**From:** Oelkers, Eric <EOelkers@scsengineers.com>

**Sent:** Friday, March 22, 2024 6:12 PM

**To:** Koepke, Cynthia L - DNR

**Cc:** Langdon, Robert; Radunzel, Ashley

**Subject:** RE: Hartmeyer, BRRTS 03-13-000053 and 02-13-580328

Attachments: 240322\_Koepke\_Vapor Sampling\_final.pdf

Follow Up Flag: Follow up Flag Status: Flagged

Categories: for tracking

CAUTION: This email originated from outside the organization.

Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Cindy,

The Hartmeyer sub-slab vapor sampling is attached for your review.

Regards,

Eric Oelkers, PG\*
Senior Project Manager / Hydrogeologist
SCS Engineers
2830 Dairy Drive
Madison, WI 53718-6751 USA
608-216-7341 (W)
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\*Licensed in WI

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www.scsengineers.com

From: Koepke, Cynthia L - DNR < Cynthia. Koepke@wisconsin.gov>

**Sent:** Friday, January 5, 2024 12:33 PM

To: Oelkers, Eric <EOelkers@scsengineers.com>

**Subject:** RE: Hartmeyer, BRRTS 03-13-000053 and 02-13-580328

This email originated from outside of SCS Engineers. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello, Eric,

Apologies for the late response.

DNR approves your request for an extension to submit the vapor sampling plan. You may start counting the three months today.

#### Thanks!

#### We are committed to service excellence.

Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

#### Cindy Koepke, P.G.

[she/her/hers]

Phone: 608-219-2181

Email: cynthia.koepke@wisconsin.gov

From: Oelkers, Eric < <u>EOelkers@scsengineers.com</u>> Sent: Tuesday, December 19, 2023 11:52 AM

**To:** Koepke, Cynthia L - DNR < <u>Cynthia.Koepke@wisconsin.gov</u>> **Subject:** Hartmeyer, BRRTS 03-13-000053 and 02-13-580328

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#### Hi Cindy,

The "Approval to Manage Contaminated Soil under Wis. Admin. Code NR 718.12" letter from DNR dated October 3, 2023 included the following condition:

7. As required by Wis. Admin. Code § NR 716.11(3)(a) and (5)(g), submit a sub-slab vapor sampling plan to DNR within 90 days of the date of this approval. The sampling plan should follow DNR's RR-800 guidance (Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin, January 2018).

As far as I know LAC has not yet closed on the property. SCS is still working with the project team on the design details of the vapor mitigation system and the related plan for sub-slab vapor sampling; however, we are not at the point where we are able submit a vapor sampling plan to DNR by the "required" date of January 1, 2024. We intend to submit the vapor sampling plan before the floor slabs are constructed. We would like to request an extension time of three months (90 days) to submit the plan to DNR, with the understanding that the plan will be submitted in advance of placement of the floor slabs.

#### Regards,

Eric Oelkers, PG\*
Senior Project Manager / Hydrogeologist
SCS Engineers
2830 Dairy Drive

Madison, WI 53718-6751 USA 608-216-7341 (W) 608-444-3934 (C) eoelkers@scsengineers.com
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#### **Environmental Consultants & Contractors**

## SCS ENGINEERS

March 22, 2024 File No. 25222081.00

#### MEMORANDUM

TO: Cindy Koepke, Wisconsin Department of Natural Resources

FROM: Eric Oelkers

SUBJECT: Sub-Slab Vapor Sampling Plan, Hartmeyer Property

BRRTS 03-13-000053 and 02-13-580328

The Wisconsin Department of Natural Resources' (WDNR's) October 3, 2023 approval letter, sent in response to SCS Engineers' submittal of a Materials Management Plan (MMP) for the Hartmeyer Property in July 2023 included a requirement for a sub-slab vapor sampling plan. SCS requested and was granted a 90-day extension of time for submittal of the vapor sampling plan, to April 4, 2024. This memo outlines the proposed sub-slab vapor sampling approach.

