OPERATION, MAINTENANCE & MONITORING PLAN
SUB-SLAB DEPRESSURIZATION SYSTEM
MAGUIRE FAMILY PROPERTIES INC.
FORMER VALEO/FORMER GM-DELCO CHASSIS DIVISION FACILITY
NYS IHWD SITE #8-28-099
1555 LYELL AVENUE
ROCHESTER, NEW YORK

by

Haley & Aldrich of New York
Rochester, New York

for

Remediation and Liability Management Company, Inc
Warren, Michigan

File No. 70436-300
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1. INTRODUCTION

This Operation, Maintenance & Monitoring (OM&M) plan was prepared for a sub-slab depressurization system (SSDS) installed for soil vapor intrusion (SVI) mitigation at the Maguire Family Properties Inc./ Former Valeo/Former General Motors Corporation (GM) Delco Chassis Division Facility site (the site) located at 1555 Lyell Avenue in Rochester, New York.

1.1 Purpose

The SSDS addresses an area of the site where volatile organic compounds (VOCs) are present in soil vapor beneath the floor slab of the facility building. The system is intended to mitigate the potential for intrusion of soil vapor through the facility floor slab and into indoor air.

Installation of the SSDS was completed, and demonstration of sub-slab depressurization in the area affected by sub-slab VOC vapors was confirmed, in April 2009. Ongoing system operation, maintenance and monitoring and periodic certification of continuing system function and related administrative controls will be performed in accordance with this plan.

1.2 Background Information

GM manufactured automotive components at the facility from 1951 through 1994, and automotive manufacturing by subsequent owners continued at the facility until 2008. The facility is currently owned by Maguire Family Properties, and is used by multiple tenants for a variety of commercial and industrial purposes. The area addressed by the SSDS is currently not in use, but plans call for occupancy by one or more commercial or industrial operations in the future.

This OM&M Plan was prepared in accordance with the terms of a 30 July 2002 Order on Consent agreed to by GM and the New York State Department of Environmental Conservation (NYSDEC) for a Remedial Investigation and Feasibility Study (RI/FS) of the site. The former GM facility is listed as New York State Inactive Hazardous Waste Disposal Site #8-28-099.

During GM's remedial investigation, soil vapor contaminated with VOCs was identified beneath the building floor in the area surrounding building column Q-19. The VOCs present in soil vapor included trichloroethene (TCE), a chlorinated solvent, and dichloroethene (DCE) and vinyl chloride, two products of the breakdown of TCE in the environment.

The location of the affected area is shown on attached Figure 1. The affected area lies within the area bounded by building columns N-13 on the northeast, S-13 on the southeast, S-25 on the southwest, and N-25 on the northwest. The affected area is approximately 160 feet wide (north-south dimension) by 220 feet long (east-west dimension). The highest soil vapor concentrations occur between columns Q-16 and R-19 in the center of the affected area. The central area is approximately 60 feet wide and 60 feet long.

During soil vapor intrusion assessment activities, concentrations of the TCE, DCE, and vinyl chloride in soil vapor were found to be above 250 micrograms per cubic meter (ug/m3) in the affected area. The highest soil vapor concentrations were found in the 60- by 60-ft central area, where concentrations of up to 330 milligrams per cubic meter (mg/m3) of TCE and up to 5,000 mg/m3 of DCE were detected in sub-slab soil vapor.

Contaminant levels in soil samples from the central area were found to be below NYSDEC's soil cleanup objectives for protection of public health. Indoor air samples collected in the affected area did not contain DCE, TCE, or vinyl chloride. However, the concentrations of TCE, DCE, and vinyl chloride detected in

sub-slab soil vapor were above levels established by the New York Sate Department of Health (NYSDOH) as generic guidance for determining whether mitigation may be needed to protect against the potential for soil vapor intrusion. The NYSDOH guidance is specified in its "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006 ([1]).

The NYSDOH guidance has one set of generic criteria and does not differentiate between building occupancy or use conditions. The current guidance therefore applies criteria appropriate for single family homes to the entire range of occupancy settings. Since typical residential basement or floor slab conditions have a greater potential for communication between the sub-slab and indoor atmospheres than the conditions at the Former GM site (with its industrial floor slab), and since residential exposure models involve full-time occupancy by residents rather than the 8-hour shift and 5-day work week typical for occupants in a commercial setting, application of the NYSDOH guidance criteria for evaluation of the sub-slab VOC concentrations at the former GM site is likely to be conservatively overprotective. As indicated above, indoor air samples collected in the affected area did not contain DCE, TCE, or vinyl chloride.

