From: Langdon, Robert
To: Ackerman, Jeffrey A - DNR
Subject: Hub Pub VMS Maintenance Plan
Date: Tuesday, September 18, 2018 9:31:31 AM
Attachments: 180912_Hub Pub_Vapor Mitigation System Maintenance Plan.pdf

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Hi Jeff, here's a PDF copy of the Hub Pub vapor mitigation system maintenance plan for your records. We mailed the original to Rob Franz and you last week.

As always, it was a pleasure working with you. Thank you for the opportunity!

-Rob

Robert Langdon
Senior Hydrogeologist/Project Manager

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SCS ENGINEERS

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN
Hub Pub, 15672 State Highway 80, Richland Center, Wisconsin

September 12, 2018

Property Located at 15672 State Highway 80, Richland Center, Wisconsin 53581

Parcel ID # 014-3440-0410

BRRTS # 03-53-000559

INTRODUCTION

This document provides construction information and a 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 WDNR South Central office
- BRRTS on the Web (WDNR's internet-based database of contaminated sites) for the link to a PDF for site-specific information at the time of closure and on continuing obligations
- RR Sites Map/Database 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 Acura Services, LLC under supervision of SCS Engineers (SCS) and was started up on August 14, 2018. The VMS was designed to capture and remove petroleum vapor from a basement sump as required by the Wisconsin Department of Natural Resources (WDNR). The vapor appears to have originated from a leaking underground storage tank (LUST), which was located on the property at 15625 State Highway 80 (former Anderson Property, BRRTS # 03-53-000559).

System Design and Construction Documentation

The location of the VMS is shown on **Figure 1** and in photographs included in **Attachment A**. The VMS was constructed by installing an aeration system, sump lid, vacuum pick-up point, and blower to capture and remove vapor from an existing basement sump.

The sump aeration system includes two Marine Metal aerators with aeriation lines set inside ½-inch PVC pipes. The pipes were secured to the basement floor and extended to the bottom of the sump. A glass bead air stone was mounted to the end of each airline to diffuse air into the sump water and remove dissolved gases from the water.

A plastic dome sump lid, manufactured by Jackel, Inc., was placed over the sump and secured to wood blocks to leave an approximate 1-inch gap between the floor and the bottom of the lid. As required by the WDNR, this gap was designed to allow water (if present) to drain from the floor into the sump while capturing vapors over the sump and also ventilating the basement.

The sump pump discharge and vacuum pick-up point piping were sealed into the sump lid. The 3-inch PVC pick-up point piping was extended to the ceiling and out the side of the building where it was connected to a 120 volt AMG Spirit radon fan. The vent pipe for the fan was extended above the roof line outside the north end of the building. The PVC vent pipe and power line penetrations through the building wall were sealed.

A manometer was installed on the vertical section of the pick-up point over the sump to check for fan operation. The fan is capable of producing up to approximately 1-inch of water column (WC) vacuum. At start-up the fan was pulling approximately 0.3 inches WC, which equates to a flow rate of approximately 80 cubic feet per minute.

No changes were made to the sump pump discharge line. The sump pump discharges to the ground outside the northwest corner of the building.

System Maintenance

Minimal operator control or maintenance is required. There are no service requirements for the venting fan or aeriation pumps. The fan status is checked using the manometer. If the manometer displays greater than zero, the fan is functioning. The aeration pumps are checked by inspecting the sump water for bubbles. If there are bubbles emanating from both aeration lines the pumps are functioning.

Malfunctioning or damaged system components should be replaced as soon as possible, and any changes or repairs should be documented in the attached Continuing Obligations Inspection and Maintenance Log (**Attachment B**).

Inspections

The VMS should be inspected every 6 months or if petroleum odors are observed:

- Inspect manometer:
  - If manometer vacuum reads zero, check the circuit breaker and the switch on the fan motor to make sure fan has power.
  - If fan vacuum cannot be rectified contact SCS Engineers at (608) 224-2830.

- Inspect fan exhaust lines of fan exhaust, and remove any accumulated debris.
- Record manometer readings and document repairs to the VMS on Form 4400-305, Continuing Obligations Inspection and Maintenance Log (**Attachment B**).
- Inspect aeration system:
  - Replace aeration pump if the pump motor is not running. When operating, the pumps are audible, but flow will need to be confirmed by checking the sump water for bubbles.
  - To check for flow, disconnect power to sump pump and turn off the venting fan at the switch on the fan motor.
  - Disconnect sump pump discharge and vacuum pick-up point pipes at the rubber Fernco fittings on each pipe.
  - Remove sump lid and look for bubbles in the sump water from the two aeration lines. If there are not bubbles, remove the faulty aeration line and inspect the line and air stone for fouling. Replace lines or air stone as necessary.
  - If bubbles are not observed after the above steps are taken, contact SCS Engineers at (608) 224-2830.
  - Replace sump lid and reconnect sump and vacuum pick-up point lines.
  - Connect power to sump pump and turn the fan motor back on.
- 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

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:	Robert Franz 15672 State Highway 80 Richland Center, WI 53581 (847) 254-8567
Consultant:	Robert Langdon, SCS Engineers 2830 Dairy Drive Madison, WI 53718 (608) 224-2830
WDNR:	Jeff Ackerman 3911 Fish Hatchery Road Fitchburg, WI 53711 (608) 275-3323

LOCATION MAP

See **Figure 1** for a map of features to maintain.

PHOTOGRAPHS

Photographs are included in **Attachment A**.

INSPECTION LOG

An inspection log is included in **Attachment B**.