### **Project Description**

As indicated in the MMP, the current development project includes two 6-story buildings: the northern building, the "Victoria," includes approximately 250 senior living apartments, common areas, and above grade parking; the southern building, the "View" includes approximately 300 family housing apartments, three courtyards, and above grade parking. Both buildings include slab on grade construction with engineered deep foundations. The finished ground floor elevation of each building will be 857 feet above mean sea level (amsl), which is approximately 1 to 6 feet higher than the pre-development site elevations. The building designs incorporate a minimum of 6 inches of clear gravel below the floor slab for drainage and vapor venting, a vapor barrier below the floor slab, and venting pipes installed in the gravel connected to risers terminating above the roof of the building.

## Vapor Screening (from MMP Document)

No vapor testing has been performed to date because there are no occupied buildings on the Property. WDNR's January 2018 guidance document RR800 "Addressing Vapor Intrusion at Remediation and Redevelopment Sites in Wisconsin" indicates that vapor intrusion for petroleum contaminants can be ruled out if aerated soil conditions can be confirmed in the zone within 5 feet horizontally and vertically beneath a building. The proposed building's first floor elevations are 857 feet amsl, and the water table has recently been measured at 848.4 to 850.6 feet amsl. The degree of aeration of the existing soil has not been evaluated. The engineered fill required to establish base grades below the building floors will be aerated but will typically not exceed 5 feet in thickness.



RR800 lists the following screening criteria, where vapor investigation is recommended for petroleum vapor intrusion if 5 feet of aerated soil is not confirmed:

- Building has less than 15-feet vertical separation or 30-feet horizontal separation from NAPL [non-aqueous phase liquid].
- Building has less than 5-feet of vertical separation from groundwater with benzene > 1 mg/L.
- Groundwater with concentrations above Wis. Admin. Code § NR 140 PAL has entered the building or is in contact with the building's foundation.
- Building has less than 5-foot (vertical (a) and horizontal) separation distance from
  petroleum contaminated soil with the potential for off-gassing. (Heavier end petroleum
  products (e.g. diesel or fuel oil) or heavily weathered light end distillates that no longer
  contain compounds that are detectable by TO-15 analysis are not likely to be a source of
  vapors.)
- Petroleum vapors are present in utilities that transect a petroleum source area.
- Petroleum odors are present in building near petroleum source area.

The absence of petroleum volatile organic compounds (PVOCs) greater than NR 140 enforcement standards in groundwater suggests that there is little potential for off gassing of volatile vapors; however, the following site conditions may fall into the screening criteria listed above:

- The initial aboveground storage tank investigation documented some fuel oil non-aqueous phase liquid (NAPL) on the property adjacent to the area of the 1989 fuel oil spill.
- The building foundation footing is intended to be placed above the water table; however, portions of the foundation system may extend below the water table, and petroleum contamination greater than NR 140 preventive action limits (PALs) may remain below the building footprints.

As a precautionary measure, vapor mitigation features have been incorporated into the building design.

#### **Vapor Sampling Approach**

The purpose of sub-slab vapor sampling is to identify whether volatile organic contaminants are present in the soil vapor below the ground floor slab in concentrations sufficient to require additional investigation or active mitigation measures. There were no occupied structures on the property prior to the start of the current redevelopment project; therefore, sub-slab sampling will be possible only after the floor slabs of the new buildings have been constructed.

Vapor sampling ports will be installed through the floor during or after placement of the concrete floor. The proposed locations are shown on the attached building floor plans. The View building has a larger residential footprint in contact with the ground and includes 11 sub-slab vapor sample

MEMORANDUM March 22, 2024 Page 3

locations. The Victoria has a smaller residential footprint on the ground floor and includes six sub-slab vapor sample locations. The proposed sub-slab vapor locations are situated in common or service areas adjacent to residential units to prevent the need to access private residences if additional sampling is required after the buildings are occupied. Vapor sampling ports are not located in the parking areas.