Nevertheless, GM installed an SSDS to mitigate the potential for SVI in the affected area. The system was designed and installed in general accordance with the NYSDOH guidance, and was installed in accordance with the NYSDEC-approved Interim Remedial Measure (IRM) Work Plan dated 7 August 2007.

[1] A list of references is presented at the end of the OM&M plan.

2. SUB-SLAB DEPRESSURIZATION SYSTEM

2.1 System Description

The SSD system was installed and tested from 19 March to 21 April 2009 and has been operating continuously since 9 April 2009. The SSD system uses three continuously operating vacuum fans connected by a network of pipes to nine suction points in the floor in the affected area. Operation of the system creates a negative pressure zone beneath the concrete floor slab of the affected area. The negative pressure zone, where the sub-slab vapor pressure is lower than the air pressure in the building above the floor slab, mitigates the potential risks of soil vapor intrusion by preventing the vapors that collect beneath the building from infiltrating into the building. Vapors that are pulled from the subsurface by the vacuum fans are transferred through the piping network and vented to the atmosphere above the roof of the building.

Vacuum monitoring gauges and an electronic alarm system are present on the piping network to allow for monitoring of the operation of the system and to alert site management personnel if the system operation is interrupted. Vacuum monitoring and vapor sampling points are installed in the floor of the affected area and in the surrounding building interior space to allow for periodic testing and confirmation of sub-slab depressurization in the affected area and for confirmation that soil vapor conditions in the surrounding area do not present a potential risk of soil vapor intrusion.

The layout of the SSDS is shown on Figure 1. The SSDS components are described below.

2.1.1 Suction Pits

There are nine suction pits located adjacent to the nine building columns within the interior of the affected area (columns P-, Q- and R-16, P-, Q- and R-19, and P-, Q- and R-22). Each suction pit was constructed with a 3.5 inch hole cored through the concrete slab adjacent to the column and a suction cavity excavated below the slab from which approximately 1 cubic foot of sub-slab base material (stone or sand and gravel) was removed.

2.1.2 Pipe Installation

The piping network for the SSDS is constructed of 3-inch diameter PVC pipes. Pipe ends were installed to approximately 1 inch below the bottom of the floor slab, and the suction cavity opening was sealed around the pipe with newly poured concrete. The piping from each suction point is routed up along the column into the truss space. As shown on Figure 1, the piping from the three suction pits located along each north-south column line connect to a single 3-inch pipe leading to an SSDS fan located on the roof of the building. The horizontal piping runs in the truss space are sloped down back towards the suction pits to minimize any water buildup from condensation.

2.1.3 Miscellaneous Sealing

Installation of SSD systems typically involves sealing of cracks and penetrations in a building floor slab to prevent leaks between the sub-slab atmosphere and indoor air. However, smoke testing of cracks, floor joints and other floor penetrations performed during the SSDS installation indicated that sealing was not required in the affected area. The condition of the concrete floor slab in the affected area has been shown to be sound at each of the sampling locations installed

during the various phases of RI investigative and SSDS construction and testing activities, and the thickness of concrete has been found to range from 8 to 18 inches.

2.1.4 Fans and Stacks

The three SSDS fans (F1, F2 and F3, as shown on Figure 1) are mounted on the roof of the building. The fans are RadonAway Model GP501, rated for 4.2 inches water column (in.w.c) maximum pressure and 95 cubic feet per minute (CFM) maximum flow. The fans are low wattage and suitable for continuous operation. Pictures of the system fans are presented in Appendix A. The fan manufacturer's data sheet for the fan model used in the SSDS is presented in Appendix B.

2.1.5 Visual Vacuum Indicator

Each fan system (the three suction points and piping leading to each fan) has one visual vacuum (negative pressure) indicator on the vertical pipe leading from the center suction point (the Q-column suction point). The visual indicator is a flex-tube manometer that depicts the actual operating vacuum in the piping leading to each fan. A picture of a manometer is presented in Appendix A. Periodic reading and recording of the vacuum pressure at each manometer is the monitoring activity that will be performed to document continuous operation of the fans and confirm the effectiveness of the SSDS. The schedule and scope of monitoring to be performed is specified in Section 4 of this plan.

2.1.6 Electrical

120-volt electrical service for the SSDS fans comes from the facility electrical bus duct located in the ceiling truss space along the #16 column line. The main switch for the SSD system is located approximately 10 feet west of column Q-16. This main switch is labeled accordingly. Electrical service runs to each fan, and each fan system has an individual switch located at the fan (outside on the roof) that can be turned off for servicing of the fan. The SSDS electrical service lines are installed on a dedicated circuit separate from the rest of the building electrical requirements. In the event of a power outage, the fans will automatically restart once power has been restored.

