September 15, 2020
File No. 25211374.52

Ms. Cindy Koepke
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Subject: Construction Documentation Report
1131 North Sherman Avenue, Madison (Dream Bikes) Vapor Mitigation System
Laundry Land Cleaners (former), Northgate Shopping Center
BRRTS #02-13-552183

Dear Ms. Koepke:

On behalf of Northgate Partnership, SCS Engineers (SCS) has prepared this Construction Documentation Report for a vapor mitigation system constructed at 1131 North Sherman Avenue, Madison (currently Dream Bikes).The system was installed in March 2020 and is currently operating. The report also includes a maintenance plan for operation of the system.

Please contact Betty Socha at (608) 212-6664 or bsocha@scsengineers.com with any questions concerning this report.

Sincerely,

Betty J. Socha, PhD, PG
Senior Project Manger
SCS Engineers

Robert E. Langdon
Senior Project Manager
SCS Engineers

REL/jsn/BJS/MRH

cc: Paul Roth, Northgate Partnership
Nic Alexander, The Alexander Company
Alex Sterling, The Alexander Company
Rebecca Schultz, The Alexander Company

Encl. Vapor Mitigation System Construction Documentation Report

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VAPOR MITIGATION SYSTEM CONSTRUCTION DOCUMENTATION REPORT

Laundry Land Cleaners (former)
1131 North Sherman Avenue
Madison, Wisconsin 53704

SCS ENGINEERS

25211374.52 | September 15, 2020

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

Table of Contents

Table

Figures

Appendices

I:\3745_Deliverables\1131 N. Sherman VMS Documentation Report\200915_Koepke_1131 N. Sherman Ave- Dream Bikes VMS Construction Documentation Report.docx

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1.0 INTRODUCTION

This Construction Documentation Report serves to document the construction of the vapor mitigation system (VMS) constructed at 1131 North Sherman Avenue, Madison, Wisconsin.

1.1 LOCATION AND PROJECT INFORMATION

1.	Responsible Party:	The Alexander Company 2450 Rimrock Road, Suite 100 Madison, WI 53713
2.	Site Owner:	The Alexander Company 2450 Rimrock Road, Suite 100 Madison, WI 53713
3.	Site Address	1131 North Sherman Avenue Madison, WI 53704
4.	Site Location:	NW¼, SW¼, Section 31, T08N, R10E Dane
5.	Environmental Consultant:	SCS Engineers 2830 Dairy Drive Madison, WI 53718 608-224-2830 Phone 608-224-2839 Fax
6.	SCS Project Manager	Betty Socha 608-212-6664
7.	BRRTS #:	02-13-552183
8.	WDNR Contact:	Ms. Cindy Koepke 608-219-2181

2.0 SITE BACKGROUND

A release of dry cleaning solvent (tetrachloroethylene (PCE)) from the Laundry Land facility was reported to the Wisconsin Department of Natural Resources (WDNR) in 2008. Subsequent work has included site investigation to evaluate the degree and extent of related chlorinated volatile organic compounds (CVOCs) in soil, groundwater, and soil gas; and in-situ treatment of CVOCs in groundwater.

Building sub-slab vapor sampling performed within the former dry cleaner unit (currently Dream Bikes) confirmed the presence of PCE and trichloroethylene (TCE) in sub-slab vapor at concentrations in excess of WDNR's sub-slab vapor risk screening levels (VRSLs) for small commercial buildings.

On January 16, 2020, SCS submitted a Dry Cleaner Environmental Response Fund (DERF) Change Order to the WDNR which included a scope of work and estimated costs for construction of a VMS within the Dream Bikes unit. The proposed VMS included multiple vertical vacuum pickup points to be constructed through the floor slab and connected to a vacuum blower on the outside of the

building. The VMS was designed to depressurize the sub-slab and prevent migration of vapors into the building.

Based on subsequent communications with the property owner, it was determined that a horizontal (trench) VMS would be less disruptive to the building tenants, so SCS submitted a revised Change Order to WDNR on February 26, 2020, which included details for a horizontal perforated pipe installed in a trench below the concrete floor connected to an external vacuum blower. The WDNR approved the scope and costs for the horizontal VMS in a letter dated February 27, 2020.

3.0 VAPOR MITIGATION SYSTEM INSTALLATION

3.1 SUB-SLAB VACUUM TESTING AND UTILITY LOCATING

SCS coordinated a private utility locate within the Dream Bikes unit and conducted a vacuum test on March 2, 2020, to evaluate sub-slab material and assesses potential vacuum distribution. The test included pulling vacuum from a single temporary sub-slab pickup point (P-1) and measuring vacuum at several sub-slab vacuum observation points. Utility locating services were provided by GLS Utility, LLC of Sun Prairie, Wisconsin.

To construct the temporary vacuum pickup point, SCS used a coring machine to cut a 4-inch-diameter hole through the floor at a location near the front of the unit approximately mid-way between the east and west walls of the unit. A hand auger was used to core through sub-slab material to a depth of approximately 2 feet below the floor. The sub-slab material was observed to include a few inches of poorly graded sand underlain by silty sand or silt.

SCS installed three sub-slab Vapor Pin™ vacuum observation points (VO-1 through VO-3) which were set flush with the floor in 2-inch diameter holes drilled using a hand-held drill. Vacuum was applied to the 4-inch pickup point (P-1) using a wet-dry vacuum while sub-slab vacuum was measured at the observation points using a digital manometer. Vacuum measurements were also taken from previously installed sub-slab sampling ports, 1131 N and 1131 S. The temporary pickup point and vacuum observation points are shown on **Figure 1**.

The testing showed that the sub-slab materials are relatively fine-grained and would likely limit flow, but that vacuum applied to a central pickup point (P-1), similar to a trench system, could produce sub-slab vacuum from the point to the adjacent walls of the unit. It was also noted that the sub-slab vacuum from the single pickup point was not evenly distributed, suggesting preferential pathways exist within the sub-slab material or floor.

The private utility locate identified abandoned water lines and active sewer lines within the proposed trench area that would need to be protected or sealed during the VMS construction to prevent vacuum loss.

3.2 CONSTRUCTION

The VMS was constructed consistent with SCS's February 26, 2020 revised DERF Change Order. Prior to commencing construction activities, buried utilities were located near the proposed trench. Construction activities were initiated on March 14, 2020, and were performed by RECONEX, Inc. of Wisconsin Dells, Wisconsin and documented by SCS. Photos of the VMS installation are included in **Appendix A**. VMS details are also provided in **Figures 1** and **2**.

The VMS was constructed by installing horizontal perforated piping within an approximate 1-foot-wide trench extending from the front to the back of the Dream Bikes unit. To construct the trench, an electric concrete saw was used to cut a 2-foot-wide section of floor, and a mini-excavator was used to remove the concrete and excavate soil from the trench to a depth of approximately 14 inches below the top of the floor slab. All soil from the trench was contained in a roll off box and disposed of at Waste Management's Madison Prairie Landfill. Additional details regarding waste disposal are provided in Section 4.0. Vacuum observation points P-1 and VO-3 were removed during the trenching, as these points were within the trench limits.

Two sections of 4-inch-diameter perforated plastic pipe were placed in the trench to create northern and southern sub-slab vacuum zones. Plastic sheeting and fine-grained soil were placed in the trench to form a barrier separating the northern from the southern sections of perforated pipe. Each section of perforated piping was connected to 4-inch diameter Schedule 40 PVC pipe and extended within the trench to the southern interior wall of the unit and elbowed up above the floor slab. The pipes were secured to the interior southern wall of the unit and fitted with valves to control flow to the southern and northern vacuum pickup lines. Above the valves the piping was reduced to a single 4-inch diameter PVC pipe which was sealed through the wall to the exterior of the building.

The trench was backfilled with pea stone, compacted, and capped with 15 mil Stego Wrap plastic vapor barrier, which was taped to the edges of the cut concrete. Concrete was then poured over the vapor barrier and allowed to cure. On March 23, 2020, the property owner's contractor (Xpert Concrete & Restoration Ltd. of Madison, Wisconsin) ground and polished the new concrete to match the existing flooring.

On March 24, 2020, SCS conducted a blower test on the VMS piping to determine final blower specifications and valve settings. For the test, a 1-horsepower Rotron blower, capable of producing up to 45 inches of water column vacuum, was temporarily connected to the 4-inch diameter PVC VMS pipe at the building exterior. SCS installed additional vapor pin sub-slab vacuum observation points (VO-4 and VO-5) to evaluate vacuum distribution during the test. During the test the VMS valves were adjusted to distribute sub-slab vacuum between the front and back of the Dream Bikes unit.

Based on the blower test, a RadonAway HS2000 blower was selected as the permanent blower for the VMS system. This blower is capable of producing relatively high vacuum and high flow suitable for the relatively low permeability sub-slab material and large area requiring depressurization. SCS ordered the blower soon after the blower testing; however, its delivery from the manufacturer was delayed due to the Covid-19 pandemic.

On May 4, 2020, RECONEX completed VMS construction with installation and startup of the RadonAway blower, and installation of a manometer to measure system vacuum. The blower was connected to the 4-inch diameter PVC pipe and mounted to the south exterior of the building. A Dwyer magnehelic differential pressure gauge (manometer) was connected to the 4-inch PVC pipe inside the building and mounted to the south interior wall of the building next to the pipe. Blower and manometer details are provided in Appendix B. An electrician was contracted to wire the blower to a dedicated breaker in the breaker box located at the south end of the Dream Bikes unit.

3.3 PRESSURE FIELD EXTENSION TESTING AND FLOOR SEALING

SCS conducted sub-slab pressure field extension testing approximately 1 hour after system startup on May 4, 2020, and again approximately 1 day after system startup on May 5, 2020. Vacuum measurements are summarized in Table 1.

On May 5, 2020, SCS inspected the floor of the Dream Bikes units and found minor air leakage from the VMS through cracks in the floor. To limit vacuum loss, SCS sealed the cracks using Miracle Bond epoxy. The May 5, 2020 vacuum readings shown in **Table 1** were taken after the cracks were sealed. A vacuum of at least 0.002 inches of water column was measured at all of the monitoring points.

4.0 WASTE MANAGEMENT

Soils excavated from the VMS trench were containerized on site in a roll-off box and covered with plastic sheeting. A waste profile sample was collected from the soil and submitted to Pace Analytical of Green Bay, Wisconsin, for analyses of volatile organic compounds and metals, including arsenic, barium, cadmium, chromium, and lead as required by Waste Management. The laboratory analytical report is included in **Appendix C**.

Waste Management accepted the soil for direct landfill disposal and on April 15, 2020, the roll-off box was transported by Royal Container to Waste Management's Madison Prairie Landfill. A total of approximately 10.9 tons of soil was disposed under waste profile number 133279WI. Soil disposal documentation is provided in **Appendix C**.

5.0 VAPOR MITIGATION SYSTEM MAINTENANCE PLAN

A VMS maintenance plan is provided in **Appendix D**. The plan describes various VMS components and maintenance requirements, summarizes limitations, and includes a maintenance form to document maintenance activities.

Table

1 Pressure Field Extension Testing Results

Table 1. Pressure Field Extension Testing Results
1131 North Sherman Avenue, Dream Bikes (Former Laundry Land)
SCS Engineers Project #25211374.52

Date	VMS Manometer	VO-1	VO-2	VO-4	VO-5	1131S	1131N
5/4/2020	5.0	-0.012	-0.002	-0.005	-0.004	-0.247	-4.828
5/5/2020	5.0	-0.013	-0.003	-0.004	-0.003	-0.242	-4.975

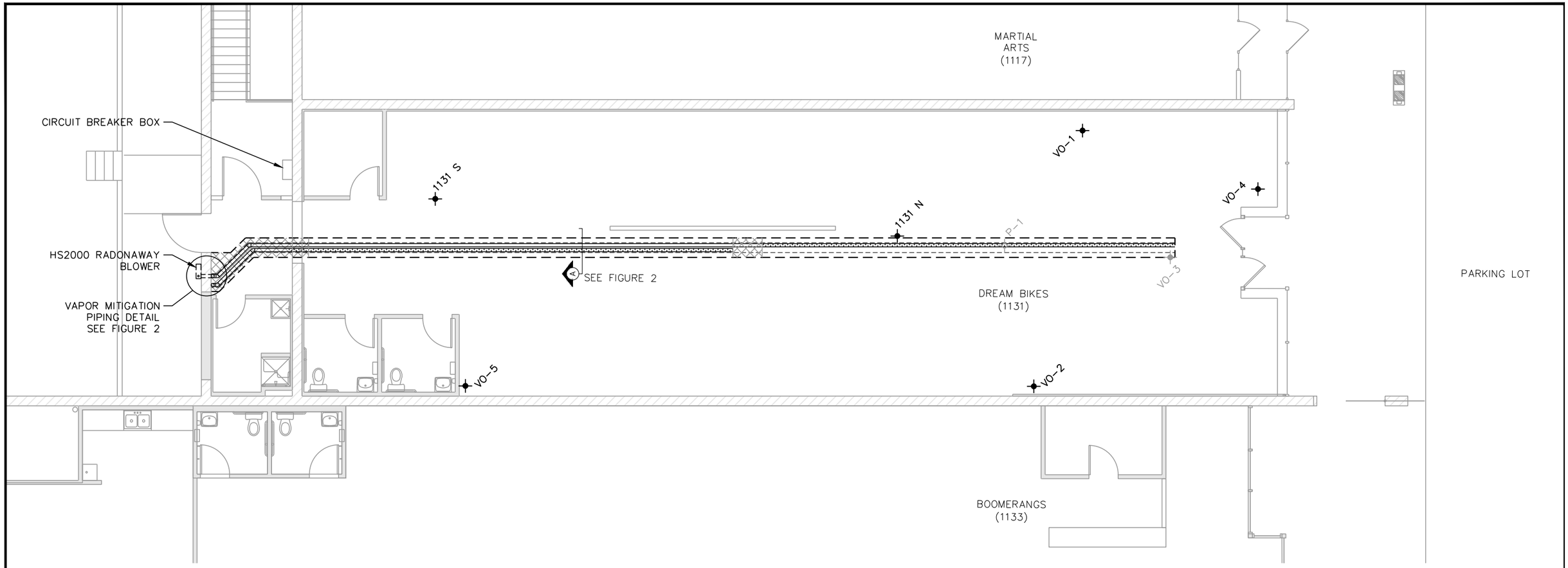
Abbreviations:
VMS = Vapor Mitigation System
NA = Not Applicable

Notes:
Vacuums in inches of water.
VMS vacuum from manometer.
Sub-slab vacuums for remaining points measured using digital manometer.