At least one round of sub-slab vapor sampling is planned for each building after the concrete has cured for a minimum of 2 weeks. Samples will be collected passively over a period of approximately 10 days using Waterloo Membrane Sampler (WMS) capsules temporarily sealed into the sub-slab vapor sampling ports. The deployment of the WMS capsules is described in the attached Standard Operating Procedure (SOP).

The sub-slab samples will be submitted to Eurofins Air Toxics laboratory in Folsom, California for volatile organic compound (VOC) analysis via method TO-17. The anticipated parameter list and reporting limits are summarized in the attached table.

Following receipt of the laboratory analyses, the results will be compiled in a table with the corresponding vapor risk screening levels. The tabulated results will be provided to WDNR with updated figures showing the sample locations and recommendations for additional sampling or mitigation measures, if necessary.

Enclosures: The View Sub-Slab Vapor Sample Locations

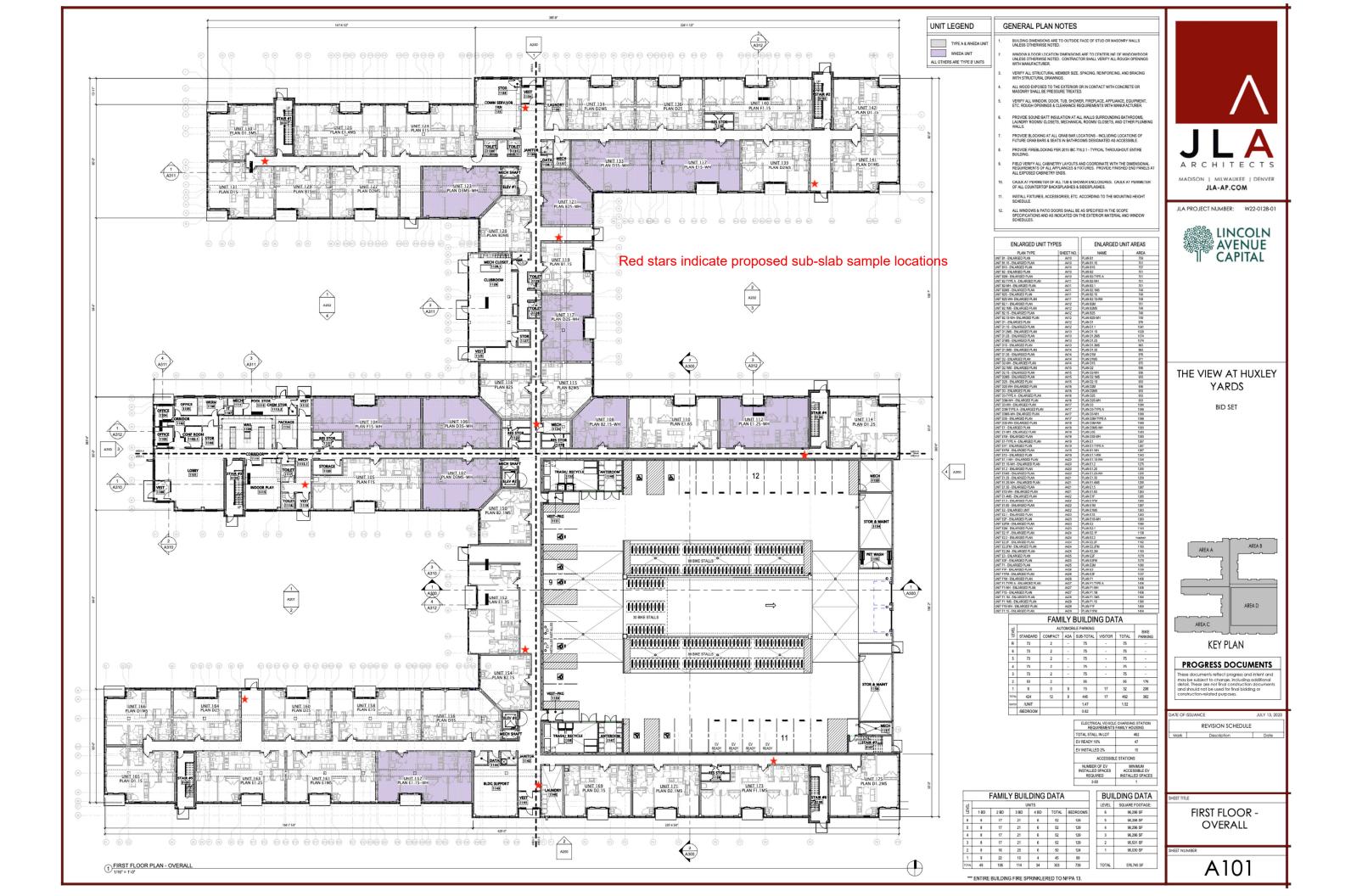
The Victoria Sub-Slab Vapor Sample Locations