2.1.7 Warning Devices

There are three low pressure sensors installed on the riser stack from the Q-column suction point for each fan system. A picture of one of the sensors is presented in Appendix A. These devices will send an alarm to the main building security system in the event that pressure drops below 0.25 inches of water column (in.w.c.) of negative pressure (vacuum). When the sensors are triggered by a drop in vacuum, an automatic dial-out device will continuously call out to four on-call site management personnel of the owner's site management and security departments until the call is answered. Site management personnel will then notify the contacts listed in Section 4.4 within one business day.

2.1.8 Permanent Monitoring Points

There are eight permanent monitoring points installed to permit periodic monitoring of sub-slab vacuum pressure and occasional sampling of soil vapor. The permanent monitoring points are labeled PT-1 through PT-8 on the attached Figure 1. These monitoring points consist of a hole drilled through the slab and a short length of tubing sealed in the hole. The points are completed with a removable cap.

Four of the points are installed within the affected area. Annual monitoring of vacuum levels at these four points will be used to confirm the continued effectiveness of the SSDS operation. The remaining four permanent points are installed at locations that were outside the zone of vacuum influence apparent in late April 2009 during initial post-installation testing of the SSDS operation. The four points located outside the zone of vacuum influence will be used for initial and subsequent occasional vacuum monitoring and sub-slab vapor sampling to confirm that the area affected by the potential for SVI does not extend beyond the limits of the SSDS zone of influence.

The schedule and scope of monitoring to be performed is specified in Section 4 of this plan.

3. START UP AND INITIAL TESTING

The installation of the SSDS was performed using a performance-based design standard. The initial construction/design phase of the installation involved construction of suction pits at the nine columns located in the interior of the affected area. A vacuum blower and a Radonaway Model GP501 fan were used to test the initial suction pits. Numerous temporary test points were installed in the floor and sub-slab vacuum levels were measured to confirm that the spacing of the suction pits on the building column grid was sufficient to achieve the vacuum coverage required to address the entire affected area. In addition, vacuum and flow were measured to determine that the GP501 was the appropriate fan.

When the initial phase results indicated that the conceptual design and the GP501 fan were appropriate, installation of the nine suction pits and a three-fan system was completed. Additional temporary test points were installed to determine the vacuum coverage of the complete system. Refer to Figure 1 for test point locations and the initial post-installation vacuum readings.

Eight of the temporary test points were converted to permanent points PT-1 through PT-8 for use in future sampling and vacuum monitoring activities.

4. OPERATION, MAINTENANCE, & MONITORING

The goal of the OM&M is to ensure that the SSDS fans are operating continuously and providing effective vacuum coverage to minimize the potential for vapor intrusion. Minimum requirements for OM&M activities are provided in the following subsections.

4.1 Periodic Monitoring

Routine monitoring shall occur periodically (at a maximum interval of monthly) to confirm system operation and performance. The building security personnel will conduct this periodic monitoring. This routine monitoring shall include the following activities (at a minimum):

1. A visual inspection of the system piping;
2. Recording of vacuum readings at each fan system manometer;
3. Notation of any observation concerning the SSDS that is out of the ordinary.

The vacuum readings shall be recorded on the periodic monitoring forms presented in Appendix C. The monitoring sheets shall be maintained on site by the facility security or management staff. Copies will be provided to the SSD Engineer (contact information listed in Section 4.4 below) for review and inclusion in the annual monitoring report (described in Section 4.2).

If results of a periodic monitoring event indicate the system is damaged or is not operational, or if observations of out of the ordinary conditions indicate that maintenance may be needed, the SSD Engineer must be notified within one business day so that the situation can be investigated and a remedy can be initiated if needed. A temporary fix may be considered to keep the system operating until a more permanent repair or remedy is installed.

4.2 Annual Monitoring

Annual monitoring shall occur every year to ensure system performance. This annual monitoring shall include the following activities (at a minimum):

1. A visual inspection of the complete system (i.e. fan, piping, labeling system, seals, etc.).
2. Recording of vacuum readings at each fan system manometer.
3. Recording of vacuum readings from permanent vacuum monitoring points installed in the floor slabs.
4. Identification of potential leaks.
5. Inspection of exhaust points to verify that air intakes have not been located nearby.
6. Audible inspection to verify a fan's operational performance.
7. Test of warning alarm non-acknowledgement and automatic system dial out.
8. Review of all contact information listed in section 4.4.
9. Recording of any system maintenance activities that have occurred during the past year.
10. Review of renovations or changes of use in the affected area and/or surrounding area of the building that may affect the effectiveness of the SSD system.