Created by:	REL	Date:	9/9/2020
Last Rev by:	REL	Date:	9/14/2020
Checked by:	LMH	Date:	9/14/2020
Proj Mgr QA/QC:	REL	Date:	9/14/2020

\\Mad-fs01\data\Projects\3745_Deliverables\1131 N. Sherman VMS Documentation Report\[Table 1 - Pressure Field Extension Testing Summary.xlsx]Vapor Intrusion

Figures



LEGEND

- CONCRETE SAWCUT
- 12" WIDE TRENCH
- 4" DIA. PVC PIPE
- 4" DIA. PERFORATED DRAIN TILE
- SEAL BETWEEN PIPING SEGMENTS
- SUB-SLAB VACUUM OBSERVATION POINT
- ABANDONED SUB-SLAB VACUUM OBSERVATION POINT
- ABANDONED SUB-SLAB VACUUM TEST POINT

N

10 0 10

SCALE: 1" = 10'

PROJECT NO.	25211374.52	DRAWN BY:	KP
DRAWN:	08/11/2020	CHECKED BY:	REL
REVISED:	09/10/2020	APPROVED BY:	REL 09/15/2020

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT

NORTHGATE PARTNERSHIP
7625 BONETTI ROAD
DANE, WI 53529

SITE

NORTHGATE SHOPPING CENTER
1127 NORTH SHERMAN AVE.
MADISON, WI

VAPOR MITIGATION SYSTEM-PLAN VIEW
1131 NORTH SHERMAN AVE.

FIGURE
1

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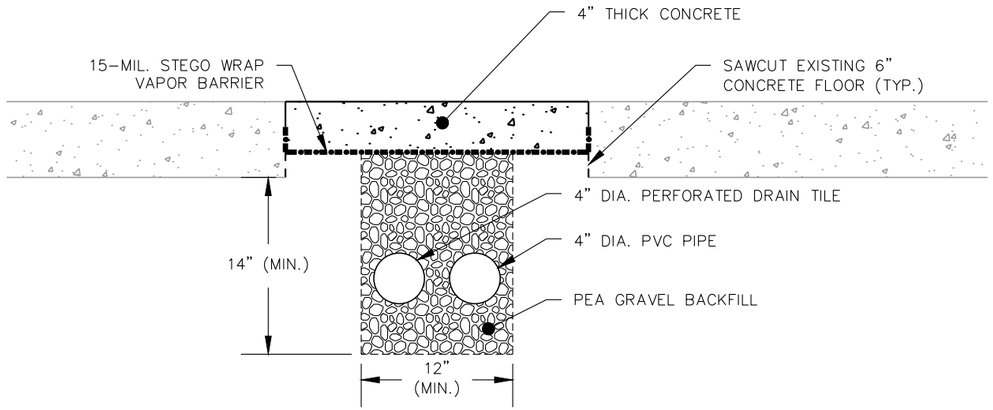
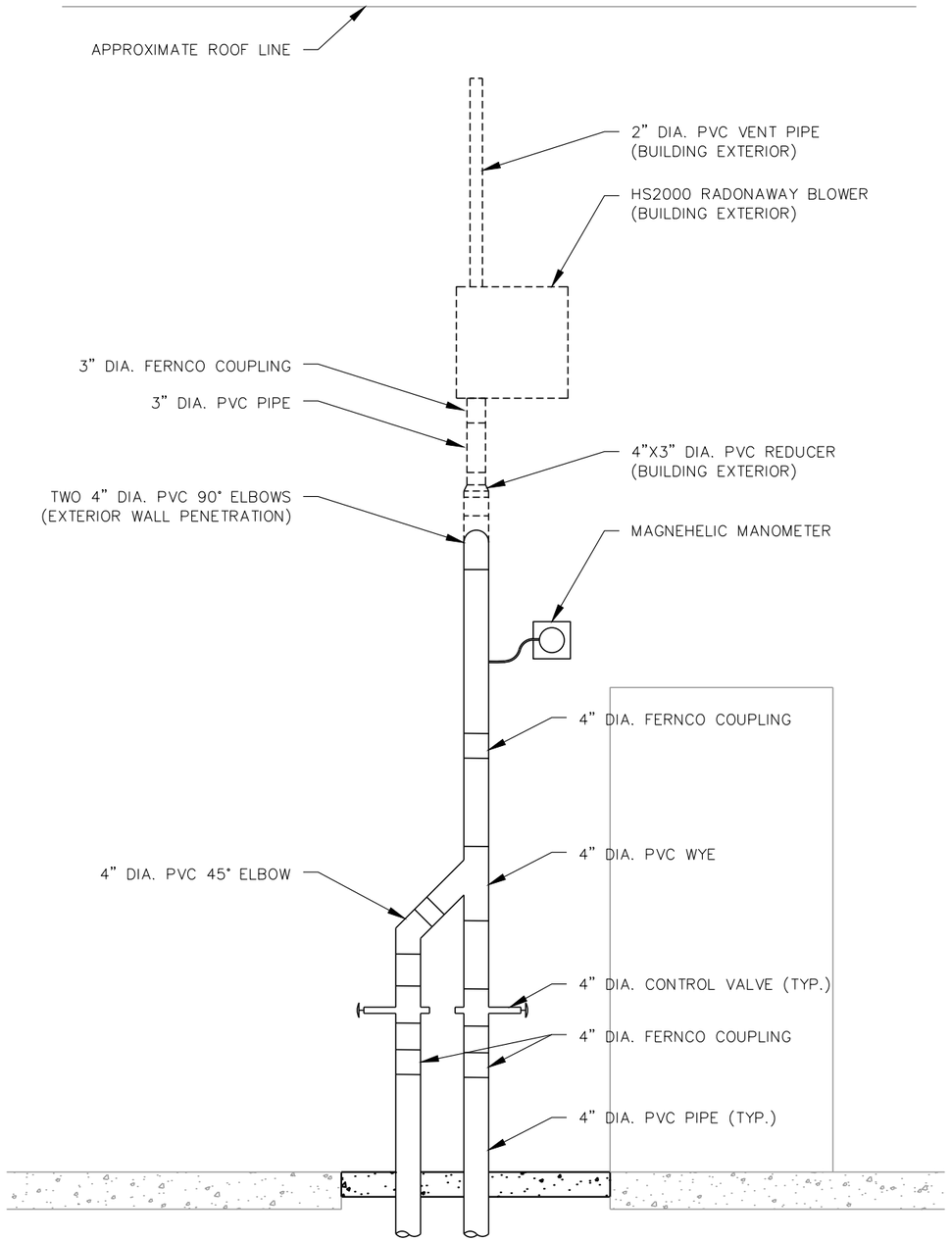


TRENCH SECTION A

(APPROXIMATE SCALE)



VAPOR MITIGATION SYSTEM PIPING DETAIL

(NOT TO SCALE)

PROJECT NO.	25211374.52	DRAWN BY:	KP
DRAWN:	08/11/2020	CHECKED BY:	REL
REVISED:	09/10/2020	APPROVED BY:	REL 09/15/2020

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: NORTHGATE PARTNERSHIP
7625 BONETTI ROAD
DANE, WI 53529

SITE: NORTHGATE SHOPPING CENTER
1127 NORTH SHERMAN AVE.
MADISON, WI

VAPOR MITIGATION SYSTEM-DETAILS
1131 NORTH SHERMAN AVE.

FIGURE
2

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Appendix A

Vapor Mitigation System Photos

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 1: Looking north at south end of Dream Bikes. Limestone screenings ramp constructed to access unit (3/13/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 2: Looking north from inside south end of Dream Bikes (3/14/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 3: Looking south from inside north end of Dream Bikes (3/14/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 4: Looking south. Cutting concrete floor (3/14/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 5: Looking south. Excavating trench (3/15/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 6: Looking south. Backfilling trench (3/15/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 7: Looking south. Placing Stego Wrap (3/16/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 8: Looking south. Installing perforated piping (3/16/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 9: Looking south at abandoned water pipe. Sealed and capped (3/16/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 10: Looking west at seal between north and south perforated pipes (3/16/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 11: Looking south at vapor mitigation system pipe sub-up and fine-grained soil backfill (3/17/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 12: Looking north at vapor barrier and concrete pouring (3/17/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 13: Looking south from front of store at new concrete (3/17/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 14: Looking south at concrete after grinding and sealing (3/23/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 15: Looking south at roll off bins for trench spoils (left) and clean fine-grained soils used to build ramp (right) (3/23/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 16: Looking south at vapor mitigation system piping and valves (3/23/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 17: Looking northeast at pilot test equipment (3/24/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 18: Looking northeast at RadonAway HS200 blower (5/4/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 19: Looking south at vapor mitigation system piping and manometer (5/4/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 20: Pressure field extension testing (typical) following system startup (5/5/20).

Appendix B

Blower and Manometer Documentation

RadonAway®

The world's leading radon fan manufacturer

HS Series Installation & Operating Instructions

DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED. MAKE SURE ELECTRICAL SERVICE TO FAN IS LOCKED IN "OFF" POSITION. DISCONNECT POWER BEFORE SERVICING FAN.

1. **WARNING!** Do not use fan in hazardous environments where fan electrical system could provide ignition to combustible or flammable materials.

2. **WARNING!** Check voltage at the fan to ensure it corresponds with nameplate. See Vapor Intrusion Application Note #AN001 for important information on VI Applications. RadonAway.com/vapor-intrusion

3. **WARNING!** Normal operation of this device may affect the combustion airflow needed for safe operation of fuel burning equipment. Check for possible backdraft conditions on all combustion devices after installation.

4. **NOTICE!** There are no user serviceable parts located inside the fan unit.
   Do NOT attempt to open. Return unit to the factory for service.

5. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA) "National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician.

6. **WARNING!** In the event that the fan is immersed in water, return unit to factory for service before operating.

7. **WARNING!** Do not twist or torque fan inlet or outlet piping as leakage may result.

8. **WARNING!** Do not leave fan unit installed on system piping without electrical power for more than 48 hours. Fan failure could result from this non-operational storage.

9. **WARNING!** TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

   a) Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

   b) Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

1.0 SYSTEM DESIGN CONSIDERATIONS

1.1 INTRODUCTION

The HS Series Fan is intended for use by trained, certified/licensed, professional radon mitigators. The purpose of this instruction is to provide additional guidance for the most effective use of the HS Series Fan. This instruction should be considered as a supplement to EPA/Radon Industry standard practices, state and local building codes and state regulations. In the event of a conflict, those codes, practices and regulations take precedence over this instruction.

1.2 ENVIRONMENTALS

The HS Series Fan is designed to perform year-round in all but the harshest climates without additional concern for temperature or weather. For installations in an area of severe cold weather, please contact RadonAway for assistance. When not in operation, the HS Series Fan should be stored in an area where the temperature is always greater than 32°F or less than 100°F. The HS Series Fan is thermally protected such that it will shut off when the internal temperature is above 194°F +/- 9°F (90°C +/- 5°C). If the HS Series Fan is idle in an area where the ambient temperature exceeds this shut off, it will not restart until the internal temperature falls below 104°F.

