

VIMS Operations and Maintenance Plan Checklist
NCDEQ Brownfields Redevelopment Section
March 2026

The Brownfields Redevelopment Section (BRS) has generated this checklist to outline the minimum requirements and recommended format of an Operation & Maintenance Plan (O&M Plan) for a vapor intrusion mitigation system. Additional checklist information is required for Townhome Developments, see Attachment C. Note this checklist applies to both active and passive systems unless otherwise noted below.

General

- ☐ *Title Page* - Includes the title of the report, the Brownfield Property Name and Brownfields Project Number, property address, the date & revision number of the report.
- ☐ *Contact Page* - Contact information for the Developer/Property Owner, Engineer of Record, Brownfields Project Manager/Staff, and others as needed. Note that updated contact information shall be included in annual inspection notifications, template form provided as Attachment 1.
- ☐ *Site History/Background* – brief summary of site history, including contaminants of concern
- ☐ *Construction Details* – General summary of the of building(s) being mitigated, etc. And a brief note if additional buildings are present on-site not covered by this document.

VIMS Summary

- ☐ *Mitigation System* – Provide a description of the VIMS installed including:
 - ☐ Passive or active.
 - ☐ General details VIMS components such as risers, turbine/fan location(s), etc. Reference Appendix with As-Built Drawings.
- ☐ *Approvals*- include summary of VIMPs, VIMP Modifications, installation report(s), occupancy approval(s), and other relevant reports. Include report and approval dates. This will preferably be a summary table, example below.

Report Type	Report Title	Report Date
VIMP (include Mod and Rev #)		
Installation Report		
Occupancy Approval		
Other Relevant Reports		

Monitoring & Inspections

- ☐ *Pressure Monitoring*: If an active system, describe pressure monitoring procedures and frequency (additional details provided in Attachment 2)
- ☐ *Inspections*: Provide a summary of proposed VIMS inspections including:
 - ☐ Frequency.
 - ☐ Components to be inspected.
 - ☐ Requirements for demonstrating a suitably trained inspector. Note: DEQ BRS recognizes that appropriately trained staff not under the direct supervision/employment of a Professional Engineer can complete the VIMS inspections.
 - ☐ Notifications to DEQ BRS and Professional Engineer of record in the event that issues are

identified. Or NC Professional Engineer identified on the site contact list in Attachment 1.

☐ Schedule for submittal to DEQ BRS.

☐ Reference an appendix that includes a template checklist and site contact information (Attachment 1).

☐ *Monitoring*: If an analytical scope for sub-slab and/or indoor air sampling is detailed in the VIMP or another document, briefly summarize the monitoring scope and reference the report in which it is included. If this type of monitoring is not provided elsewhere, it can be included in the O&M Plan.

Guidelines for sampling requirements including parameters, principles, and policies as to field procedures, laboratory testing, and remedial or mitigation measures are (each as embodied in its most current version):

- the Guidelines of the Inactive Hazardous Sites Branch of DEQ's Superfund Section;
- the Division of Waste Management Vapor Intrusion Guidance;
- the Brownfields Redevelopment Section Minimum Site Assessment and Reporting Checklist;
- the Brownfields Redevelopment Section Vapor Intrusion Mitigation Design Checklist;
- the Division of Waste Management Minimum Mitigation and Sampling Requirements for Reuse;

Note that no disturbance or alteration of the slab within the existing building footprint(s) or sub- grade VIMS components may occur unless in accordance with a DEQ-approved EMP. This shall apply unless in the case of emergency circumstances for repair of underground infrastructure, in which case DEQ BRS shall be provided written notice no later than the next business day and any related assessment and remedial measures required by DEQ BRS shall be taken.

Figures

- ☐ Site Location Map.
- ☐ Site Plan with VIMS components (building locations, screens, trenching, sub-slab monitoring points, valve boxes, fan locations, etc.).
- ☐ Indoor Air and/or Sub-Slab Sample Location Map.
- ☐ Site Status- Indicate whether all VIMS activity has been completed on site. If applicable, highlight any remaining pour back areas onsite and ensure those areas are included in the VIMS inspection checklist.

Appendices

- ☐ *VIMS As-Built drawings* - (suction point/trench cross sections, sub-slab monitoring points, vertical and overhead risers, blower equipment layout within roof mounted enclosures, etc.). Note: As-Built drawings must be PE Sealed.
- ☐ *Representative Photographic Log* – Photos of completed system components should be included (fans, risers, telemetry, flow & vacuum gauges, sub-slab monitoring points, panels/vaults, components included in the VIMS inspection checklist, etc.).
- ☐ *VIMS Inspection Checklist*. The Inspection Checklist should include:
 - ☐ General Information – Brownfields Project Name and Brownfields Project Number, property Address, Inspector Name and Company, Date, Building Number (if applicable), etc.
 - ☐ Up to date contact information for the Developer/Property Owner, Engineer of Record, Brownfields Project Manager/Staff, and others as needed. Recommend using template form Attachment 1.
 - ☐ Building Condition – Condition of foundation and/or concrete slab, condition and location of any pour-back areas, condition of sub-slab monitoring points, any tenant up-fit work that involved concrete slab cuts since previous visit, etc.
 - ☐ VIMS Condition – Indicate if the VIMS(s) are operating, condition of any alarms or telemetry systems and if testing was performed, condition of exposed risers, riser labeling, protective screens, condensate collection if relevant, valve positions and changes made, etc. Include room on form for field notes where any changes or issues with the VIMS can be recorded (fans restarted or turned off, valves adjusted, any measurement changes following system adjustments etc.).
 - ☐ Notification to DEQ BRS within 7 days of any non-compliance issues identified,
 - ☐ Indicate if there is any major damage to the VIMS to where it no longer functions properly as outlined in the approved VIMP (e.g. damage to foundation, destruction of riser, etc.
 - ☐ Estimated time to when VIMS will be repaired and fully operational.
 - ☐ System Measurements - include a location for recording relevant system measurements (monitoring point vacuum influence, VIMS gauge and/or manometer readings, etc.).
- ☐ Annual Inspection Sign off – Include Statement from inspector *“By signing this form, the inspector certifies that they have received proper training in VIMS inspections and are familiar with VIMS components. The signor certifies that the information in this form is accurate and complete to the best of their knowledge.”*