Vacuum monitoring to confirm that a lower pressure is being maintained in the sub-slab shall be performed by measuring the differential pressure between the indoor air and sub-slab at the permanent monitoring points. The operational target is a minimum differential pressure of 0.004 inches between the interior space and the sub-slab depressurized space on all accessible permanent monitoring points in the affected area. Monitoring will be conducted by a competent environmental professional and recorded on

the standard monitoring forms included in Appendix C. In the event that the target minimum differential pressure is not achieved, non-routine maintenance may be required as described in Section 4.3 below.

Letter reports documenting the results of the annual monitoring will be prepared for submittal to NYSDEC and the site owner (currently Maguire Family Properties). The report will be prepared by June 1st of each year or within 2 months of the anniversary of system start-up, should a system shutdown and restart be necessary in the future.

4.3 Maintenance

The need for preventative maintenance will depend upon the life expectancy and warranty for the specific part (fan life is generally between three and five years), as well as visual observations over time. The need for repairs and/or adjustments will depend upon the observation of system operation compared to observation obtained when system operations were initiated.

Non-routine maintenance may be required during the long-term operation of the SSD system. Examples of situations requiring maintenance include the following:

1. The need to replace a fan;
2. The building's owners or occupants report that the periodic visual vacuum device monitoring indicates the SSD system is not operating properly;
3. The SSD system becomes damaged; or
4. The affected area and/or surrounding area of the building have undergone renovations or changes of use that may reduce the effectiveness of the SSD system.

Activities conducted during non-routine maintenance will vary depending upon which of these situations was the reason for the maintenance. In general, non-routine maintenance activities may include examining the building for structural or HVAC system changes, or other changes that may affect the performance of the SSD system (e.g. new combustion appliances or deterioration of the concrete slab). The non-routine maintenance may also include examining the operation of the visual vacuum device and the vent fan, or the extent of sub-slab depressurization. Repairs or adjustments should be made to the system as appropriate. If necessary, the system should be redesigned and restarted. Refer to Section 4.4 below for appropriate contact information for non-routine maintenance.

4.4 Contact Information

In the occurrence of changes that would require routine or non-routine maintenance as described above, the owner or tenants of the facility should contact the following individuals:

SSD Engineer: Mark Ramsdell
Haley & Aldrich of New York
200 Town Centre Drive, Suite 2
Rochester, NY 14623
Phone: 585.359.9000

Consultant: Tom Wells
Stantec Consulting Services Inc.
2250 Brighton-Henrietta Town Line Road
Rochester, NY 14623-2706
Phone: 585.413.5625

SVI System Owner's Representative: Marilyn Dedyne
Remediation and Liability Management Company Inc.
30200 Mound Road, MC 480-111-W60
Warren, MI 48090
Phone: 313.506.9461

Contact information for the SSDS design and construction contracting firm that performed the installation of the SSDS is presented below. The SSDS contractor may be a source for replacement parts or repair services, if needed. However, in general, the SSDS contractor should be contacted indirectly through one of the contacts listed on the previous page.

SSDS Installation Contractor:
Mitigation Tech
55 Shumway Road
Brockport, NY 14420
Phone: 585.637.7430