1.3 ACOUSTICS

The HS Series Fan, when installed properly, operates with little or no noticeable noise to the building occupants. Recommended system design and installation considerations to minimize noise: When installing the HS Series Fan above sleeping areas, select a location for mounting at the farthest possible distance. Avoid mounting near doors, fold-down stairs or other uninsulated structures which may transmit sound. Ensure a solid mounting for the HS Series Fan to avoid structure-borne vibration or noise.

The velocity of the outgoing air must also be considered in the overall system design. With small diameter piping, the “rushing” sound of the outlet air can be disturbing. The system design should incorporate a means to slow and quiet the outlet air. The use of the RadonAway Exhaust Muffler, p/n 24002, is strongly recommended.

1.4 GROUND WATER

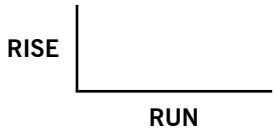
Under no circumstances should water be allowed to be drawn into the inlet of the HS Series Fan as this may result in damage to the unit. The HS Series Fan should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the HS Series Fan with water in installations with occasional high water tables.

In the event that a temporary high water table results in water at or above slab level, water will be drawn into the riser pipes thus blocking air flow to the HS Series Fan. The lack of cooling air will result in the HS Series Fan cycling on and off as the internal temperature rises above the thermal cutoff and falls upon shutoff. Should this condition arise, power down and disconnect the HS Series Fan until the water recedes allowing for return to normal operation; then reconnect and power on to turn the fan back on.

1.5 CONDENSATION & DRAINAGE

WARNING!: Failure to provide adequate drainage for condensation can result in system failure and damage the HS Series Fan.
Condensation is formed in the piping of a mitigation system when the air in the piping is chilled below its dew point. This can occur at points where the system piping goes through unheated space such as an attic, garage or outside. The system design must provide a means for water to drain back to a slab hole to remove the condensation.

The use of small diameter piping in a system increases the speed at which the air moves. The speed of the air can pull water uphill and, at sufficient velocity, it can actually move water vertically up the side walls of the pipe. This has the potential of creating a problem in the negative pressure (inlet) side piping. For HS Series Fan inlet piping, the following table provides the minimum recommended pipe diameters as well as minimum pitch under several system conditions. Use this chart to size piping for a system.



Pipe Diameter	Minimum Rise per 1 Foot of Run*		
	@ 25 CFM	@ 50 CFM	@ 100 CFM
4”	1/32”	3/32”	3/8”
3”	1/8”	3/8”	1 1/2”

*Typical operational flow rates:

HS2000 12 - 63 CFM
HS3000 19 - 39 CFM
HS5000 16 - 44 CFM

All exhaust piping should be 2” PVC.

1.6 SYSTEM MONITOR & LABEL

A properly designed system should incorporate a “System On” indicator for affirmation of system operation. A Magnehelic pressure gauge is recommended for this purpose. The indicator should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the gauge with water in installations with occasional high water tables. A System Label (P/N 15022) with instructions for contacting the installing contractor for service and also identifying the necessity for regular radon tests to be conducted by the building occupants, must be conspicuously placed where the occupants frequent and can see the label.

1.7 SLAB COVERAGE

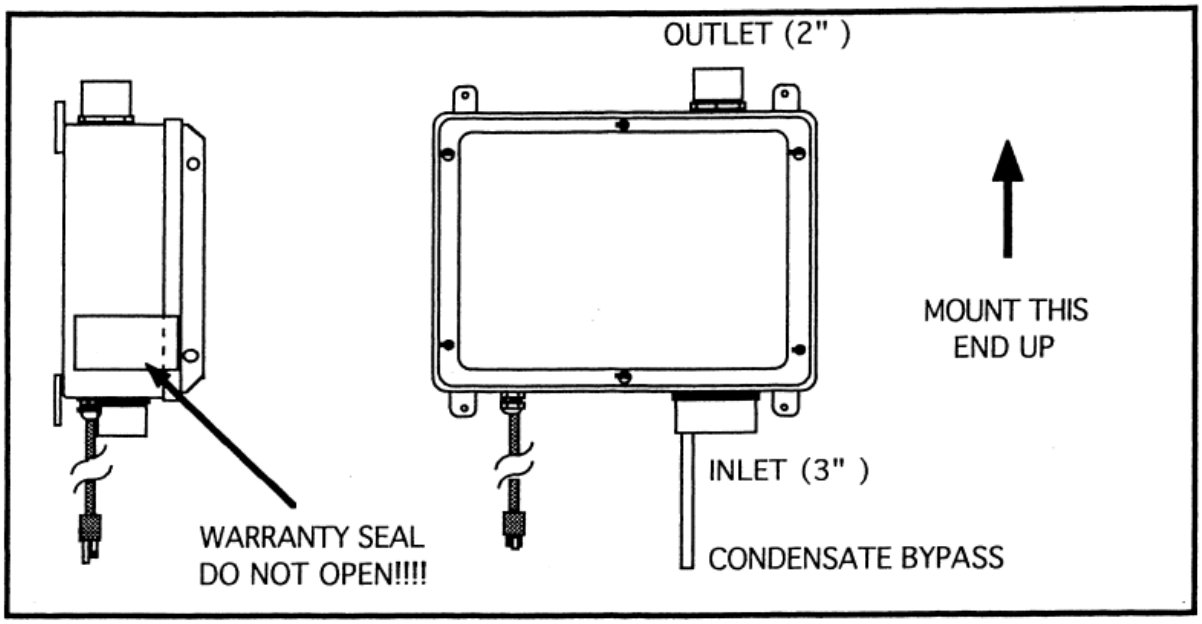
The HS Series Fan can provide coverage of well over 1000 sq. ft. per slab penetration. This will, of course, depend on the sub-slab aggregate in any particular installation and the diagnostic results. In general, sand and gravel are much looser aggregates than dirt and clay. Additional suction points can be added as required. It is recommended that a small pit (5 to 10 gallons in size; larger as needed) be created below the slab at each suction hole. When fine sand or dirt is present it is recommended that the pit be lined with a material such as clean gravel, size 4, 5, 56, or 6 as classified (ASTM C33).

1.8 ELECTRICAL WIRING

For models with a cord, the HS Series Fan plugs into a standard 120V outlet. The switch box models are hardwired. All wiring must be performed in accordance with the National Fire Protection Association’s (NFPA)”National Electrical Code, Standard #70”-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician. Outdoor installations require the use of a UL listed watertight conduit. Ensure that all exterior electrical boxes are outdoor rated and properly caulked to prevent water penetration into the box. A means, such as a weep hole, is recommended to drain the box.

1.9 SPEED CONTROLS

Electronic speed controls can **NOT** be used on HS Series units.



2.0 INSTALLATION

2.1 MOUNTING

Mount the HS Series Fan to the wall studs, or similar structure, in the selected location with (4) 1/4" x 1 1/2" lag screws (not provided). Ensure the HS Series Fan is both plumb and level.

2.2 DUCTING CONNECTIONS

Make final ducting connection to HS Series Fan with flexible couplings. Ensure all connections are tight. Do not twist or torque inlet and outlet piping on HS Series Fan or leaks may result.

NOTE: Do NOT solvent weld fittings to unit hubs.

2.3 VENT MUFFLER INSTALLATION

Install the muffler assembly in the selected location in the outlet ducting. Solvent weld all connections. The muffler is normally installed above the roofline at the end of the vent pipe.

2.4 OPERATION CHECKS & ANNUAL SYSTEM MAINTENANCE

_____ **Verify** all connections are tight and **leak-free**.

_____ **Ensure** the HS Series Fan and all ducting is secure and vibration-free.

_____ **Verify** system vacuum pressure with Magnehelic. **Ensure** vacuum pressure is within normal operating range and **less than** the maximum recommended as shown below:

HS2000 14" WC
HS3000 21" WC
HS5000 35" WC

(Above are based on sea-level operation, at higher altitudes reduce above by about 4% per 1000 Feet.)
If these are exceeded, increase number of suction points.

_____ **Verify Radon levels** by testing to EPA Protocol and applicable testing standards.

Addendum

Product Specifications

Model	Maximum Static Suction	Recommended Maximum Static Suction	Typical CFM vs Static Suction WC (Recommended Operating Range)						Power* Watts @ 115VAC
			0"	10"	15"	20"	25"	35"	
HS2000	16"	14"	62	40	23	-	-	-	153-314
HS3000	24"	21"	39	30	25	19	-	-	120-250
HS5000	41"	35"	43	35	32	28	24	18	349-381
HS2000E	16"	14"	62	40	23	-	-	-	153-314
HS3000E	24"	21"	39	30	25	19	-	-	120-250
HS5000E	41"	35"	43	35	32	28	24	18	349-381

**Power consumption varies with actual load conditions*

Inlet: 3.0" PVC

Outlet: 2.0" PVC

Mounting: Brackets for vertical mount

Weight: Approximately 18 lbs

Size: Approximately 15"W x 13"H x 8"D

Minimum recommended inlet ducting (greater diameter may always be used):

HS3000, HS5000 --- 2.0" PVC Pipe

HS2000 --- Main feeder line of 3.0" or greater PVC Pipe

Branch lines (if 3 or more) may be 2.0" PVC Pipe

Outlet ducting: 2.0" PVC

Storage Temperature Range: 32°F-100°F

Thermal Cutout: 194°F +/- 9°F (90°C +/- 5°C)

Locked rotor protection

Internal condensate bypass

IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the RadonAway® HS Series Fan for shipping damage within 15 days of receipt. **Notify RadonAway® of any damages immediately.** RadonAway® is not responsible for damages incurred during shipping.

There are no user serviceable parts inside the fan. **Do not attempt to open the housing.** Return unit to factory for service.

Install the HS Series Fan in accordance with all EPA standard practices, and state and local building codes and state regulations.

Provide a copy of this instruction or comparable radon system and testing information to the building occupants after completing system installation.

Warranty

RadonAway® warrants that the HS Series Fan (the "Fan") will be free from defects in materials and workmanship for a period of 90 days from the date of purchase (the "Warranty Term").

RadonAway® will repair or replace any Fan which fails due to defects in materials or workmanship during the Warranty Term. The Fan must be returned (at Owner's cost) to the RadonAway® factory. Any Fan returned to the factory will be discarded unless the Owner provides specific instructions along with the Fan when it is returned regardless of whether or not the Fan is actually replaced under this warranty. Proof of purchase must be supplied upon request for service under this Warranty.

This Warranty is contingent on installation of the Fan in accordance with the instructions provided. This Warranty does not apply where any repairs or alterations have been made or attempted by others, or if the unit has been abused or misused. Warranty does not cover damage in shipment unless the damage is due to the negligence of RadonAway®.

1 YEAR EXTENDED WARRANTY WITH PROFESSIONAL INSTALLATION

RadonAway® will extend the Warranty Term of the fan to twelve (12) months from date of installation or fifteen (15) months from the date of manufacture, whichever is sooner, if the Fan is installed in a professionally designed and professionally installed active soil depressurization system or installed as a replacement fan in a professionally designed and professionally installed active soil depressurization system. Proof of purchase and/or proof of professional installation may be required for service under this warranty. RadonAway® is not responsible for installation, removal or delivery costs associated with this Warranty.

EXCEPT AS STATED ABOVE, THE HS SERIES FAN IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL RADONAWAY® BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR RELATING TO, THE FAN OR THE PERFORMANCE THEREOF. RADONAWAY'S AGGREGATE LIABILITY HEREUNDER SHALL NOT IN ANY EVENT EXCEED THE AMOUNT OF THE PURCHASE PRICE OF SAID PRODUCT. THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT, TO THE EXTENT THE SAME DOES NOT MEET WITH RADONAWAY'S WARRANTY AS PROVIDED ABOVE.

