be replaced as soon as possible, and any changes or repairs should be documented in the attached inspection and maintenance log (**Attachment C**).

Inspections

The VMS should be inspected at least once per year during the heating season as follows:

- Inspect manometers:
 - If manometer vacuum reads zero, check the fan on/off switch to make sure fan is on, and check the circuit breaker. Reset on/off switch and circuit breaker as needed. If resets do not restart the system, replace the fan.

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN (CONTINUED)

- If manometer shows low vacuum (e.g., less than 3.0 inches WC) check for vacuum leaks in pickup point piping and repair as necessary.
- If fan vacuum cannot be rectified contact SCS Engineers at (608) 224-2830 or Acura Services LLC at (608) 772-2349.
- Inspect fan exhaust lines to prevent clogging of fan exhaust, and remove any accumulated debris.
- Inspect floors and maintain as necessary to prevent vapor migration and vacuum loss.
- Record manometer readings and document repairs to the VMS, floors, or HVAC system on Form 4400-305, Continuing Obligations Inspection and Maintenance Log (**Attachment C**).
- Keep copies of the Inspection and Maintenance Log at the facility and available for submittal or inspection by WDNR representatives upon request.

Prohibition of Activities and Notification of WDNR Prior to Actions Affecting the VMS

The following activities are prohibited unless prior written approval has been obtained from the WDNR:

- 1) Shutdown or removal of the VMS
- 2) Replacement of the VMS
- 3) Construction or placement of a building or other structure
- 4) Changing the use or occupancy of the property to a residential exposure setting, which may include certain uses, such as single- or multiple-family residences, a school, daycare, senior center, hospital, or similar residential exposure settings
- 5) Changing the use or occupancy of the property to single-family residential use

If removal, replacement, or other changes are considered, the property owner will contact WDNR at least 45 days before taking such an action, to determine whether further action may be necessary to protect human health, safety, or welfare or the environment, in accordance with s. NR 727.07, Wis. Adm. Code.

Amendment or Withdrawal of Maintenance Plan

This Maintenance Plan can be amended or withdrawn by the property owner and its successors with the written approval of WDNR.

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN (CONTINUED)

Contact Information

Property Owner: Mr. Ralph Stinson
4218 Green Avenue
Madison, WI 53704
(608) 244-6172

Consultant: Mr. Robert Langdon, SCS Engineers
2830 Dairy Drive
Madison, WI 53718
(608) 224-2830

WDNR: Mr. Michael Schmoller
3911 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3303

D.2 LOCATION MAP

See **Figure D.2** for a map of features to maintain.

D.3 PHOTOGRAPHS

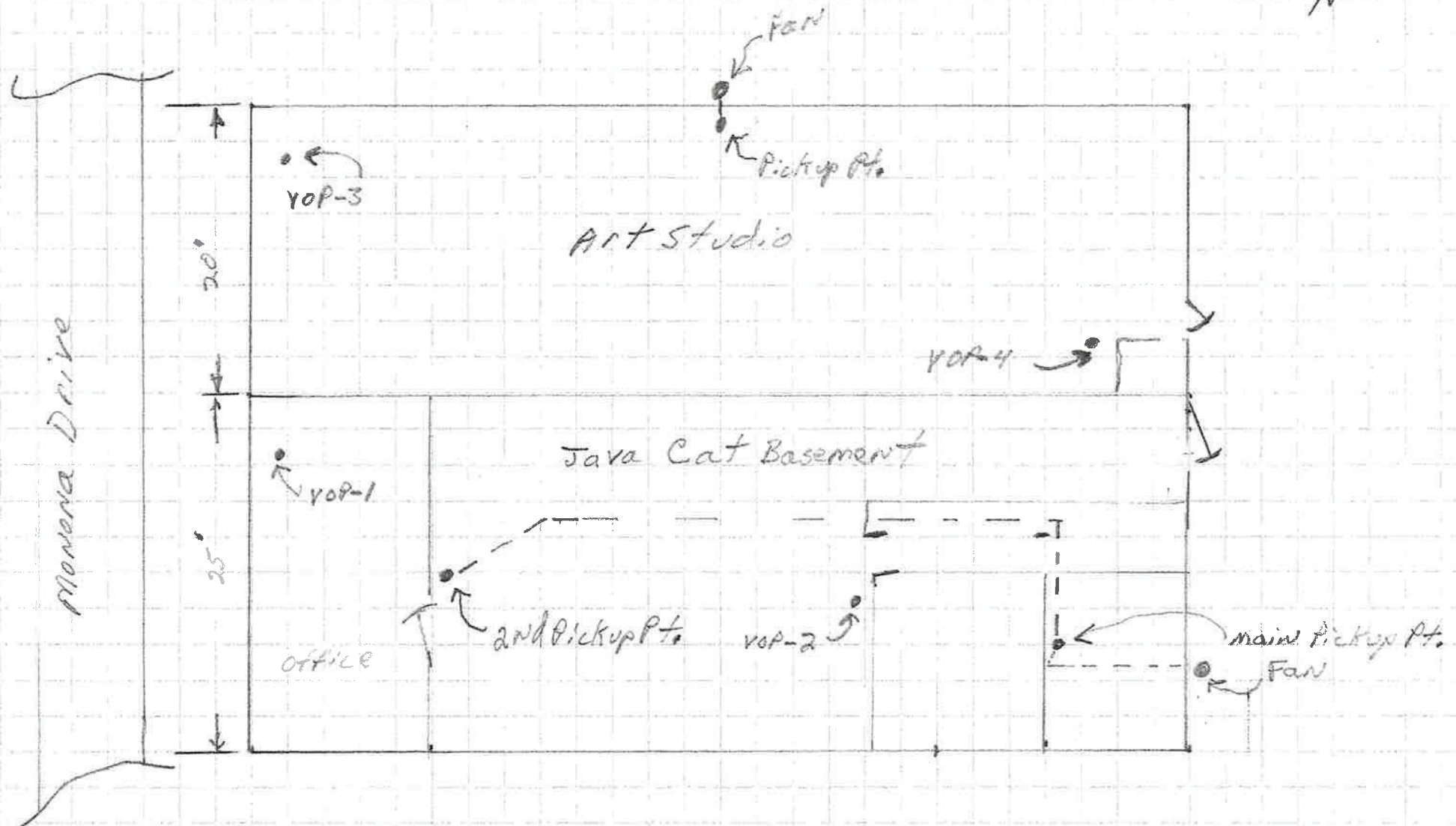
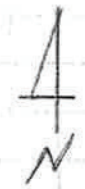
Photographs are included in **Attachment B**.