5. SYSTEM SHUTDOWN

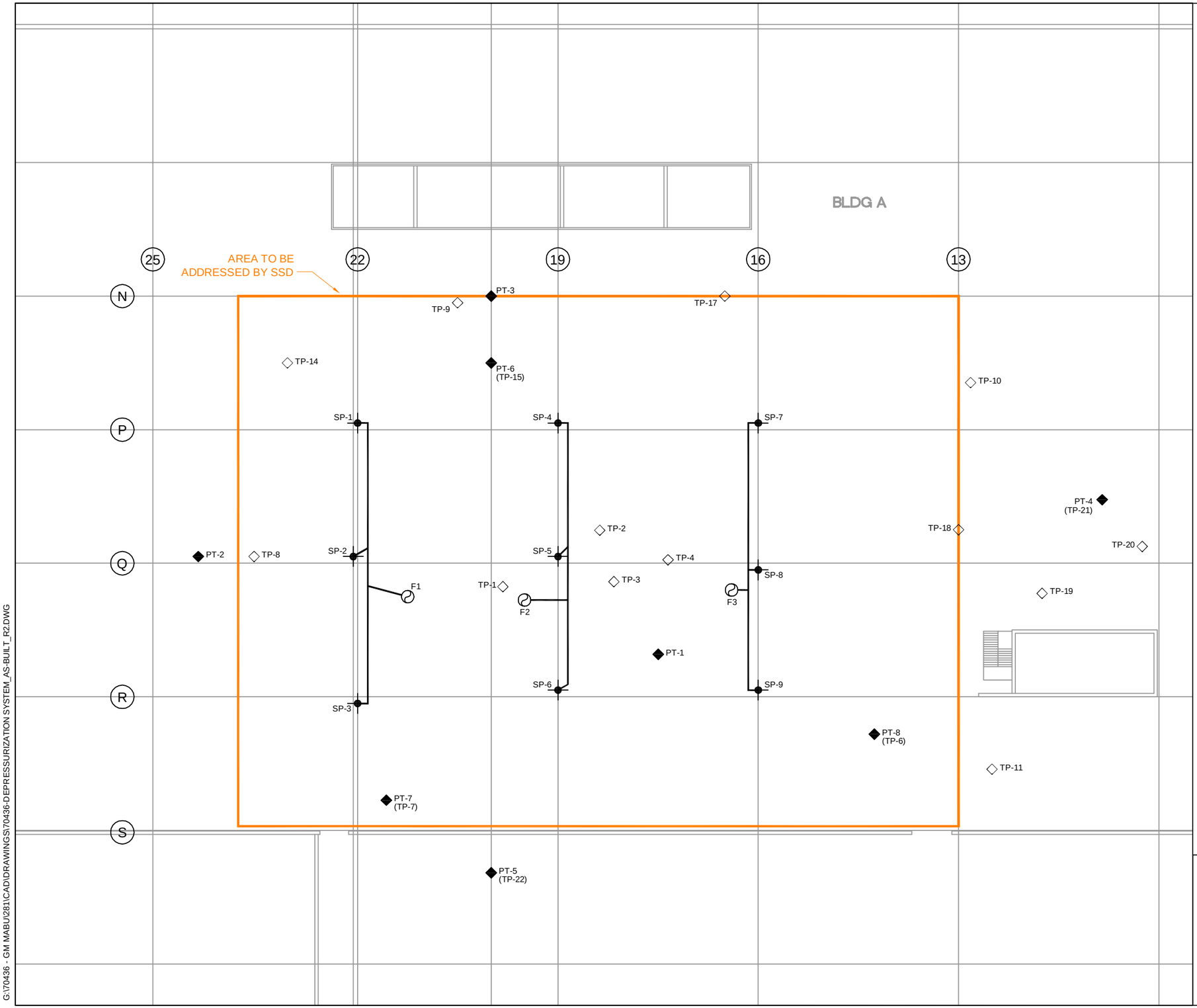
The SSDS will remain in operation for at least five years unless prior approval has been obtained from NYSDEC to discontinue its operation and dismantle and close the system sooner than five years.

To determine whether a request for NYSDEC approval to terminate operation of the SSDS is in order, supplemental sub-slab vapor sampling in the affected area may occasionally be performed. The sampling may occur as part of an annual monitoring event. Sampling will be performed by no later than the fifth year of operation. The purpose of the supplemental sampling would be to determine whether VOC concentrations in sub-slab vapor have declined to levels below applicable NYSDOH SVI mitigation guidance criteria. The supplemental sampling would involve a short-term shutdown of the SSDS of approximately one week duration, and the sampling would be performed in accordance with procedures specified in then-current, applicable NYSDOH SVI Assessment Guidance.

Supplemental sampling activities and results would be reported in the annual SSDS monitoring report. Should results of the sampling indicate that VOC concentrations in sub-slab vapor are below applicable guidance criteria, a work plan detailing a proposed program of additional pre-closure monitoring will be prepared and submitted to NYSDEC. Once implemented, results of the pre-closure monitoring would be presented in a report to NYSDEC, and if results indicate that closure of the SSDS is appropriate, the report would include details of a program of closure and, if necessary, post-closure activities.

REFERENCES

1. Remedial Investigation, Valeo/Former GM Delco Chassis Division Facility, Rochester, New York. Haley & Aldrich of New York, April 15, 2005.
2. RI/FS Progress Report #14, Valeo Former GM – Delco Chassis Facility Site, Rochester, New York. Haley & Aldrich of New York, May 10, 2006.
3. RI/FS Progress Report #15, Valeo Former GM – Delco Chassis Facility Site, Rochester, New York. Haley & Aldrich of New York, August 8, 2006.
4. Addendum to Human Health Risk Assessment, Former GM Delco Chassis Facility, 1555 Lyell Avenue, Rochester, New York. ENVIRON International Corporation, November 2006.
5. IRM Work Plan, Valeo/Former GM Delco Chassis Facility, 1555 Lyell Avenue, Rochester, New York. Haley & Aldrich of New York, August 7, 2007.
6. Letter of approval Re: Sub-Slab Depressurization IRM Work Plan, Valeo Site (#828099), Rochester(C), Monroe(C), NYSDEC Division of Environmental Remediation, Region 8, May 7, 2009