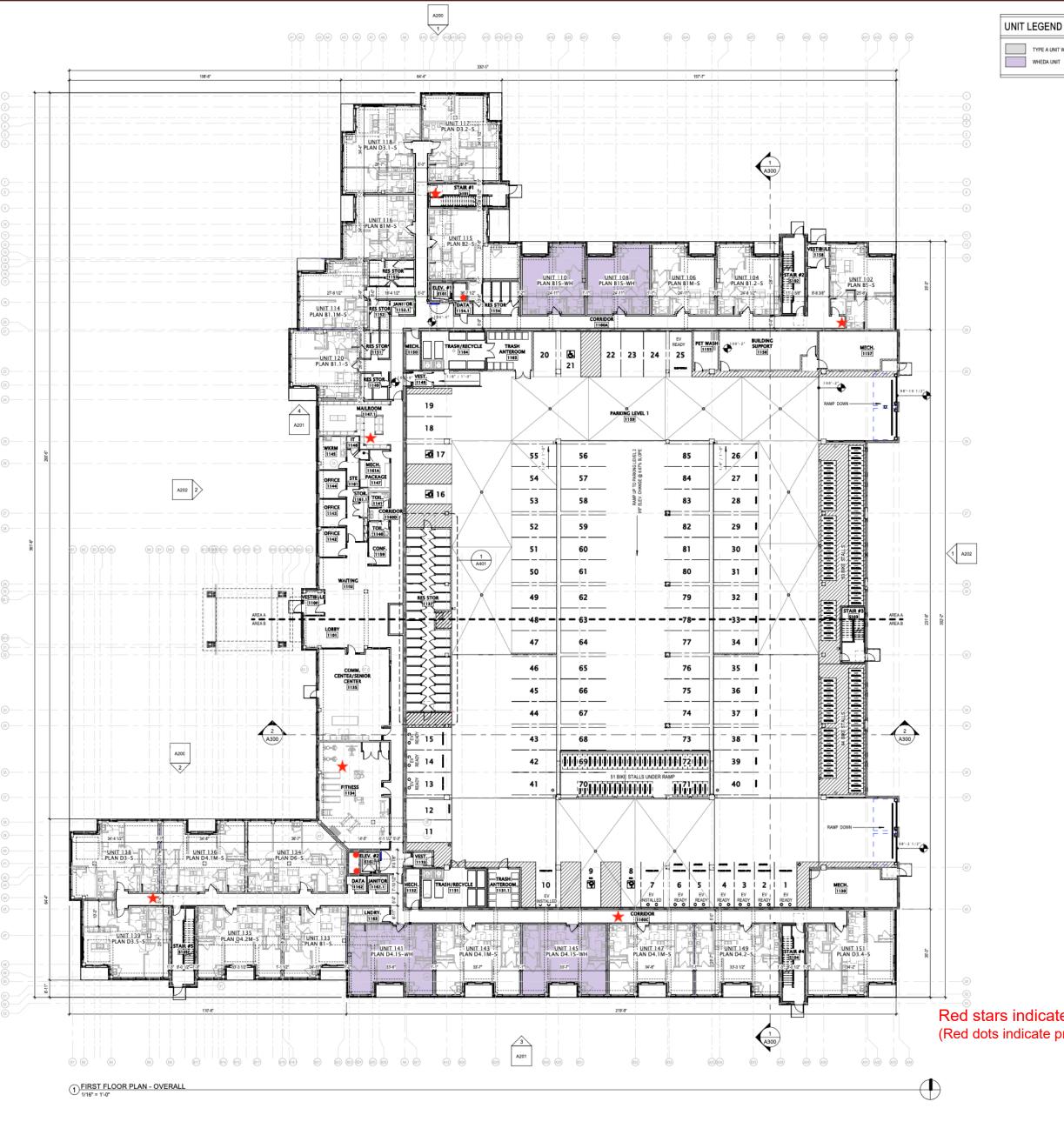
Vapor Capsule SOP

WMS Parameter List and Reporting Limits

EO/AJR/REL

I:\25222081.00\Deliverables\Vapor Sampling Plan\240319\_Koepke\_Vapor Sampling\_Draft.docx





#### GENERAL NOTES - FLOOR PLANS

TYPE A UNIT WHEDA UNIT

- INTERIOR DIMENSIONS ARE TO FACE OF STUD OR CONCRETE MASONRY UNIT WALLS UNLESS OTHERWISE NOTED.

- FURR OUT UNIT DEMISING WALLS AS REQUIRED TO ALIGN WITH EXTERIOR WALL FACES

- 1	16. PROVIDE 3/4" FIRE-RETARDANT TREATED PLYWOOD AS BACKING PANELS FOR ELECTRICAL EQUIPMENT
	INSTALL AT 1'-0" AFF TO FINISHED CEILING. PAINT PLYWOOD TO MATCH ADJACENT WALL FINISH.
- 1	COORDINATE FINAL SIZE AND LOCATION WITH DESIGN-BUILD ELECTRICAL CONTRACTOR.
- 1	COOKDINATE FINAL SIZE AND LOCATION WITH DESIGN-BUILD ELECTRICAL CONTRACTOR.