D.4 INSPECTION LOG

Inspection logs are included in **Attachment C**.

I:\2325\Reports\3916_3918 Monona Drive Vapor Mitigation System\Attachment B_Vapor Mitigation System Maintenance Plant\Vapor Mitigation System Maintenance Plan.docx

Figure D2. Location Map



JAVA CAT Mitigation
Not to Scale

Drawn By Pro G. Ho.
Oct. 11, 2017

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN

ATTACHMENT A

Legal Description

**ASSESSORS PLAT #7 BLOOMING GROVE PART LO T 30 - BEG AT INTERS E LN MONONA DR
& N LN DAVIDSON ST, TH N 135 FT, E 130 FT S 135 FT, W TO POB, EXC THAT PART
CONVEYED FOR HWY R/W IN DOC 4837132.**

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN

ATTACHMENT B

Photographs

Vapor Mitigation System
3916/3918 Monona Drive, Madison, WI
October 5, 2017
SCS Engineers Project #25211232.51



Photo 1: 3918 Monona Drive basement looking east at west vapor mitigation system (VMS) pickup point.



Photo 2: 3918 Monona Drive looking southwest at east VMS pickup point and 2-inch line from west pickup point.

Vapor Mitigation System
3916/3918 Monona Drive, Madison, WI
October 5, 2017
SCS Engineers Project #25211232.51



Photo 3: 3918 Monona Drive VMS monometer mounted to east pickup point.



Photo 4: 3918 Monona Drive looking south at VMS piping exiting south end of building.

Vapor Mitigation System
3916/3918 Monona Drive, Madison, WI
October 5, 2017
SCS Engineers Project #25211232.51



Photo 5: Looking west at east side of 3918 Monona Drive VMS fan and discharge piping.



Photo 6: Looking west at east side of 3918 Monona Drive VMS fan and discharge piping.

Vapor Mitigation System
3916/3918 Monona Drive, Madison, WI
October 5, 2017
SCS Engineers Project #25211232.51



Photo 7: Looking north at 3916 Monona Drive VMS pickup point.



Photo 8: Monometer on 3916 Monona Drive pickup point.

Vapor Mitigation System
3916/3918 Monona Drive, Madison, WI
October 5, 2017
SCS Engineers Project #25211232.51



Photo 9: Looking west at fan and exhaust along north wall of 3916 Monona Drive.

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN

ATTACHMENT C

Continuing Obligations Inspection and Maintenance Log

Directions: In accordance with s. NR 727.05 (1) (b) 3., Wis. Adm. Code, use of this form for documenting the inspections and maintenance of certain continuing obligations is required. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.]. When using this form, identify the condition that is being inspected. See the closure approval letter for this site for requirements regarding the submittal of this form to the Department of Natural Resources. A copy of this inspection log is required to be maintained either on the property, or at a location specified in the closure approval letter. Do NOT delete previous inspection results. This form was developed to provide a continuous history of site inspection results. The Department of Natural Resources project manager is identified in the closure letter. The project manager may also be identified from the database, BRRTS on the Web, at <http://dnr.wi.gov/botw/SetUpBasicSearchForm.do>, by searching for the site using the BRRTS ID number, and then looking in the "Who" section.

Activity (Site) Name Classic Cleaners	BRRTS No. 02-13-368525
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Inspections are required to be conducted (see closure approval letter):

annually
 semi-annually
 other – specify _____

When submittal of this form is required, submit the form electronically to the DNR project manager. An electronic version of this filled out form, or a scanned version may be sent to the following email address (see closure approval letter):

Inspection Date	Inspector Name	Item	Describe the condition of the item that is being inspected	Recommendations for repair or maintenance	Previous recommendations implemented?	Photographs taken and attached?
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input checked="" type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input checked="" type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input checked="" type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
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		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input checked="" type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
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