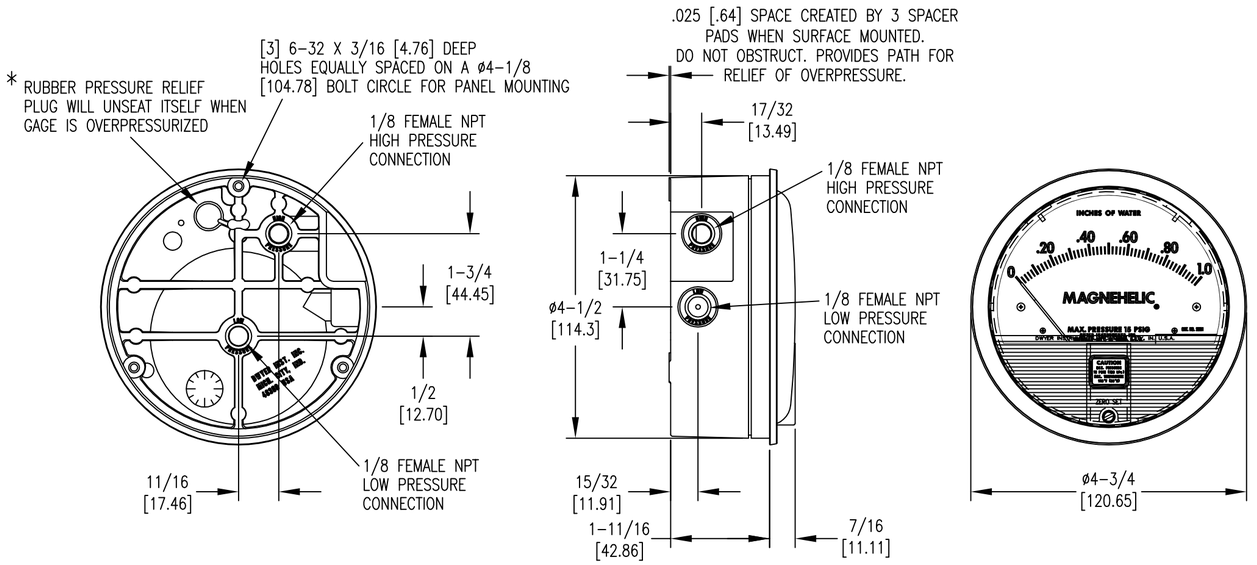
For service under this Warranty, contact RadonAway® for a Return Material Authorization (RMA) Number and shipping information. No returns can be accepted without an RMA. If factory return is required, the customer assumes all shipping costs to and from factory.

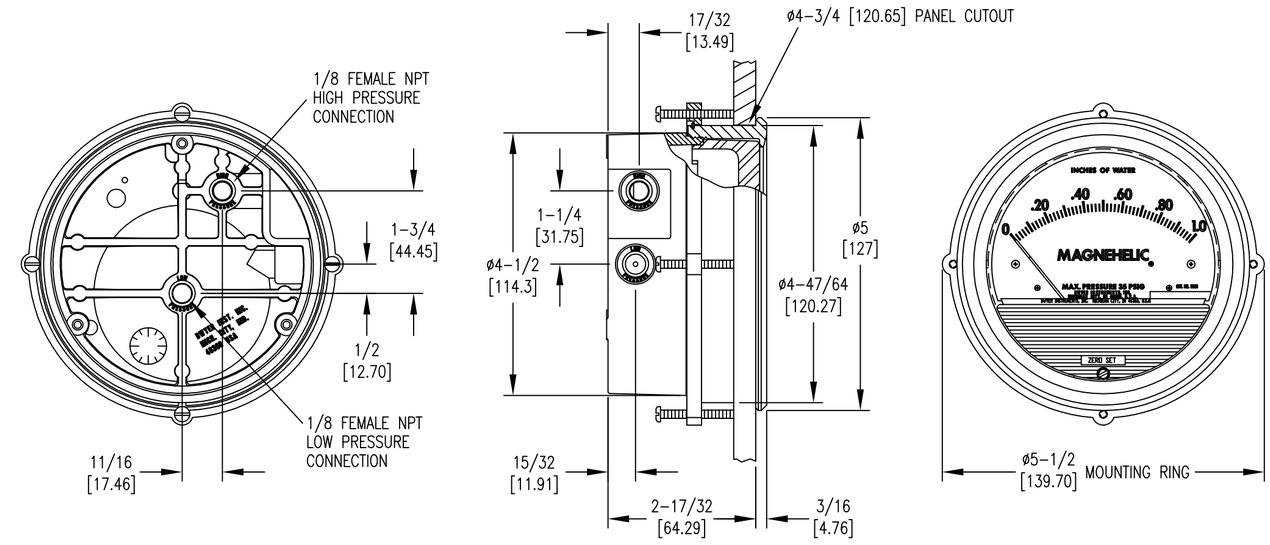
RadonAway®
3 Saber Way
Ward Hill, MA 01835 USA
TEL (978) 521-3703
FAX (978) 521-3964
Email to: Returns@RadonAway.com

Record the following information for your records:

Serial No. _____

Purchase Date: _____





CD = CRITICAL DIMENSION

STANDARD TOLERANCES UNLESS NOTED:
ALL DECIMAL DIMENSIONS ± .005
ALL ANGLES ± 1°

SCALE 1:2

NO.	CHANGES	BY/DATE

DATE
DWN BY
CHKD
APPD

NAME: 2000 MAGNEHELIC ARTWORK (FOR REFERENCE ONLY)

ACAD2002

MATERIAL

FINISH

DWYER INSTRUMENTS, INC.
MICHIGAN CITY, INDIANA 46360 U.S.A.

FR. NO. 12-700060-05

NOTICE: This drawing and the principles and elements of design embodied therein are the exclusive property of DWYER INSTRUMENTS, INC. and are not to be communicated, disclosed, reproduced or used except as previously authorized in writing by such corporation and must not be submitted to outside parties for examination without the written consent of said corporation.

Appendix C

Laboratory Report for Waste Characterization and Waste Disposal Documentation

Madison Prairie Landfill
6002 NELSON ROAD
SUN PRAIRIE, WI, 53590
Ph: 608-837-9031

Reprint
Ticket# 382193

Customer Name NORTHGATEPART NORTH GATE PART
Ticket Date 04/15/2020
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code A-24-06
Manifest #42-01
Destination
PO
Profile 133279WI (PCE CONTAMINATED SOIL WM012A)
Generator 136-NORTHGATEPA7625 NORTHGATE PARTNERSHIP

Carrier ROYAL CON ROLLOFF
Vehicle# 42
Container
Driver
Check#
Billing # 0001996
Gen EPA ID
Grid

Volume

	Time	Scale	Operator	Inbound		
In	04/15/2020 10:43:19	scale	akaiser		Gross	52900 lb
Out	04/15/2020 10:58:13	scale	akaiser		Tare	31020 lb
					Net	21880 lb
					Tons	10.94

Comments

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Sp. W.-T	100	10.94	Tons				
2	EVF-L-Standard Env	100	1	Load				
3	FUEL-Fuel Surcharg	100		%				
4	WWM-P-Waste Water	100		%				

Total Tax
Total Ticket

Driver`s Signature

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

March 31, 2020

Betty Socha
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

Dear Betty Socha:

Enclosed are the analytical results for sample(s) received by the laboratory on March 25, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

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Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

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Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40205224001	**WP-1**	Solid	03/24/20 14:15	03/25/20 09:25

REPORT OF LABORATORY ANALYSIS

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Green Bay, WI 54302
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SAMPLE ANALYTE COUNT

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40205224001	**WP-1**	EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8260	ALD	65	PASI-G
		ASTM D2974-87	MLR	1	PASI-G

PASI-G = Pace Analytical Services - Green Bay

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SUMMARY OF DETECTION

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40205224001	**WP-1**					
EPA 6010	Arsenic	3.6J	mg/kg	10	03/27/20 00:58	D3
EPA 6010	Barium	13.7	mg/kg	0.51	03/26/20 06:27	
EPA 6010	Cadmium	0.91	mg/kg	0.51	03/26/20 06:27	
EPA 6010	Chromium	3.8	mg/kg	1.0	03/26/20 06:27	
EPA 6010	Lead	6.1	mg/kg	2.0	03/26/20 06:27	
EPA 8260	Tetrachloroethene	336	ug/kg	136	03/27/20 13:18	
ASTM D2974-87	Percent Moisture	5.2	%	0.10	03/25/20 14:12	

REPORT OF LABORATORY ANALYSIS

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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

Sample: WP-1 **Lab ID: 40205224001** Collected: 03/24/20 14:15 Received: 03/25/20 09:25 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050 Pace Analytical Services - Green Bay								
Arsenic	**3.6J**	mg/kg	10	3.0	2	03/25/20 22:51	03/27/20 00:58	7440-38-2	D3
Barium	**13.7**	mg/kg	0.51	0.15	1	03/25/20 22:51	03/26/20 06:27	7440-39-3	
Cadmium	**0.91**	mg/kg	0.51	0.14	1	03/25/20 22:51	03/26/20 06:27	7440-43-9	
Chromium	**3.8**	mg/kg	1.0	0.28	1	03/25/20 22:51	03/26/20 06:27	7440-47-3	
Lead	**6.1**	mg/kg	2.0	0.61	1	03/25/20 22:51	03/26/20 06:27	7439-92-1	
Selenium	**<1.3**	mg/kg	4.5	1.3	1	03/25/20 22:51	03/26/20 06:27	7782-49-2	
Silver	**<0.31**	mg/kg	1.0	0.31	1	03/25/20 22:51	03/26/20 06:27	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471 Pace Analytical Services - Green Bay								
Mercury	**<0.011**	mg/kg	0.036	0.011	1	03/30/20 09:09	03/31/20 12:17	7439-97-6	M0
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1,1,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	630-20-6	W
1,1,1-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	71-55-6	W
1,1,2,2-Tetrachloroethane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	79-34-5	W
1,1,2-Trichloroethane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	79-00-5	W
1,1-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	75-34-3	W
1,1-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	75-35-4	W
1,1-Dichloropropene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	563-58-6	W
1,2,3-Trichlorobenzene	**<47.3**	ug/kg	158	47.3	1	03/26/20 11:15	03/27/20 13:18	87-61-6	W
1,2,3-Trichloropropane	**<37.4**	ug/kg	125	37.4	1	03/26/20 11:15	03/27/20 13:18	96-18-4	W
1,2,4-Trichlorobenzene	**<41.7**	ug/kg	250	41.7	1	03/26/20 11:15	03/27/20 13:18	120-82-1	W
1,2,4-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	95-63-6	W
1,2-Dibromo-3-chloropropane	**<237**	ug/kg	789	237	1	03/26/20 11:15	03/27/20 13:18	96-12-8	W
1,2-Dibromoethane (EDB)	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	106-93-4	W
1,2-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	95-50-1	W
1,2-Dichloroethane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	107-06-2	W
1,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	78-87-5	W
1,3,5-Trimethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	108-67-8	W
1,3-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	541-73-1	W
1,3-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	142-28-9	W
1,4-Dichlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	106-46-7	W
2,2-Dichloropropane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	594-20-7	W
2-Butanone (MEK)	**<176**	ug/kg	585	176	1	03/26/20 11:15	03/27/20 13:18	78-93-3	W
2-Chlorotoluene	**<25.0**	ug/kg	64.0	25.0	1	03/26/20 11:15	03/27/20 13:18	95-49-8	W
4-Chlorotoluene	**<25.0**	ug/kg	64.0	25.0	1	03/26/20 11:15	03/27/20 13:18	106-43-4	W
Benzene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	71-43-2	W
Bromobenzene	**<25.0**	ug/kg	62.0	25.0	1	03/26/20 11:15	03/27/20 13:18	108-86-1	W
Bromochloromethane	**<25.0**	ug/kg	70.0	25.0	1	03/26/20 11:15	03/27/20 13:18	74-97-5	W
Bromodichloromethane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	75-27-4	W
Bromoform	**<25.0**	ug/kg	72.0	25.0	1	03/26/20 11:15	03/27/20 13:18	75-25-2	W
Bromomethane	**<63.8**	ug/kg	250	63.8	1	03/26/20 11:15	03/27/20 13:18	74-83-9	W

REPORT OF LABORATORY ANALYSIS

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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