ENLARGED UNIT TYPES		UNIT AREA MATRIX		
PLAN TYPE	SHEET NO.	NAME	AREA	
JNIT B1 - ENLARGED PLAN	A410	PLAN B1	697	
JNIT B1-WH - ENLARGED PLAN - WHEDA UNIT	A410 A410	PLAN B1-S	694	
JNIT B1M - ENLARGED PLAN	A410	PLAN B1-WH	697	
UNIT B1M-ENCORGED PLAN - WHEDA UNIT	A410	PLAN B1.1	731	
JNIT B1.1 - ENLARGED PLAN - WHEDA ON I	A411	PLAN B1.1-S	725	
JNIT B1.1M - ENLARGED PLAN	A411	PLAN B1.1M	731	
JNIT B1MS - ENLARGED PLAN	A411	PLAN B1.1M-S	725	
JNIT B1S - ENLARGED PLAN	A411	PLAN B1.2-S	685	
JNIT B1S-WH-ENLARGED PLAN - WHEDA UNIT	A411	PLAN B1.3	683	
UNIT B1.1MS - ENLARGED PLAN	A412	PLAN B1.3M	683	
JNIT B1.1S - ENLARGED PLAN	A412	PLAN B1M	697	
JNIT B1.2S - ENLARGED PLAN	A412	PLAN B1M-S	694	
JNIT B1.3 - ENLARGED PLAN	A412	PLAN B1M-WH	697	
JNIT B1.3M - ENLARGED PLAN	A412	PLAN B1S-WH	694	
JNIT B2 - ENLARGED PLAN	A413	PLAN B2	876 881	
JNIT B2.2 - ENLARGED PLAN	A413	PLAN B2-S PLAN B2-2	968	
JNIT B2:2M - ENLARGED PLAN	A413	1 D 11 DE S	510	
JNIT B2S - ENLARGED PLAN	A413	PLAN B2.2M PLAN B3.WH	968	
JNIT B3 - TYPE A - ENLARGED PLAN - WHEDA UNIT	A414	1 5 41 50 1111	797	
UNIT B3-WH - ENLARGED PLAN - WHEDA UNIT	A414	PLAN B3.1-WH PLAN B3.1M-WH	797	
JNIT B3.1-WH - ENLARGED PLAN - WHEDA UNIT	A414	PLAN B3.1M-WH PLAN B3.2	748	
UNIT B3.1M-WH - ENLARGED PLAN - WHEDA UNIT	A414	PLAN B3.2 PLAN B3.3	748	
JNIT B3M - ENLARGED PLAN	A414	PLAN B3.3 PLAN B3A	797	
JNIT B3.2 - ENLARGED PLAN	A415	PLAN B3A PLAN B3M	797	
JNIT B3.3 - ENLARGED PLAN	A415	PLAN B5-S	813	
JNIT B5-S - ENLARGED PLAN	A415	PLAN D1	989	
JNIT D1 - ENLARGED PLAN	A415	PLAN D1M	989	
JNIT D1M - ENLARGED PLAN	A415	PLAN D3	1027	
JNIT D3 - ENLARGED PLAN	A416	PLAN D3-S	1018	
JNIT D3-S - ENLARGED PLAN	A416	PLAN D3.1	1014	
JNIT D3.1 - ENLARGED PLAN	A416	PLAN D3.1-S	1004	