LEGEND:

- DEPRESSURIZATION SYSTEM PIPING
- SUCTION POINT
- TEMPORARY TEST POINT LOCATION
- PERMANENT TEST POINT LOCATION
- FAN LOCATION

Test Point	Initial Vacuum
TP-1	-0.015
TP-2	-0.046
TP-3	-0.075
TP-4	-0.102
TP-5	-0.039
TP-8	-0.011
TP-9	(+)0.001
TP-10	(+)0.002
TP-11	-0.028
TP-14	-0.004
TP-17	-0.019
TP-18	-0.019
TP-19	-0.01
TP-20	(+)0.017
PT-1 (TP-12)	-0.029
PT-2 (TP-13)	-0.001
PT-3 (TP-16)	-0.004
PT-4 (TP-21)	(+)0.003
PT-5 (TP-22)	(+)0.001
PT-6 (TP-15)	-0.022
PT-7 (TP-7)	-0.018
PT-8 (TP-6)	-0.035
Note: ND -non-detect	

DRAFT

N
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SCALE IN FEET

HALEY & ALDRICH

VALEO/FORMER GM DELCO CHASSIS DIVISION FACILITY
GENERAL MOTORS CORPORATION
ROCHESTER, NEW YORK

AS-BUILT SUB-SLAB DEPRESSURIZATION SYSTEM PLAN

SCALE: AS SHOWN
APRIL 2009

FIGURE 1

G:\70436 - GM MABU\2811\CAD\DRAWINGS\70436-DEPRESSURIZATION SYSTEM_AS-BUILT_R2.DWG

APPENDIX A

SSDS Photographs

Suction pipe at column Q-19

SSDS suction pipe at floor

Manometer on suction pipe at column Q-19

Alarm system sensor relay on suction pipe at column Q-19

SSDS Fan F2

SSDS fan showing electrical switch

Permanent Monitoring Point

APPENDIX B

Manufacturer's Cut Sheets
SSD Fan
Visual Vacuum Indicator
Pressure Sensor

RadonAway™
The World's Leading Radon Fan Manufacturer

GP Series

Radon Mitigation Fans

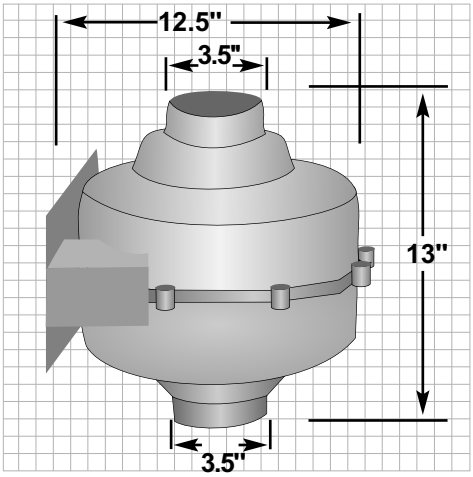
All RadonAway fans are specifically designed for radon mitigation. GP Series Fans provide a wide range of performance that makes them ideal for most sub-slab radon mitigation systems.

Features:

- Five-year hassle-free warranty
- Mounts on duct pipe or with integral flange
- 3.5" diameter ducts for use with 3" or 4" pipe
- Electrical box for hard wire or plug in
- ETL Listed - for indoor or outdoor use
- Meets all electrical code requirements
- Thermally protected
- Rated for commercial and residential use.

Model	Watts	Max. Pressure "WC	Typical CFM vs. Static Pressure WC						
			1.0"	1.5"	2.0"	2.5"	3.0"	3.5"	4.0"
GP201	40-60	2.0	82	58	5	-	-	-	-
GP301	55-90	2.6	92	77	45	10	-	-	-
GP401	60-110	3.4	93	82	60	40	15	-	-
GP501	70-140	4.2	95	87	80	70	57	30	10

Choice of model is dependent on building characteristics including sub-slab materials and should be made by a radon professional.



For Further Information Contact:

03/08
P/N 02002

Flex-Tube® Manometer

Installation & Operating Instructions

1220/1230 Series
U-Tube and Well-Type Manometers

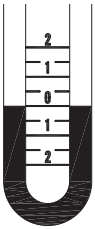


Fig. 1

With both ends of the tube open, the liquid is at the same height in each leg.