Sample: WP-1 **Lab ID: 40205224001** Collected: 03/24/20 14:15 Received: 03/25/20 09:25 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
Carbon tetrachloride	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	56-23-5	W
Chlorobenzene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	108-90-7	W
Chloroethane	**<46.4**	ug/kg	250	46.4	1	03/26/20 11:15	03/27/20 13:18	75-00-3	W
Chloroform	**<47.5**	ug/kg	250	47.5	1	03/26/20 11:15	03/27/20 13:18	67-66-3	W
Chloromethane	**<25.0**	ug/kg	80.0	25.0	1	03/26/20 11:15	03/27/20 13:18	74-87-3	W
Dibromochloromethane	**<229**	ug/kg	763	229	1	03/26/20 11:15	03/27/20 13:18	124-48-1	W
Dibromomethane	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	74-95-3	W
Dichlorodifluoromethane	**<25.0**	ug/kg	72.0	25.0	1	03/26/20 11:15	03/27/20 13:18	75-71-8	W
Diisopropyl ether	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	108-20-3	W
Ethylbenzene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	100-41-4	W
Hexachloro-1,3-butadiene	**<68.7**	ug/kg	229	68.7	1	03/26/20 11:15	03/27/20 13:18	87-68-3	W
Isopropylbenzene (Cumene)	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	98-82-8	W
Methyl-tert-butyl ether	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	1634-04-4	W
Methylene Chloride	**<26.3**	ug/kg	88.0	26.3	1	03/26/20 11:15	03/27/20 13:18	75-09-2	W
Naphthalene	**<27.3**	ug/kg	91.0	27.3	1	03/26/20 11:15	03/27/20 13:18	91-20-3	W
Styrene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	100-42-5	W
Tetrachloroethene	**336**	ug/kg	136	40.8	1	03/26/20 11:15	03/27/20 13:18	127-18-4	
Toluene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	108-88-3	W
Trichloroethene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	79-01-6	W
Trichlorofluoromethane	**<25.0**	ug/kg	65.0	25.0	1	03/26/20 11:15	03/27/20 13:18	75-69-4	W
Vinyl chloride	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	75-01-4	W
cis-1,2-Dichloroethene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	156-59-2	W
cis-1,3-Dichloropropene	**<42.3**	ug/kg	141	42.3	1	03/26/20 11:15	03/27/20 13:18	10061-01-5	W
m&p-Xylene	**<50.0**	ug/kg	120	50.0	1	03/26/20 11:15	03/27/20 13:18	179601-23-1	W
n-Butylbenzene	**<30.0**	ug/kg	100	30.0	1	03/26/20 11:15	03/27/20 13:18	104-51-8	W
n-Propylbenzene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	103-65-1	W
o-Xylene	**<25.0**	ug/kg	60.0	25.0	1	03/26/20 11:15	03/27/20 13:18	95-47-6	W
p-Isopropyltoluene	**<25.0**	ug/kg	72.0	25.0	1	03/26/20 11:15	03/27/20 13:18	99-87-6	W
sec-Butylbenzene	**<25.0**	ug/kg	72.0	25.0	1	03/26/20 11:15	03/27/20 13:18	135-98-8	W
tert-Butylbenzene	**<25.0**	ug/kg	62.0	25.0	1	03/26/20 11:15	03/27/20 13:18	98-06-6	W
trans-1,2-Dichloroethene	**<25.0**	ug/kg	67.0	25.0	1	03/26/20 11:15	03/27/20 13:18	156-60-5	W
trans-1,3-Dichloropropene	**<25.0**	ug/kg	74.0	25.0	1	03/26/20 11:15	03/27/20 13:18	10061-02-6	W
Surrogates									
Dibromofluoromethane (S)	106	%	57-146		1	03/26/20 11:15	03/27/20 13:18	1868-53-7	
Toluene-d8 (S)	97	%	64-134		1	03/26/20 11:15	03/27/20 13:18	2037-26-5	
4-Bromofluorobenzene (S)	90	%	54-126		1	03/26/20 11:15	03/27/20 13:18	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**5.2**	%	0.10	0.10	1		03/25/20 14:12		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

QC Batch: 351238
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40205224001

METHOD BLANK: 2034395 Matrix: Solid
Associated Lab Samples: 40205224001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	<0.010	0.035	03/31/20 12:12	

LABORATORY CONTROL SAMPLE: 2034396

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.83	0.94	113	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2034397 2034398

Parameter	Units	40205224001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	<0.011	0.88	0.88	1.0	1.0	117	117	85-115	0	20	M0

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QUALITY CONTROL DATA

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

QC Batch: 350974
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40205224001

METHOD BLANK: 2032810 Matrix: Solid
Associated Lab Samples: 40205224001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	<1.5	4.9	03/26/20 05:29	
Barium	mg/kg	<0.15	0.50	03/26/20 05:29	
Cadmium	mg/kg	<0.13	0.50	03/26/20 05:29	
Chromium	mg/kg	<0.28	1.0	03/26/20 05:29	
Lead	mg/kg	<0.60	2.0	03/26/20 05:29	
Selenium	mg/kg	<1.3	4.4	03/26/20 05:29	
Silver	mg/kg	<0.31	1.0	03/26/20 05:29	

LABORATORY CONTROL SAMPLE: 2032811

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	51.0	102	80-120	
Barium	mg/kg	50	50.6	101	80-120	
Cadmium	mg/kg	50	51.8	104	80-120	
Chromium	mg/kg	50	49.8	100	80-120	
Lead	mg/kg	50	52.5	105	80-120	
Selenium	mg/kg	50	52.4	105	80-120	
Silver	mg/kg	25	24.6	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2032812 2032813

Parameter	Units	40203735001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	7.3	63.2	63.1	65.5	64.0	92	90	75-125	2	20	
Barium	mg/kg	94.3	63.2	63.1	160	163	105	109	75-125	2	20	
Cadmium	mg/kg	<0.17	63.2	63.1	60.0	58.8	95	93	75-125	2	20	
Chromium	mg/kg	27.2	63.2	63.1	89.0	89.0	98	98	75-125	0	20	
Lead	mg/kg	20.1	63.2	63.1	74.1	73.7	86	85	75-125	1	20	
Selenium	mg/kg	<1.7	63.2	63.1	59.4	55.7	92	86	75-125	6	20	
Silver	mg/kg	<0.39	31.5	31.5	30.2	29.9	95	95	75-125	1	20	

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QUALITY CONTROL DATA

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

QC Batch: 351037
QC Batch Method: EPA 5035/5030B
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Med Level Normal List
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40205224001

METHOD BLANK: 2033071 Matrix: Solid
Associated Lab Samples: 40205224001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	<7.8	50.0	03/27/20 09:40	
1,1,1-Trichloroethane	ug/kg	<13.5	50.0	03/27/20 09:40	
1,1,2,2-Tetrachloroethane	ug/kg	<15.7	52.0	03/27/20 09:40	
1,1,2-Trichloroethane	ug/kg	<15.7	52.0	03/27/20 09:40	
1,1-Dichloroethane	ug/kg	<13.5	50.0	03/27/20 09:40	
1,1-Dichloroethene	ug/kg	<11.8	50.0	03/27/20 09:40	
1,1-Dichloropropene	ug/kg	<10.7	50.0	03/27/20 09:40	
1,2,3-Trichlorobenzene	ug/kg	<47.3	158	03/27/20 09:40	
1,2,3-Trichloropropane	ug/kg	<37.4	125	03/27/20 09:40	
1,2,4-Trichlorobenzene	ug/kg	<41.7	250	03/27/20 09:40	
1,2,4-Trimethylbenzene	ug/kg	<18.1	60.0	03/27/20 09:40	
1,2-Dibromo-3-chloropropane	ug/kg	<237	789	03/27/20 09:40	
1,2-Dibromoethane (EDB)	ug/kg	<17.0	57.0	03/27/20 09:40	
1,2-Dichlorobenzene	ug/kg	<13.1	50.0	03/27/20 09:40	
1,2-Dichloroethane	ug/kg	<13.8	50.0	03/27/20 09:40	
1,2-Dichloropropane	ug/kg	<13.5	50.0	03/27/20 09:40	
1,3,5-Trimethylbenzene	ug/kg	<16.0	53.0	03/27/20 09:40	
1,3-Dichlorobenzene	ug/kg	<13.0	50.0	03/27/20 09:40	
1,3-Dichloropropane	ug/kg	<11.0	50.0	03/27/20 09:40	
1,4-Dichlorobenzene	ug/kg	<12.0	50.0	03/27/20 09:40	
2,2-Dichloropropane	ug/kg	<15.7	52.0	03/27/20 09:40	
2-Butanone (MEK)	ug/kg	<176	585	03/27/20 09:40	
2-Chlorotoluene	ug/kg	<19.3	64.0	03/27/20 09:40	
4-Chlorotoluene	ug/kg	<19.3	64.0	03/27/20 09:40	
Benzene	ug/kg	<12.5	42.0	03/27/20 09:40	
Bromobenzene	ug/kg	<18.5	62.0	03/27/20 09:40	
Bromochloromethane	ug/kg	<20.9	70.0	03/27/20 09:40	
Bromodichloromethane	ug/kg	<10.0	50.0	03/27/20 09:40	
Bromoform	ug/kg	<21.6	72.0	03/27/20 09:40	
Bromomethane	ug/kg	<63.8	250	03/27/20 09:40	
Carbon tetrachloride	ug/kg	<7.5	50.0	03/27/20 09:40	
Chlorobenzene	ug/kg	<16.8	56.0	03/27/20 09:40	
Chloroethane	ug/kg	<46.4	250	03/27/20 09:40	
Chloroform	ug/kg	<47.5	250	03/27/20 09:40	
Chloromethane	ug/kg	<24.0	80.0	03/27/20 09:40	
cis-1,2-Dichloroethene	ug/kg	<14.8	50.0	03/27/20 09:40	
cis-1,3-Dichloropropene	ug/kg	<42.3	141	03/27/20 09:40	
Dibromochloromethane	ug/kg	<229	763	03/27/20 09:40	
Dibromomethane	ug/kg	<17.7	59.0	03/27/20 09:40	
Dichlorodifluoromethane	ug/kg	<21.7	72.0	03/27/20 09:40	

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QUALITY CONTROL DATA

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

METHOD BLANK: 2033071 Matrix: Solid
Associated Lab Samples: 40205224001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diisopropyl ether	ug/kg	<14.0	50.0	03/27/20 09:40	
Ethylbenzene	ug/kg	<14.5	50.0	03/27/20 09:40	
Hexachloro-1,3-butadiene	ug/kg	<68.7	229	03/27/20 09:40	
Isopropylbenzene (Cumene)	ug/kg	<17.7	59.0	03/27/20 09:40	
m&p-Xylene	ug/kg	<32.4	108	03/27/20 09:40	
Methyl-tert-butyl ether	ug/kg	<16.2	54.0	03/27/20 09:40	
Methylene Chloride	ug/kg	<26.3	88.0	03/27/20 09:40	
n-Butylbenzene	ug/kg	<30.0	100	03/27/20 09:40	
n-Propylbenzene	ug/kg	<17.8	59.0	03/27/20 09:40	
Naphthalene	ug/kg	<27.3	91.0	03/27/20 09:40	
o-Xylene	ug/kg	<18.1	60.0	03/27/20 09:40	
p-Isopropyltoluene	ug/kg	<21.7	72.0	03/27/20 09:40	
sec-Butylbenzene	ug/kg	<21.5	72.0	03/27/20 09:40	
Styrene	ug/kg	<12.3	50.0	03/27/20 09:40	
tert-Butylbenzene	ug/kg	<18.7	62.0	03/27/20 09:40	
Tetrachloroethene	ug/kg	<38.7	129	03/27/20 09:40	
Toluene	ug/kg	<13.1	50.0	03/27/20 09:40	
trans-1,2-Dichloroethene	ug/kg	<20.2	67.0	03/27/20 09:40	
trans-1,3-Dichloropropene	ug/kg	<22.2	74.0	03/27/20 09:40	
Trichloroethene	ug/kg	<12.8	50.0	03/27/20 09:40	
Trichlorofluoromethane	ug/kg	<19.6	65.0	03/27/20 09:40	
Vinyl chloride	ug/kg	<14.5	50.0	03/27/20 09:40	
4-Bromofluorobenzene (S)	%	91	54-126	03/27/20 09:40	
Dibromofluoromethane (S)	%	109	57-146	03/27/20 09:40	
Toluene-d8 (S)	%	104	64-134	03/27/20 09:40	

LABORATORY CONTROL SAMPLE: 2033072

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	2500	2410	96	70-132	
1,1,2,2-Tetrachloroethane	ug/kg	2500	2080	83	70-130	
1,1,2-Trichloroethane	ug/kg	2500	2060	82	70-130	
1,1-Dichloroethane	ug/kg	2500	2420	97	70-130	
1,1-Dichloroethene	ug/kg	2500	2330	93	77-126	
1,2,4-Trichlorobenzene	ug/kg	2500	2010	81	66-130	
1,2-Dibromo-3-chloropropane	ug/kg	2500	1780	71	54-129	
1,2-Dibromoethane (EDB)	ug/kg	2500	2240	90	70-130	
1,2-Dichlorobenzene	ug/kg	2500	2360	94	70-130	
1,2-Dichloroethane	ug/kg	2500	2280	91	70-134	
1,2-Dichloropropane	ug/kg	2500	2500	100	74-124	
1,3-Dichlorobenzene	ug/kg	2500	2300	92	70-130	
1,4-Dichlorobenzene	ug/kg	2500	2400	96	70-130	
Benzene	ug/kg	2500	2180	87	70-130	
Bromodichloromethane	ug/kg	2500	2550	102	70-130	

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QUALITY CONTROL DATA

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

LABORATORY CONTROL SAMPLE: 2033072

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromoform	ug/kg	2500	2130	85	47-115	
Bromomethane	ug/kg	2500	2680	107	64-165	
Carbon tetrachloride	ug/kg	2500	2540	101	70-131	
Chlorobenzene	ug/kg	2500	2440	98	70-130	
Chloroethane	ug/kg	2500	2710	108	28-197	
Chloroform	ug/kg	2500	2310	92	80-131	
Chloromethane	ug/kg	2500	1660	66	45-118	
cis-1,2-Dichloroethene	ug/kg	2500	2230	89	70-130	
cis-1,3-Dichloropropene	ug/kg	2500	2200	88	70-130	
Dibromochloromethane	ug/kg	2500	2450	98	70-130	
Dichlorodifluoromethane	ug/kg	2500	1150	46	38-108	
Ethylbenzene	ug/kg	2500	2340	94	82-122	
Isopropylbenzene (Cumene)	ug/kg	2500	2310	92	70-130	
m&p-Xylene	ug/kg	5000	4810	96	70-130	
Methyl-tert-butyl ether	ug/kg	2500	1880	75	70-130	
Methylene Chloride	ug/kg	2500	2430	97	70-130	
o-Xylene	ug/kg	2500	2410	96	70-130	
Styrene	ug/kg	2500	2360	94	70-130	
Tetrachloroethene	ug/kg	2500	2500	100	70-130	
Toluene	ug/kg	2500	2450	98	80-121	
trans-1,2-Dichloroethene	ug/kg	2500	2500	100	70-130	
trans-1,3-Dichloropropene	ug/kg	2500	1870	75	70-130	
Trichloroethene	ug/kg	2500	2680	107	70-130	
Trichlorofluoromethane	ug/kg	2500	2290	92	81-141	
Vinyl chloride	ug/kg	2500	1750	70	68-121	
4-Bromofluorobenzene (S)	%			98	54-126	
Dibromofluoromethane (S)	%			100	57-146	
Toluene-d8 (S)	%			103	64-134	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2033073 2033074

Parameter	Units	40205165005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/kg	<25.0	1370	1370	1280	1200	93	88	64-132	6	20	
1,1,2,2-Tetrachloroethane	ug/kg	<25.0	1370	1370	1230	1160	90	85	70-132	6	20	
1,1,2-Trichloroethane	ug/kg	<25.0	1370	1370	1260	1140	92	83	70-130	9	20	
1,1-Dichloroethane	ug/kg	<25.0	1370	1370	1350	1260	98	92	70-130	7	20	
1,1-Dichloroethene	ug/kg	<25.0	1370	1370	1160	1040	84	76	65-126	11	21	
1,2,4-Trichlorobenzene	ug/kg	<41.7	1370	1370	1300	1190	95	87	66-139	9	20	
1,2-Dibromo-3-chloropropane	ug/kg	<237	1370	1370	1300	1090	95	80	47-146	17	23	
1,2-Dibromoethane (EDB)	ug/kg	<25.0	1370	1370	1310	1160	95	85	70-130	12	20	
1,2-Dichlorobenzene	ug/kg	<25.0	1370	1370	1400	1240	102	91	70-130	12	20	
1,2-Dichloroethane	ug/kg	<25.0	1370	1370	1340	1190	98	87	70-136	12	20	
1,2-Dichloropropane	ug/kg	<25.0	1370	1370	1460	1300	106	95	74-124	12	20	

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QUALITY CONTROL DATA

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2033073 2033074

Parameter	Units	40205165005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,3-Dichlorobenzene	ug/kg	<25.0	1370	1370	1420	1210	104	89	70-130	16	20	
1,4-Dichlorobenzene	ug/kg	<25.0	1370	1370	1410	1240	103	91	70-130	12	20	
Benzene	ug/kg	<25.0	1370	1370	1220	1090	89	79	70-130	12	20	
Bromodichloromethane	ug/kg	<25.0	1370	1370	1380	1310	100	95	70-130	5	20	
Bromoform	ug/kg	<25.0	1370	1370	1360	1180	100	86	47-129	14	20	
Bromomethane	ug/kg	<63.8	1370	1370	1610	1480	118	108	41-180	9	20	
Carbon tetrachloride	ug/kg	<25.0	1370	1370	1300	1190	95	87	58-133	9	20	
Chlorobenzene	ug/kg	<25.0	1370	1370	1470	1340	107	98	70-130	9	20	
Chloroethane	ug/kg	<46.4	1370	1370	1560	1400	114	102	28-197	11	20	
Chloroform	ug/kg	<47.5	1370	1370	1370	1220	100	89	80-131	12	20	
Chloromethane	ug/kg	<25.0	1370	1370	1030	984	75	72	26-118	5	20	
cis-1,2-Dichloroethene	ug/kg	<25.0	1370	1370	1290	1120	94	82	70-130	13	20	
cis-1,3-Dichloropropene	ug/kg	<42.3	1370	1370	1180	1030	86	75	70-130	13	20	
Dibromochloromethane	ug/kg	<229	1370	1370	1350	1180	98	86	67-130	13	20	
Dichlorodifluoromethane	ug/kg	<25.0	1370	1370	753	658	55	48	12-108	13	29	
Ethylbenzene	ug/kg	<25.0	1370	1370	1300	1130	95	82	80-122	14	20	
Isopropylbenzene (Cumene)	ug/kg	<25.0	1370	1370	1290	1130	94	82	70-130	13	20	
m&p-Xylene	ug/kg	<50.0	2740	2740	2820	2420	103	88	70-130	15	20	
Methyl-tert-butyl ether	ug/kg	<25.0	1370	1370	1120	1040	82	76	70-130	8	20	
Methylene Chloride	ug/kg	<26.3	1370	1370	1330	1260	97	92	70-130	5	20	
o-Xylene	ug/kg	28.3J	1370	1370	1370	1210	98	86	70-130	12	20	
Styrene	ug/kg	<25.0	1370	1370	1400	1230	102	90	70-130	13	20	
Tetrachloroethene	ug/kg	<38.7	1370	1370	1350	1240	98	90	70-130	8	20	
Toluene	ug/kg	<25.0	1370	1370	1360	1240	98	89	80-121	9	20	
trans-1,2-Dichloroethene	ug/kg	<25.0	1370	1370	1390	1210	101	88	70-130	14	20	
trans-1,3-Dichloropropene	ug/kg	<25.0	1370	1370	1150	1020	84	75	70-130	12	20	
Trichloroethene	ug/kg	<25.0	1370	1370	1510	1340	110	98	70-130	12	20	
Trichlorofluoromethane	ug/kg	<25.0	1370	1370	1260	1160	92	85	60-141	8	26	
Vinyl chloride	ug/kg	<25.0	1370	1370	1030	939	75	68	46-121	9	20	
4-Bromofluorobenzene (S)	%						93	89	54-126			
Dibromofluoromethane (S)	%						80	78	57-146			
Toluene-d8 (S)	%						80	79	64-134			

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QUALITY CONTROL DATA

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

QC Batch: 350952
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40205224001

SAMPLE DUPLICATE: 2032699

Parameter	Units	40205214005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.6	17.1	9	10	

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QUALIFIERS

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
W	Non-detect results are reported on a wet weight basis.

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Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25211374.52 LAUNDRY LAND
Pace Project No.: 40205224

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40205224001	**WP-1**	EPA 3050	350974	EPA 6010	350988
40205224001	**WP-1**	EPA 7471	351238	EPA 7471	351288
40205224001	**WP-1**	EPA 5035/5030B	351037	EPA 8260	351038
40205224001	**WP-1**	ASTM D2974-87	350952		

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UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

40205224

(Please Print Clearly)	
Company Name:	SCS Engineers
Branch/Location:	Madison, WI
Project Contact:	Betty Socha
Phone:	608 224 2830
Project Number:	25211374.52
Project Name:	Laundry Land
Project State:	WI
Sampled By (Print):	Robert Youngdahl
Sampled By (Sign):	
PO #:	Regulatory Program:

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	Betty Socha
Mail To Company:	SCS Engineers
Mail To Address:	2830 Dairy Drive, Madison WI 53718
Invoice To Contact:	
Invoice To Company:	SCS
Invoice To Address:	Same as above
Invoice To Phone:	608 224 2830

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: VOCs 8260B	Analyses Requested: PCBs 8 Metals	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	WP-1	3/24/10	1415	S	N	F	4	4			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	3/24/10 1630		
[signature]	3/25/10 0925	[signature]	3/25/10 0925

PACE Project No.: 40205224

Receipt Temp = [illegible] °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal: Present / (Not Present) Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: SCSenvironmental Project # 40205224

All containers needing preservation have been checked and noted below: □Yes □No ☒N/A Initial when completed: Date/ Time:

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted):

	Glass								Plastic					Vials						Jars				General							
Pace Lab #	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																		1					1										2.5 / 5 / 10
002																																	2.5 / 5 / 10
003																																	2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009															3-25-20 BK																		2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:_____ Headspace in VOA Vials (>6mm) : □Yes □No ☒N/A ***If yes look in headspace column**

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Pace Analytical™ 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 25Apr2018
	Document No.: **F-GB-C-031-Rev.07**	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #: **WO# : 40205224**

40205224

Client Name: SCS engineers

Courier: ☒ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used SR - 96 **Type of Ice:** Wet Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 0.8 /Corr: 0.8

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Person examining contents: Date: 3-25-20 Initials: BL

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD: ☐Yes ☒No ☐N/A		8.
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: S		
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: dtm **Date:** 3/25/2020

Appendix D

Vapor Mitigation System Maintenance Plan

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN

1131 North Sherman Avenue, Madison, Wisconsin

September 15, 2020

Property Located at: 1131 North Sherman Avenue, Madison, WI 53704

WDNR BRRTS/Activity # 02-13-552183

Legal Description: CERTIFIED SURVEY MAP NO 13492 AS RECORDED IN DANE COUNTY REGISTER OF DEEDS IN VOL 88 PAGE 31 OF CERTIFIED SURVEYS, LOT 2.

Parcel ID # 081031303035

INTRODUCTION

This document is the Maintenance Plan for an active vapor mitigation system (VMS) at the above-referenced property in accordance 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 Wisconsin Department of Natural Resources (WDNR) South Central Region 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

Descriptions

System Description, Purpose, and Location

The VMS was constructed by RECONEX, Inc. under the supervision of SCS Engineers and was started up in May 2020. The VMS was designed to reduce the potential for vapor intrusion by depressurizing the sub-slab in areas where chlorinated volatile organic compounds (CVOCs) were detected in sub-slab vapor at concentrations in excess of WDNR commercial vapor risk screening levels.

The CVOC vapors appear to have originated from a historical release of dry cleaning solvent from the former Laundry Land drycleaner which operated at the 1131 North Sherman Avenue unit. The locations of various VMS components are shown on **Figures 1** and **2**.

System Design and Construction Documentation

Photographs of the VMS are included in **Attachment 1**. VMS details are provided in **Figures 1** and **2**.

The VMS was constructed in 2020 by RECONEX, Inc. of Wisconsin Dells, Wisconsin, under the supervision of SCS Engineers (SCS). The VMS was constructed by installing horizontal vacuum pickup piping within a 1-foot-wide trench extending from the front to the back of the unit. To construct the trench, an electric concrete saw was used to cut a 2-foot-wide section of floor, and a mini-excavator was used to remove the concrete and excavate soil from the trench to a depth of approximately 14 inches below the top of the floor slab. All soil from the trench was contained in a roll-off box and disposed of at Waste Management's Madison Prairie Landfill.

To construct the horizontal pickup lines, two sections of 4-inch-diameter perforated plastic pipe were placed in the trench to create northern and southern sub-slab vacuum pickup zones. Plastic sheeting and limestone screenings were placed in the trench to separate the northern from the southern sections of perforated pipe. Each section of perforated piping was connected to 4-inch diameter Schedule 40 PVC pipe and extended within the trench to the southern interior wall of the unit and elbowed up above the floor slab. The pipes were secured to the interior southern wall of the unit and fitted with valves to control flow to the southern and northern vacuum pickup lines. Above the valves the piping was reduced to a single 4-inch diameter PVC pipe which was sealed through the wall to the exterior of the building.

The trench was backfilled with pea stone, compacted, and capped with 15 mil Stego Wrap plastic vapor barrier, which was taped to the edges of the cut concrete. Concrete was then poured over the vapor barrier and allowed to cure. On March 23, 2020, the property owner's contractor (Xpert Concrete & Restoration Ltd. of Madison, Wisconsin) ground and polished the new concrete to match the existing flooring.

A RadonAway HS2000 blower was selected as the permanent blower for the VMS system. This blower is capable of producing relatively high vacuum and high flow suitable for the relatively low permeability sub-slab material and large area requiring depressurization.

On May 4, 2020, RECONEX completed VMS construction with installation and startup of the RadonAway blower, and installation of a VMS manometer to measure system vacuum. The blower was connected to the 4-inch diameter PVC pipe and mounted to the south exterior of the building. A Dwyer magnehelic differential pressure gauge (manometer) was connected to the 4-inch diameter PVC pipe inside the building and mounted to the south interior wall of the building next to the pipe. An electrician was contracted to wire the blower to a dedicated breaker in the breaker box located at the south end of the unit. Blower and manometer details are provided in Attachment 2.

System Maintenance

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

The floor of the unit 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 3).

Inspections

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

- Inspect valves:
  - The valves were set and taped in place when the system was commissioned and should not be moved. The valve controlling northern pickup zone (west valve) was set

to full open. The valve for the southern pickup zone (east valve) was set to approximately ¾ closed.
  - If the valves have been moved, contact SCS Engineers at (608) 224-2830 or a licensed radon mitigation contractor.