JNIT D3M - ENLARGED PLAN	A416	PLAN D3.1-WH	1012	
JNIT D3.1S - ENLARGED PLAN	A417	PLAN D3.2-S	1011	
JNIT D3.28 - ENLARGED PLAN	A417	PLAN D3.2-TYPE A	1136	
JNIT D3.3-WH- ENLARGED PLAN - WHEDA UNIT	A417	PLAN D3.3-WH	1078	
JNIT D3.3F-WH - ENLARGED PLAN - WHEDA UNIT	A417	PLAN D3.3F-WH	1078	
JNIT D3.4S - ENLARGED PLAN	A418	PLAN D3.4-S	1069	
JNIT D3.58 - ENLARGED PLAN	A418	PLAN D3.5-S	1000	
JNIT D3.6 - ENLARGED PLAN	A418	PLAN D3.6	1025	
JNIT D3.7 - ENLARGED PLAN	A418	PLAN D3.7	1062	
JNIT D3.7M - ENLARGED PLAN	A419	PLAN D3.7M	1052	
JNIT D4.1 - ENLARGED PLAN	A419	PLAN D3M	1027	
JNIT D4.1-WH- ENLARGED PLAN - WHEDA UNIT	A419	PLAN D4.1	946	
JNIT D4.1F - ENLARGED PLAN	A419	PLAN D4.1-WH	946	
JNIT D4.1FM- ENLARGED PLAN	A420 A420	PLAN D4.1F	946	
JNIT D4.1M - ENLARGED PLAN	7-7-6-0	PLAN D4.1FM	946	
JNIT D4.1MS - ENLARGED PLAN	A420 A420	PLAN D4.1M	946	
JNIT D4.1S-WH - ENLARGED PLAN -WHEDA UNIT	77725	PLAN D4.1M-S	942	
JNIT D4.2 - ENLARGED PLAN JNIT D4.2M - ENLARGED PLAN	A421 A421	PLAN D4.1S-WH	943	
JNIT D4.2M - ENLARGED PLAN JNIT D4.2MS - ENLARGED PLAN	A421 A421	PLAN D4.2	989	
JNIT D4.2MS - ENLANGED PLAN JNIT D4.2S - ENLARGED PLAN	A421	PLAN D4.2-S	934	
JNIT D4.25 - ENLARGED PLAN JNIT D6 - ENLARGED PLAN	A421	PLAN D4.2M	989	
JNIT D6 - ENLARGED PLAN	A422	PLAN D4.2MS	934	
UNIT DES - ENLARGED PLAN	A422	PLAN D5	823	
UNIT E1-F - ENLARGED PLAN	A423	PLAN D6	1090	
JNIT E2 - ENLARGED PLAN	A423	PLAN D6-S	1087	
JNIT E3 - ENLARGED PLAN	A423	PLAN E1-F	1151	
UNIT ESF-WH - ENLARGED PLAN - WHEDA UNIT	A423	PLAN E2	1151	
JNIT E3.1-WH- ENLARGED PLAN - WHEDA UNIT	A424	PLAN E3	1135	
JNIT E3.2-TYPE A - ENLARGED PLAN - WHEDA UNIT	A424	PLAN E3.1-WH	1203	
		PLAN E3F-WH	1203	
JNIT E4 - ENLARGED PLAN	A424	PLAN E4	1137	