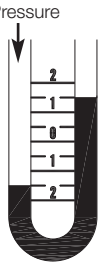


Fig. 2

The difference in height, "h", which is the sum of the readings above and below zero, indicates pressure.

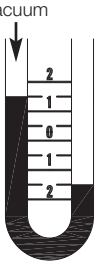


Fig. 3

The difference in height, "h", which is the sum of the readings above and below zero, indicates the amount of vacuum.

Measuring Pressure, Vacuum and Differential Pressure with Dwyer Manometers

Dwyer manometers are available in two different styles. The W/M models use either water for readings in inches of water or mercury for readings in inches of mercury. The D models use Dwyer .826 specific gravity red gage oil for readings in inches of water. The scales on the two styles have different lengths, so it is important to use the correct fluid.

Mounting Dwyer U-Tube Manometers

1221 - Mount to a vertical surface through holes in the scale.

1222 - Attach magnets to steel surface or remove magnets and mount through holes in scale.

1223 - Attach magnets to steel surface or through the hole in safety trap housing.

1227 - Because of angled connections, 1227 must be filled with indicating tube at an angle. After filling, check zero in vertical position. Clean all oil from the exterior of the unit to prevent cracking of the backplate.

Note: Read vertical range on the right leg with the manometer vertical. Incline the manometer to zero for low range reading.

Mounting Dwyer Well Manometers

1230 - Mount to a vertical surface with flat-head screws through the holes in the scale.

1235 - Mount behind panel cutout to show only the tube and scale. Attach by drilling holes through the manometer's back-plate and panels. Make the panel cutout for the length and width of the tube and scale.

DWYER INSTRUMENTS, INC.
P.O. BOX 373 • MICHIGAN CITY, IN 46361, U.S.A.
Phone: 219/879-8000 www.dwyer-inst.com
Fax: 219/872-9057
e-mail: info@dwyer-inst.com

Filling U-Tube Manometers 1221 - 1222

Open both fittings to atmosphere. Slide scale to mid-point of travel. Add liquid to zero on scale. Clean all oil from the exterior of the unit to prevent cracking of the backplate.

Filling 1223 - 1230 and 1235 Manometers

Remove large fitting from well using a 3/4″ open-end wrench. Also remove cork, disc, and O-ring. Be sure the other side is vented to atmosphere. Adjust zero to middle of travel. Add fluid to well up to the zero on scale. Replace cork, disc, and O-ring before replacing fitting. Clean all oil from the exterior of the unit to prevent cracking of the backplate on 1223 models. To order red gage oil, order part # A-101 (3/4 oz.) To order fluorescein green color concentrate, order part # A-126 (3/4 oz.)

Operation of 1221, 1222 and 1223 Manometers

Connect either side to pressure or vacuum, leaving the other side open to atmosphere. Add together the readings above and below zero.

It is normal for the two sides to have different readings and has no effect on accuracy. For differential pressure, connect both the high and low fittings. Add the readings above and below zero on the scale.

Operation of 1230 and1235 Manometers

Positive Pressure: Connect the well reservoir fitting to the pressure source, leaving the other side open to atmosphere.

Negative Pressure: Connect the top fitting to vacuum source, leaving well side open to atmosphere.

Differential Pressure: Connect higher pressure to well reservoir fitting and lower pressure to upper fitting.

Note: When finished, close fitting to prevent spilling or evaporation.

Maintenance

With proper care, Dwyer Flex-Tube® Manometers will continue to give accurate readings. If cleaning is needed, remove fittings, drain fluid, and rinse with mild soap and water. A cleaning brush (part #A-366) may be used to remove oxidation.

Avoid harsh soaps and solvents which may damage manometer and void warranty.

When replacing O-rings, apply a thin coat of petroleum jelly to assure a good seal. Do not coat O-ring used in the overpressure safety trap.

Avoid using fluids other than those specified. Corrosive fluids may damage the manometer.

If return is needed contact customer service to receive a return goods authorization number before shipping.