- Inspect manometer:
  - If manometer vacuum reads zero, check the fan circuit breaker and power switch on fan to make sure fan has power.
  - If manometer shows low vacuum (e.g., less than 4 inches of WC) check for vacuum leaks in piping and floor as necessary.
  - If fan vacuum cannot be rectified, contact SCS Engineers at (608) 224-2830 or a licensed radon mitigation contractor.

- Inspect fan exhaust line 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 3**).

- Keep copies of the Continuing Obligations 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, except vacuum blower replacement
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.

Contact Information

Property Owner: The Alexander Company
2450 Rimrock Road, Suite 100
Madison, WI 53713
(608) 258-5580

Consultant:	Betty Socha, SCS Engineers 2830 Dairy Drive Madison, WI 53718 (608) 224-2830
WDNR:	Cindy Koepke 3911 Fish Hatchery Road Fitchburg WI 53711 (608) 219-2181

I:\3745_Deliverables\1131 N. Sherman VMS Documentation Report\Appendix D_VMS Maintenance Plan\Vapor Mitigation System Maintenance Plan.docx

ATTACHMENT 1

Photos

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 1: Looking south at cut in floor for vapor mitigation system (3/23/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 2: Looking south at vapor mitigation system piping and valves (3/23/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 3: Looking northeast at RadonAway HS200 blower (5/4/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

Photo 4: Looking south at vapor mitigation system piping and manometer (5/4/20).

Vapor Mitigation System Construction, Dream Bikes (Former Laundry Land)
1131 North Sherman Avenue, Madison, Wisconsin
SCS Engineers Project #25211374.52

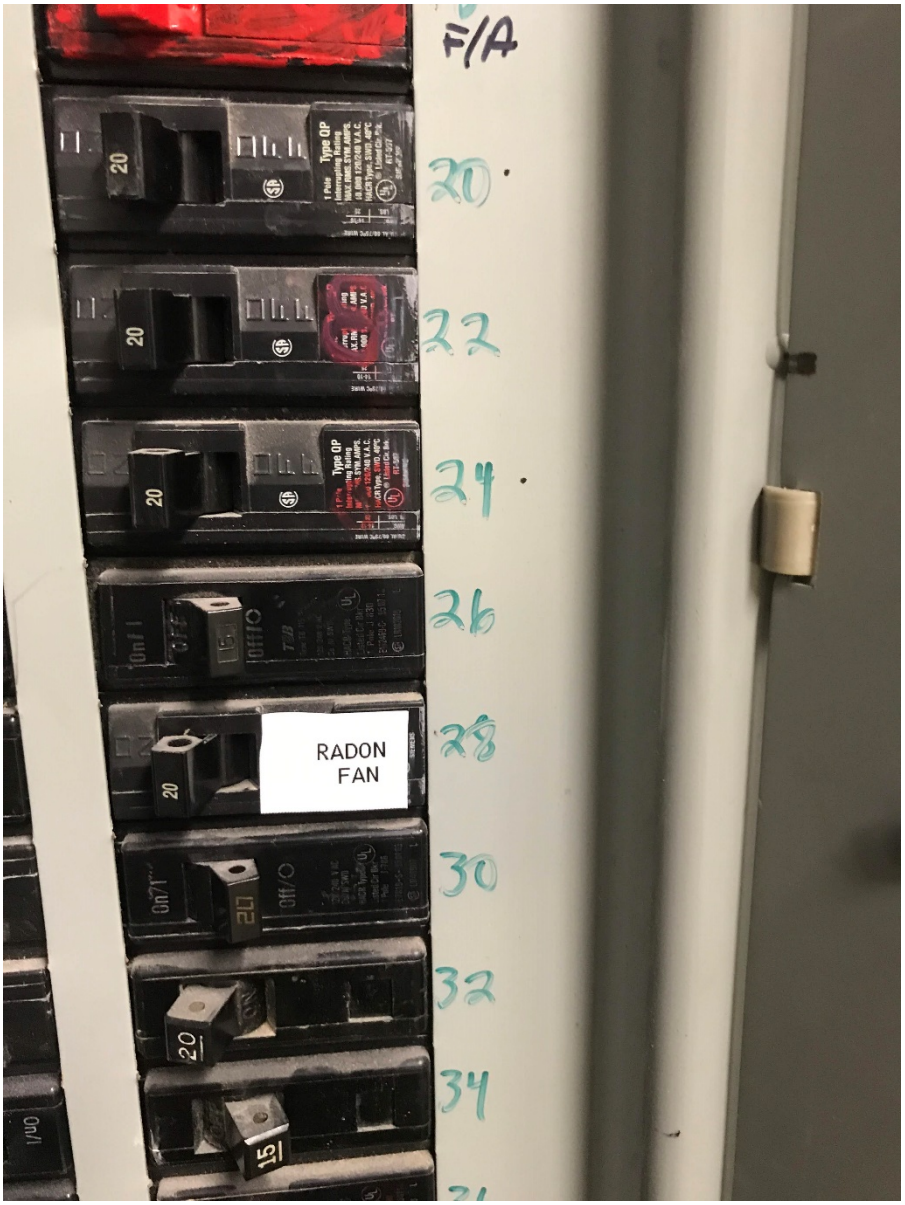


Photo 5: Breaker box with individual breaker for RadonAway fan used for the vapor mitigation system (5/4/20).

ATTACHMENT 2

Blower and Manometer Details

RadonAway®

The world's leading radon fan manufacturer

HS Series Installation & Operating Instructions

DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED. MAKE SURE ELECTRICAL SERVICE TO FAN IS LOCKED IN "OFF" POSITION. DISCONNECT POWER BEFORE SERVICING FAN.

1. **WARNING!** Do not use fan in hazardous environments where fan electrical system could provide ignition to combustible or flammable materials.

2. **WARNING!** Check voltage at the fan to ensure it corresponds with nameplate. See Vapor Intrusion Application Note #AN001 for important information on VI Applications. RadonAway.com/vapor-intrusion

3. **WARNING!** Normal operation of this device may affect the combustion airflow needed for safe operation of fuel burning equipment. Check for possible backdraft conditions on all combustion devices after installation.

4. **NOTICE!** There are no user serviceable parts located inside the fan unit.
   Do NOT attempt to open. Return unit to the factory for service.

5. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA) "National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician.

6. **WARNING!** In the event that the fan is immersed in water, return unit to factory for service before operating.

7. **WARNING!** Do not twist or torque fan inlet or outlet piping as leakage may result.

8. **WARNING!** Do not leave fan unit installed on system piping without electrical power for more than 48 hours. Fan failure could result from this non-operational storage.

9. **WARNING!** TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

   a) Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

   b) Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

1.0 SYSTEM DESIGN CONSIDERATIONS

1.1 INTRODUCTION

The HS Series Fan is intended for use by trained, certified/licensed, professional radon mitigators. The purpose of this instruction is to provide additional guidance for the most effective use of the HS Series Fan. This instruction should be considered as a supplement to EPA/Radon Industry standard practices, state and local building codes and state regulations. In the event of a conflict, those codes, practices and regulations take precedence over this instruction.

1.2 ENVIRONMENTALS

The HS Series Fan is designed to perform year-round in all but the harshest climates without additional concern for temperature or weather. For installations in an area of severe cold weather, please contact RadonAway for assistance. When not in operation, the HS Series Fan should be stored in an area where the temperature is always greater than 32°F or less than 100°F. The HS Series Fan is thermally protected such that it will shut off when the internal temperature is above 194°F +/- 9°F (90°C +/- 5°C). If the HS Series Fan is idle in an area where the ambient temperature exceeds this shut off, it will not restart until the internal temperature falls below 104°F.

1.3 ACOUSTICS

The HS Series Fan, when installed properly, operates with little or no noticeable noise to the building occupants. Recommended system design and installation considerations to minimize noise: When installing the HS Series Fan above sleeping areas, select a location for mounting at the farthest possible distance. Avoid mounting near doors, fold-down stairs or other uninsulated structures which may transmit sound. Ensure a solid mounting for the HS Series Fan to avoid structure-borne vibration or noise.

The velocity of the outgoing air must also be considered in the overall system design. With small diameter piping, the “rushing” sound of the outlet air can be disturbing. The system design should incorporate a means to slow and quiet the outlet air. The use of the RadonAway Exhaust Muffler, p/n 24002, is strongly recommended.

1.4 GROUND WATER

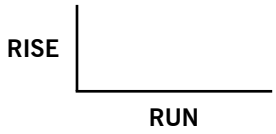
Under no circumstances should water be allowed to be drawn into the inlet of the HS Series Fan as this may result in damage to the unit. The HS Series Fan should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the HS Series Fan with water in installations with occasional high water tables.

In the event that a temporary high water table results in water at or above slab level, water will be drawn into the riser pipes thus blocking air flow to the HS Series Fan. The lack of cooling air will result in the HS Series Fan cycling on and off as the internal temperature rises above the thermal cutoff and falls upon shutoff. Should this condition arise, power down and disconnect the HS Series Fan until the water recedes allowing for return to normal operation; then reconnect and power on to turn the fan back on.

1.5 CONDENSATION & DRAINAGE

WARNING!: Failure to provide adequate drainage for condensation can result in system failure and damage the HS Series Fan.
Condensation is formed in the piping of a mitigation system when the air in the piping is chilled below its dew point. This can occur at points where the system piping goes through unheated space such as an attic, garage or outside. The system design must provide a means for water to drain back to a slab hole to remove the condensation.

The use of small diameter piping in a system increases the speed at which the air moves. The speed of the air can pull water uphill and, at sufficient velocity, it can actually move water vertically up the side walls of the pipe. This has the potential of creating a problem in the negative pressure (inlet) side piping. For HS Series Fan inlet piping, the following table provides the minimum recommended pipe diameters as well as minimum pitch under several system conditions. Use this chart to size piping for a system.



Pipe Diameter	Minimum Rise per 1 Foot of Run*		
	@ 25 CFM	@ 50 CFM	@ 100 CFM
4”	1/32”	3/32”	3/8”
3”	1/8”	3/8”	1 1/2”

*Typical operational flow rates:

HS2000 12 - 63 CFM
HS3000 19 - 39 CFM
HS5000 16 - 44 CFM

All exhaust piping should be 2” PVC.

1.6 SYSTEM MONITOR & LABEL

A properly designed system should incorporate a “System On” indicator for affirmation of system operation. A Magnehelic pressure gauge is recommended for this purpose. The indicator should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the gauge with water in installations with occasional high water tables. A System Label (P/N 15022) with instructions for contacting the installing contractor for service and also identifying the necessity for regular radon tests to be conducted by the building occupants, must be conspicuously placed where the occupants frequent and can see the label.

1.7 SLAB COVERAGE

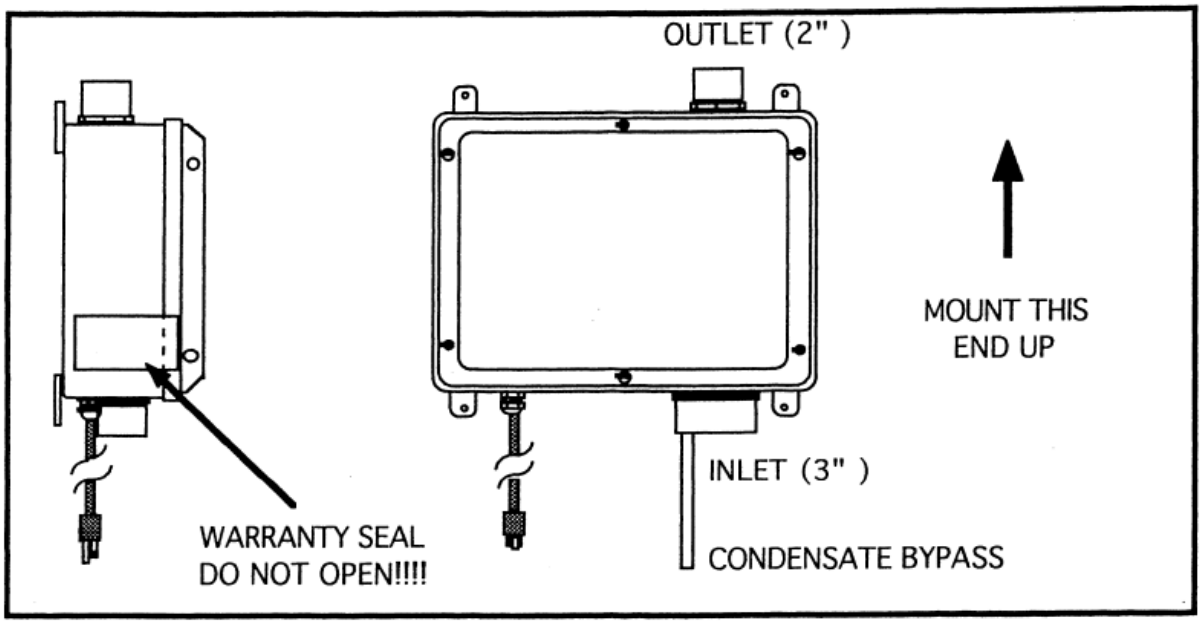
The HS Series Fan can provide coverage of well over 1000 sq. ft. per slab penetration. This will, of course, depend on the sub-slab aggregate in any particular installation and the diagnostic results. In general, sand and gravel are much looser aggregates than dirt and clay. Additional suction points can be added as required. It is recommended that a small pit (5 to 10 gallons in size; larger as needed) be created below the slab at each suction hole. When fine sand or dirt is present it is recommended that the pit be lined with a material such as clean gravel, size 4, 5, 56, or 6 as classified (ASTM C33).