Attachment 1 Site Contact Information

Brownfields Property Name: Click or tap here to enter text.

Brownfields Project Number: Click or tap here to enter text.

Address: Click or tap here to enter text.

Date Last Updated: Click or tap here to enter text.

Developer/Property Owner

Prospective Developer (PD): Click or tap here to enter text.

Contact Person: Click or tap here to enter text.

Phone Numbers: Office: Click or tap here to enter text.

Mobile: Click or tap here to enter text.

Email: Click or tap here to enter text.

Project's Engineer of Record*

Engineer of Record (EoR): Click or tap here to enter text.

Contact Person: Click or tap here to enter text.

Phone Numbers: Office: Click or tap here to enter text.

Mobile: Click or tap here to enter text.

Email: Click or tap here to enter text.

* Or NC Professional Engineer associated with the project currently

BRS Project Manager

BRS Project Manager: Click or tap here to enter text.

Contact Person: Click or tap here to enter text.

Phone Numbers: Office: Click or tap here to enter text.

Mobile: Click or tap here to enter text.

Email: Click or tap here to enter text.

Property Management Representative

Property Management Company: Click or tap here to enter text.

Contact Person: Click or tap here to enter text.

Phone Numbers: Office: Click or tap here to enter text.

Mobile: Click or tap here to enter text.

Email: Click or tap here to enter text.

Annual VIMS Inspector

VIMS Inspector: Click or tap here to enter text.

Trained by: Click or tap here to enter text.

Contact Person: Click or tap here to enter text.

Phone Numbers: Office: Click or tap here to enter text.

Mobile: Click or tap here to enter text.

Email: Click or tap here to enter text.

Attachment 2

Active System Depressurization Pressure Monitoring Requirements

Minimum pressure thresholds for active mitigation systems are outlined in the *Vapor Intrusion Mitigation System Design Submittal Requirements*. Pressure monitoring should include at a minimum the following:

- Year 1: Pressure readings collected monthly, submitted quarterly to DEQ
- Years 2-3: Pressure readings collected quarterly, submitted annually to DEQ
- Years 4+: Pressure readings collected semi-annually, submitted annually to DEQ, **provided that:**
 - Minimum of two years quarterly pressure monitoring demonstrates seasonably consistent and sufficient sub-slab vacuum
 - Functional Alarms for VIMS vacuum risers are present
 - Post-occupancy sampling in accordance with the DEQ DWM VI Matrix and/or VIMP demonstrating sub-slab/indoor air sampling that does not present a risk to site occupants
 - Approved O&M Plan in place
 - Inspections are being conducted as outlined in the O&M Plan

Please note, the requirements above do not apply to Townhomes, which follow the *Brownfields Minimum Requirement for Townhome Developments (May 2020)*.

ATTACHMENT 3
DEQ Brownfields Redevelopment Section
VIMS O&M Approval Signature Page

To be completed by Development Team and returned to DEQ Brownfields for review & signature. All BRS guidance for sample collection and related methodologies shall be followed, in addition to all applicable state and federal requirements.

Brownfields Project Name: Click or tap here to enter text.

Brownfields Project Number: Click or tap here to enter text.

O&M Plan Title: Click or tap here to enter text.

Date: Click or tap here to enter text.

Revision Number: Click or tap here to enter text.

Be advised that this approval from DEQ Brownfields does not waive any applicable requirement to obtain any necessary permits, licenses, or certifications for the above listed activities nor does it waive any requirement to comply with applicable law for such activities.

Prospective Developer (PD): Click or tap here to enter text.

Contact Person: Click or tap here to enter text.

Phone Numbers: Office: Click or tap here to enter text.

Mobile: Click or tap here to enter text.

Email: Click or tap here to enter text.

Property Owner (if different from above): Click or tap here to enter text.

Contact Person: Click or tap here to enter text.

Phone Numbers: Office: Click or tap here to enter text.

Mobile: Click or tap here to enter text.

Email: Click or tap here to enter text.

Environmental Consultant: Click or tap here to enter text.

Contact Person: Click or tap here to enter text.

Phone Numbers: Office: Click or tap here to enter text.

Mobile: Click or tap here to enter text.

Email: Click or tap here to enter text.

Consultant Signature:

Consultant: Click or tap here to enter text.

Printed Name/Title/Company: Click or tap here to enter text.

Place PG/PE Seal Above

Date Click or tap to enter a date.

Brownfields Project Manager: Click or tap here to enter text.

Phone Numbers: Office: Click or tap here to enter text.

Mobile: Click or tap here to enter text.

Email: Click or tap here to enter text.

Signature:

Brownfields Project Manager: Click or tap here to enter text.

Date Click or tap to enter a date.