				PLAN E4-F			1137
_							
		SENI	OR	BUILDIN	NG DA	TA	
LEVEL		AUT	гомов	ILE PARKING			BIKE
鱼	STANDARD	COMPACT	ADA	SUB-TOTAL	VISITOR	TOTAL	PARKING
3	94	22	-	116	-	116	-
2	61	26	-	87		87	103
1	59	6	5	73	15	85	158
TOTAL	203	55	7	276	19	288	261
RATIO	/UNIT			1.06		1.14	
	BEDROOM			75			

ELECTRICAL VEHICLE CHARGING STATION REQUIREMENTS SENIOR HOUSING				
TOTAL STALL IN LOT 288				
EV READY 10%	29			
EV INSTALLED 2%	6			
ACCESSIBLE STATIONS				
NUMBER OF EV MINIMUM INSTALLED SPACES ASSESSIBLE EV REQUIRED INSTALLED SPACES				
2.50				

Red stars indicate proposed sub-slab sample locations (Red dots indicate proposed vent riser locations)

BUII	BUILDING DATA		
LEVEL	SQUARE FOOTAGE:		
6	58,182		
5	58,182		
4	58,182		
3	76,912		
2	76,319		
1	77,088		
TOTAL	404,865		

\*\*\*ENTIRE BUILDING FIRE SPRINKLERED TO NFPA 13

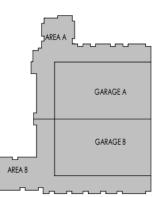


MADISON | MILWAUKEE | DENVER JLA-AP.COM JLA PROJECT NUMBER: W22-0128-02



THE VICTORIA AT **HUXLEY YARDS** 

BID SET



**KEY PLAN** 

PROGRESS DOCUMENTS

TE OF	ISSUANCE	JULY 13, 2023
	REVISION SCHEDULE	
Mark	Description	Date

FIRST FLOOR PLAN -**OVERALL** 

A101

# Standard Operating Procedure

## Installation of the Vapor Pin® Capsule

## **Scope & Purpose**

#### Scope

This standard operating procedure describes how to use the Vapor Pin® Capsule.

#### **Purpose**

The purpose of this procedure is to assure good quality control in field operations and uniformity between field personnel in the use of the Vapor Pin® Capsule. The Vapor Pin® Capsule is used to house the Waterloo Membrane Sampler (WMS™-VP) to passively collect sub-slab soil-gas.

## **Equipment Needed**

- Vapor Pin® Sampling Device
- Vapor Pin® Sleeve
- Vapor Pin® Cap
- Vapor Pin® Capsule
- Waterloo Membrane Sampler (WMS-VP) Kit
- Installation/Extraction Tool
- Rotary Hammer Drill
  - % Inch (16mm) diameter hammer bit
     1½ Inch (38mm) diameter hammer bit for flush mount applications

- ¾- Inch (19mm) diameter bottle brush
- Wet/Dry Vacuum with HEPA filter (optional)
- Dead Blow Hammer
- ¾" diameter closed cell foam rod to seal the hole prior to applying patching material
- VOC-free hole patching material (hydraulic cement) and a putty knife or trowel
  - This is for repairing the hole following the extraction of the Vapor Pin® Sampling Device