1.8 ELECTRICAL WIRING

For models with a cord, the HS Series Fan plugs into a standard 120V outlet. The switch box models are hardwired. All wiring must be performed in accordance with the National Fire Protection Association’s (NFPA)”National Electrical Code, Standard #70”-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician. Outdoor installations require the use of a UL listed watertight conduit. Ensure that all exterior electrical boxes are outdoor rated and properly caulked to prevent water penetration into the box. A means, such as a weep hole, is recommended to drain the box.

1.9 SPEED CONTROLS

Electronic speed controls can **NOT** be used on HS Series units.



2.0 INSTALLATION

2.1 MOUNTING

Mount the HS Series Fan to the wall studs, or similar structure, in the selected location with (4) 1/4" x 1 1/2" lag screws (not provided). Ensure the HS Series Fan is both plumb and level.

2.2 DUCTING CONNECTIONS

Make final ducting connection to HS Series Fan with flexible couplings. Ensure all connections are tight. Do not twist or torque inlet and outlet piping on HS Series Fan or leaks may result.

NOTE: Do NOT solvent weld fittings to unit hubs.

2.3 VENT MUFFLER INSTALLATION

Install the muffler assembly in the selected location in the outlet ducting. Solvent weld all connections. The muffler is normally installed above the roofline at the end of the vent pipe.

2.4 OPERATION CHECKS & ANNUAL SYSTEM MAINTENANCE

_____ **Verify** all connections are tight and **leak-free**.

_____ **Ensure** the HS Series Fan and all ducting is secure and vibration-free.

_____ **Verify** system vacuum pressure with Magnehelic. **Ensure** vacuum pressure is within normal operating range and **less than** the maximum recommended as shown below:

HS2000 14" WC
HS3000 21" WC
HS5000 35" WC

(Above are based on sea-level operation, at higher altitudes reduce above by about 4% per 1000 Feet.)
If these are exceeded, increase number of suction points.

_____ **Verify Radon levels** by testing to EPA Protocol and applicable testing standards.

Addendum

Product Specifications

Model	Maximum Static Suction	Recommended Maximum Static Suction	Typical CFM vs Static Suction WC (Recommended Operating Range)						Power* Watts @ 115VAC
			0"	10"	15"	20"	25"	35"	
HS2000	16"	14"	62	40	23	-	-	-	153-314
HS3000	24"	21"	39	30	25	19	-	-	120-250
HS5000	41"	35"	43	35	32	28	24	18	349-381
HS2000E	16"	14"	62	40	23	-	-	-	153-314
HS3000E	24"	21"	39	30	25	19	-	-	120-250
HS5000E	41"	35"	43	35	32	28	24	18	349-381

**Power consumption varies with actual load conditions*

Inlet: 3.0" PVC

Outlet: 2.0" PVC

Mounting: Brackets for vertical mount

Weight: Approximately 18 lbs

Size: Approximately 15"W x 13"H x 8"D

Minimum recommended inlet ducting (greater diameter may always be used):

HS3000, HS5000 --- 2.0" PVC Pipe

HS2000 --- Main feeder line of 3.0" or greater PVC Pipe

Branch lines (if 3 or more) may be 2.0" PVC Pipe

Outlet ducting: 2.0" PVC

Storage Temperature Range: 32°F-100°F

Thermal Cutout: 194°F +/- 9°F (90°C +/- 5°C)

Locked rotor protection

Internal condensate bypass

IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the RadonAway® HS Series Fan for shipping damage within 15 days of receipt. **Notify RadonAway® of any damages immediately.** RadonAway® is not responsible for damages incurred during shipping.

There are no user serviceable parts inside the fan. **Do not attempt to open the housing.** Return unit to factory for service.

Install the HS Series Fan in accordance with all EPA standard practices, and state and local building codes and state regulations.

Provide a copy of this instruction or comparable radon system and testing information to the building occupants after completing system installation.

Warranty

RadonAway® warrants that the HS Series Fan (the "Fan") will be free from defects in materials and workmanship for a period of 90 days from the date of purchase (the "Warranty Term").

RadonAway® will repair or replace any Fan which fails due to defects in materials or workmanship during the Warranty Term. The Fan must be returned (at Owner's cost) to the RadonAway® factory. Any Fan returned to the factory will be discarded unless the Owner provides specific instructions along with the Fan when it is returned regardless of whether or not the Fan is actually replaced under this warranty. Proof of purchase must be supplied upon request for service under this Warranty.

This Warranty is contingent on installation of the Fan in accordance with the instructions provided. This Warranty does not apply where any repairs or alterations have been made or attempted by others, or if the unit has been abused or misused. Warranty does not cover damage in shipment unless the damage is due to the negligence of RadonAway®.

1 YEAR EXTENDED WARRANTY WITH PROFESSIONAL INSTALLATION

RadonAway® will extend the Warranty Term of the fan to twelve (12) months from date of installation or fifteen (15) months from the date of manufacture, whichever is sooner, if the Fan is installed in a professionally designed and professionally installed active soil depressurization system or installed as a replacement fan in a professionally designed and professionally installed active soil depressurization system. Proof of purchase and/or proof of professional installation may be required for service under this warranty. RadonAway® is not responsible for installation, removal or delivery costs associated with this Warranty.

EXCEPT AS STATED ABOVE, THE HS SERIES FAN IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL RADONAWAY® BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR RELATING TO, THE FAN OR THE PERFORMANCE THEREOF. RADONAWAY'S AGGREGATE LIABILITY HEREUNDER SHALL NOT IN ANY EVENT EXCEED THE AMOUNT OF THE PURCHASE PRICE OF SAID PRODUCT. THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT, TO THE EXTENT THE SAME DOES NOT MEET WITH RADONAWAY'S WARRANTY AS PROVIDED ABOVE.

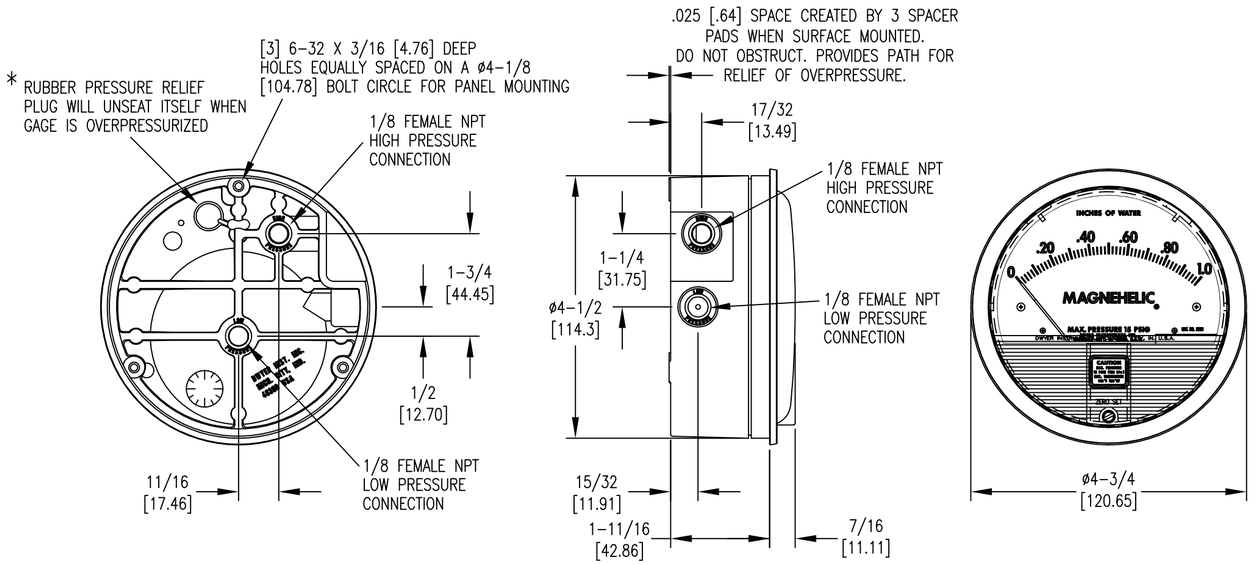
For service under this Warranty, contact RadonAway® for a Return Material Authorization (RMA) Number and shipping information. No returns can be accepted without an RMA. If factory return is required, the customer assumes all shipping costs to and from factory.

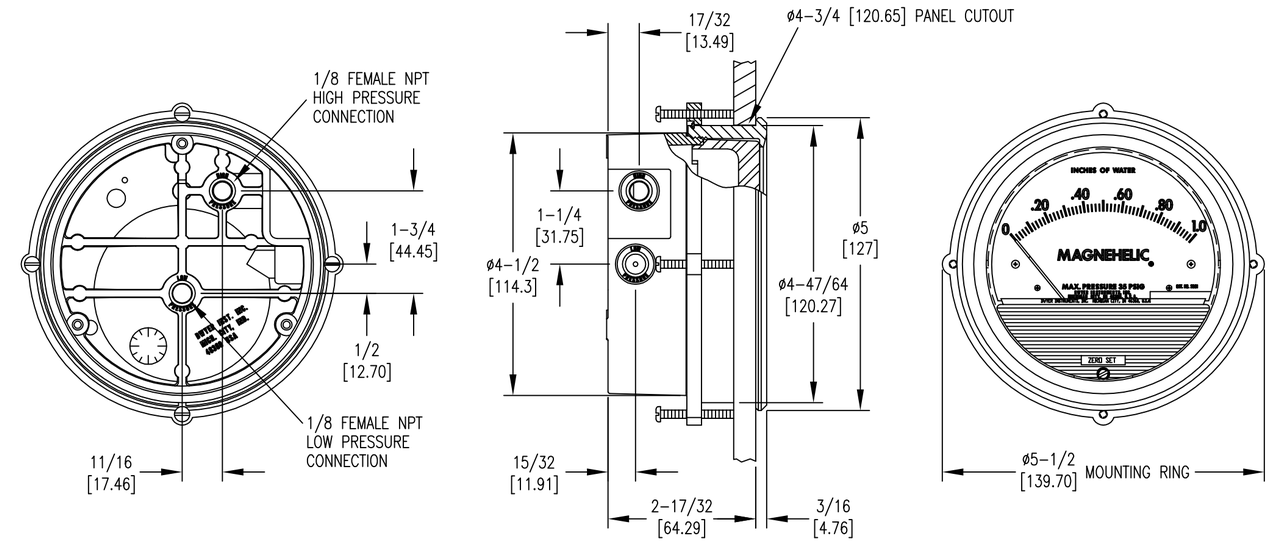
RadonAway®
3 Saber Way
Ward Hill, MA 01835 USA
TEL (978) 521-3703
FAX (978) 521-3964
Email to: Returns@RadonAway.com

Record the following information for your records:

Serial No. _____

Purchase Date: _____





CD = CRITICAL DIMENSION

STANDARD TOLERANCES UNLESS NOTED:
ALL DECIMAL DIMENSIONS ± .005
ALL ANGLES ± 1°

SCALE 1:2

NO.	CHANGES	BY/DATE

DATE
DWN BY
CHKD
APPD

NAME: 2000 MAGNEHELIC ARTWORK (FOR REFERENCE ONLY)

ACAD2002

MATERIAL

FINISH

DWYER INSTRUMENTS, INC.
MICHIGAN CITY, INDIANA 46360 U.S.A.

FR. NO. 12-700060-05

NOTICE: This drawing and the principles and elements of design embodied therein are the exclusive property of DWYER INSTRUMENTS, INC. and are not to be communicated, disclosed, reproduced or used except as previously authorized in writing by such corporation and must not be submitted to outside parties for examination without the written consent of said corporation.

ATTACHMENT 3

Continuing Obligations Inspection and Maintenance Log

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Continuing Obligations Inspection and Maintenance Log

Form 4400-305 (2/14)

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: Laundry Land

BRRTS No.: 02-13-552183

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?
		☐ monitoring well ☐ cover/barrier ☒ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☒ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☒ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☒ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☒ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N
		☐ monitoring well ☐ cover/barrier ☒ vapor mitigation system ☐ other:			○ Y ○ N	○ Y ○ N

Continuing Obligations Inspection and Maintenance Log

{Click to Add/Edit Image}	Date added:
Title:	

{Click to Add/Edit Image}	Date added:
Title:	