 Printed in U.S.A. 9/05 FR# 44-440475-00 Rev. 5

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e-mail: info@dwyer-inst.com

INSTALLATION & OPERATING INSTRUCTIONS
Instruction P/N IN015 Rev E
FOR *CHECKPOINT IIa*™ P/N 28001-2 & 28001-3
RADON SYSTEM ALARM

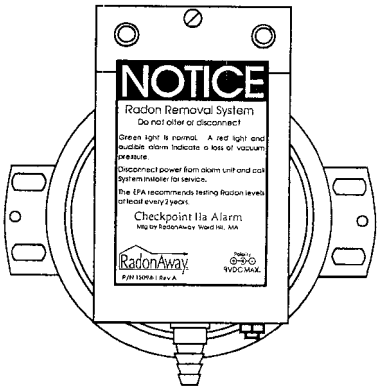
INSTALLATION INSTRUCTIONS
(WALL MOUNTING)

Select a suitable wall location near a vertical section of the suction pipe. The unit should be mounted about four or five feet above the floor and as close to the suction pipe as possible. Keep in mind that with the plug-in transformer provided, the unit must also be within six feet of a 120V receptacle. **NOTE: The Checkpoint IIa is calibrated for vertical mounting, horizontal mounting will affect switchpoint calibration.**

Drill two ¼" holes 4" apart horizontally where the unit is to be mounted.

Install the two ¼" wall anchors provided.

Hang the CHECKPOINT IIa from the two mouting holes located on the mounting bracket. Tighten the mounting screws so the unit fits snugly and securely against the wall.



Drill a 5/16" hole into the side of the vent pipe about 6" higher than the top of the unit.

Insert the vinyl tubing provided about 1" inside the suction pipe.

Cut a suitable length of vinyl tubing and attach it to the pressure switch connector on the CHECKPOINT IIa.

CALIBRATION AND OPERATION.

The CHECKPOINT IIa units are calibrated and sealed at the factory to alarm when the vacuum pressure falls below the factory setting and should not normally require field calibration. Factory Settings are:
28001-2 -.25" WC Vacuum
28001-3 -.10" WC Vacuum

To Verify Operation:

With the exhaust fan off or the pressure tubing disconnected and the CHECKPOINT IIa plugged in, both the red indicator light and the audible alarm should be on.

Turn the fan system on or connect the pressure tubing to the fan piping. The red light and the audible alarm should go off. The green light should come on.

Now turn the fan off. The red light and audible alarm should come on in about two or three seconds and the green light should go out.

WARRANTY INFORMATION

Subject to applicable consumer protection legislation, RadonAway warrants that the CHECKPOINT IIa will be free from defective material and workmanship for a period of (1) year from the date of purchase. Warranty is contingent on installation in accordance with the instructions provided. This warranty does not apply where repairs or alterations have been made or attempted by others; or the unit has been abused or misused. Warranty does not include damage in shipment unless the damage is due to the negligence of RadonAway. All other warranties, expressed or written, are not valid. To make a claim under these limited warranties, you must return the defective item to RadonAway with a copy of the purchase receipt. RadonAway is not responsible for installation or removal cost associated with this warranty. In no case is RadonAway liable beyond the repair or replacement of the defective product FOB RadonAway.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THERE IS NO WARRANTY OF MERCHANTIBILITY. ALL OTHER WARRANTIES, EXPRESSED OR WRITTEN, ARE NOT VALID.

For service under these warranties, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. **No returns can be accepted without an RMA.** If factory return is required, the customer assumes all shipping costs to and from factory.

Manufactured by:
RadonAway
Ward Hill, MA
(978)-521-3703

APPENDIX C

Monitoring Forms
SSD Suction Pipe Vacuum Readings (Periodic Monitoring Form)
SSD Annual Inspection

Maguire Family Properties / Former GM Delco Chassis Division Facility
SSDS Suction Pipe Vacuum Readings

Date	Time	Initials	Normal Range	Fan 1 (SP-2) (Col Q-16)	Fan 2 (SP-5) (Col Q-19)	Fan 3 (SP-8) (Col Q-22)	Visual Inspection of Piping	COMMENTS
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					
			>1.0 in.w.c. <4.0 in.w.c.					

Notes:
* Document readings at least monthly.
* Email results monthly to Contacts.
* Readings are in Inches of Water Column (in.w.c.).
* If reading is out of range email or call Contacts within one business day.
* See Figure for suction points and fan locations.

Contacts:
1 - Mark Ramsdell - Haley & Aldrich - 321-4262 - Mramsdell@HaleyAldrich.com
2 - Tom Wells - Stantec - 413-5625 - TWells@Stantec.com

Maguire Family Properties / Former GM Delco Chassis Division Facility
SSD System
Annual Inspection

Date	Time	Initials	Fan 1	Fan 2	Fan 3	Comments

Date	Time	Initials	PT-1	PT-2	PT-3	PT-4	PT-5	PT-6	PT-7	PT-8	Comments

Visual Inspection of System:
Recommendation Actions:
Description of Past Year Activities:

Notes:
* **Readings are in Inches of Water Column (in.w.c.)**
* **See Figure for monitoring points and fan locations**