## How to House your Waterloo Membrane Sampler (WMSTM-VP)

- **1.** Assemble your Vapor Pin® Sampling Device as seen in (Figure 1).
- Figure 1

2. Screw the Vapor Pin® Capsule into the base of the Vapor Pin® Sampling Device as seen in (Figure 2).



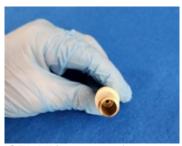


## **Standard Operating Procedure**

#### Installation of the Vapor Pin® Capsule

3. Your Vapor Pin® Capsule (VPC) cap will be shipped already unthreaded. Once you have the VPC screwed into your Vapor Pin® Sampling Device, inspect the interior of the Capsule for potential blockages (Figure 3).

Figure 3



- **4.** For the following instructions please handle the Waterloo Membrane Sampler (WMS™- VP) per manufactures specifications.
- 5. Remove your WMS™-VP from the packaging. Place the WMS™-VP vial into the Vapor Pin® Capsule. Make sure that the membrane end is facing the open end of the Vapor Pin® Capsule. Re-thread the Vapor Pin® Capsule cap to finger level tightness (Figures 4, 5 & 6).







6. Install your Vapor Pin® Sampling Device, with Vapor Pin® Capsule, into your Stick-Up/Flush-Mounted drilled hole (Figures 7 & 8). If Stick-Up Configuration use a cone to cover your pin and if Flush-Mounted Cover be sure to use either the Plastic Flush Mount Cover or Stainless Steel Secure Cover! NOTE: Prior to leaving site, be sure your Vapor Pin® has a Vapor Pin® Plastic Cap on. If extensions are required per sampling plan/slab thickness/state or local guidance, thread extensions onto the Vapor Pin® Sampling Device prior to threading on the Vapor Pin® Capsule.







Figure 7

Figure 8

Figure 9

7. Post passive sampling of two to three weeks, use the Installation/Extraction Tool to remove the Vapor Pin® Sampling Device (Figure 9). Use the Spanner tool first if you are using a Flush-Mounted configuration With the Stainless Steel Secure Cover. and retrieve your WMS™-VP to send it back off to the lab. Please follow all handing instructions, per manufactures specifications, when retrieving and packaging up the WMS™-VP.

Title: Passive SE Reporting Limit Calculator Form #: F3.34 rev. 1

## WMS -VP (Vapor Pin)

			tion	Dura
Total Durat	1	Minutes	Hours	Days
	] =	0	0	10

Total Duration (min)
14400

Full List Target Analytes	Reporting Limit (ug/m3)	Data Qualifier Flag
1,1,1-Trichloroethane	11.5	
1,1,2,2-Tetrachloroethane	2.0	
1,1,2-Trichloroethane	4.4	
1,1-Dichloroethane	11.8	
1,1-Dichloroethene	71.1	
1,2,4-Trimethylbenzene	1.2	
1,2-Dichlorobenzene	1.0	
1,2-Dichloroethane	5.7	
1,3,5-Trimethylbenzene	1.3	
1,3-Dichlorobenzene	1.1	
1,4-Dichlorobenzene	1.1	
2-Butanone (Methyl Ethyl Ketone)	22.6	
4-Methyl-2-pentanone	10.1	
Benzene	27.8	
Carbon Tetrachloride	9.7	
Chlorobenzene	2.6	
Chloroform	9.3	
Chloromethane (non-DoD)	171.6	
cis-1,2-Dichloroethene	7.6	
Cyclohexane	7.0	
Ethyl Benzene	2.0	
Heptane	6.0	
Hexane	44.5	
m,p-Xylene	1.8	
Methyl tert-butyl ether	12.2	
o-Xylene	2.1	
Propylbenzene	1.3	
Styrene	1.8	
Tetrachloroethene	2.7	
Toluene	3.2	
trans-1,2-Dichloroethene	24.9	
Trichloroethene	4.1	
Vinyl Chloride	138.9	
Naphthalene	1.6	

Compounds with Estimated SR will be flagged as "C" on the final report.