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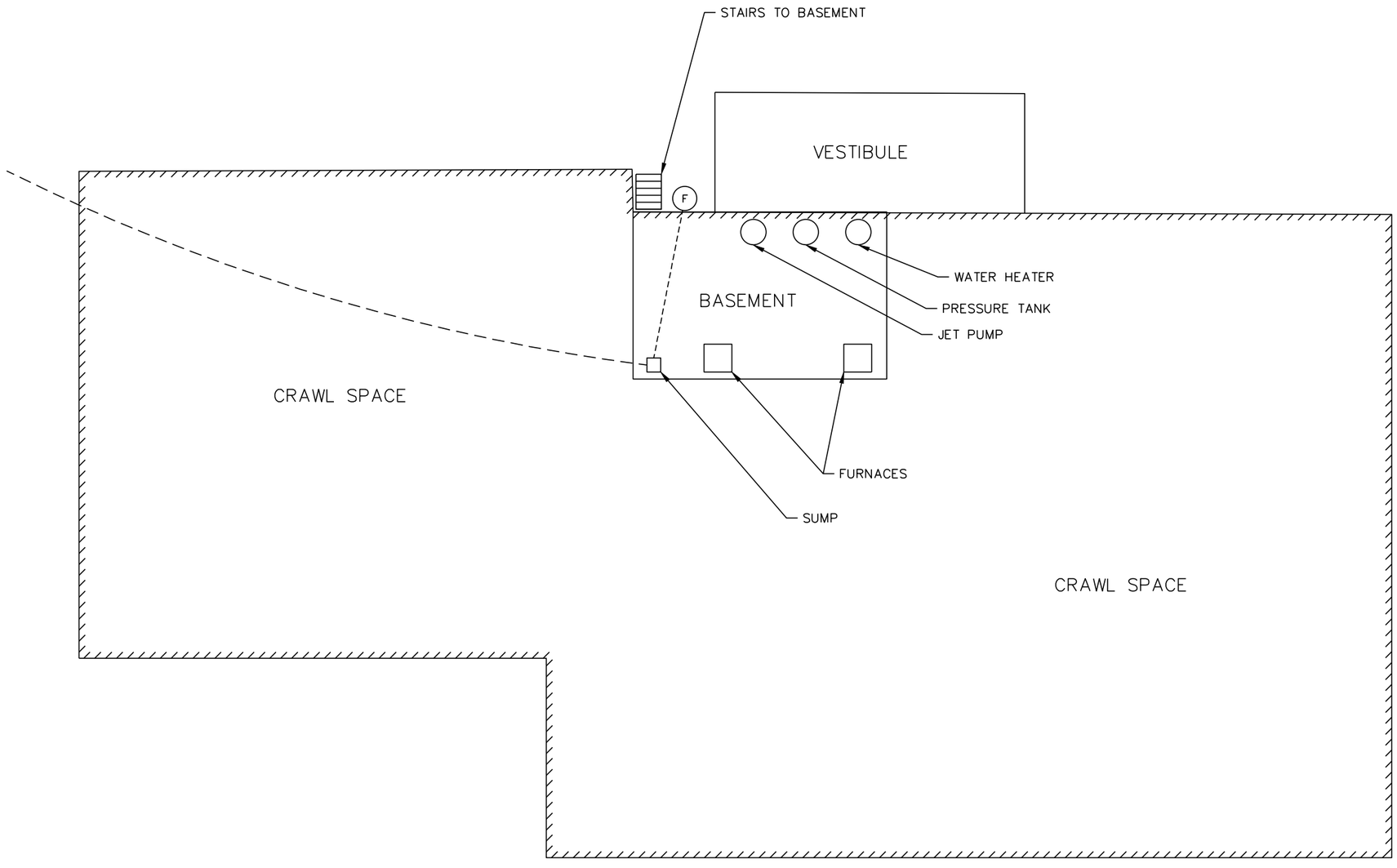

LEGEND

(F) MITIGATION SYSTEM FAN AND EXHAUST

-------- MITIGATION VENT LINE (APPROXIMATE LOCATION)

— — — — SUMP PUMP DISCHARGE LINE (APPROXIMATE LOCATION)

NOTE

SCALE IS APPROXIMATE

N

10 0 10

SCALE: 1" = 10'

PROJECT NO.	25218134.00	DRAWN BY:	BJM
DRAWN:	08/21/18	CHECKED BY:	REL
REVISED:	08/21/18	APPROVED BY:	REL, 08/27/18

ENGINEER

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

CLIENT

Wisconsin Department of Natural Resources

SITE

HUB PUB
15672 STATE HIGHWAY 80
RICHLAND CENTER, WI 53581

SITE PLAN

FIGURE
1

I:\25218134.00\Drawings\2_Site Plan.dwg, 8/27/2018 11:47:52 AM

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN

ATTACHMENT A

Photographs

Mitigation System Installation
Hub Pub, Richland Center, Wisconsin
SCS Engineers Project #25218134.00

Photo 1: Sump pit prior to installing mitigation system
Date: 7/18/2018

Photo 2: Sump pit with aeration system installed
Date: 8/14/2018

Mitigation System Installation
Hub Pub, Richland Center, Wisconsin
SCS Engineers Project #25218134.00

Photo 3: Sump lid with aeration pumps
Date: 8/14/2018

Photo 4: Pick-up point and piping
Date: 8/14/2018

Mitigation System Installation
Hub Pub, Richland Center, Wisconsin
SCS Engineers Project #25218134.00

Photo 5: Pick-up point manometer
Date: 8/14/2018

Photo 6: Fan and exhaust line
Date: 8/14/2018

VAPOR MITIGATION SYSTEM MAINTENANCE PLAN

ATTACHMENT B

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	BRRTS No.
Former Anderson Property - Hub Pub	03-53-000559

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

{Click to Add/Edit Image} Date added:

Title:

{Click to Add/Edit Image} Date added:

Title: