

Remediation and Redevelopment Program

Issues & Trends 2015

June 3, 2015
12:00 p.m. – 1:00 p.m.

Dial: 1-855-947-8255
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Questions will be taken during the presentation or
can be submitted to DNRRRComments@wisconsin.gov



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DNR Case Closure: Vapor Intrusion Continuing Obligations

Introducing New Guidance Documents

Continuing Obligations (CO)

- NR 726.15 lists 13 continuing obligations (CO) that may be imposed on a property
 - CO usually imposed on a property at the time of closure
 - CO may be imposed at the time of Remedial Action Plan (RAP) approval (NR 722.15(d)5)

Current DNR CO Guidance

- RR-606, Guidance for case closure and requirements for managing continuing obligations
- RR-819, Continuing obligations for environmental protection: responsibilities for Wisconsin property owners
- Other forms and template letters for notification, inspection/maintenance, etc.

Goals of Vapor Intrusion CO Guidance

- Interpret NR 726.15(2)(h) through (L)
- Clear expectations for Responsible Parties, consultants, property owners and DNR staff regarding future CO that may apply to properties
- Consistent application of CO across the state

When are two documents better than one?

- External guidance document
 - RR-042, DNR Case Closure Continuing Obligations: Vapor Intrusion
- Internal DNR guidance document
 - RR-5474, Vapor Intrusion Continuing Obligations Applied in DNR Closure Approvals

3. Continuing Obligations: Situations where sites, including all affected properties and rights-of-way (ROWs), are included on the DNR's GIS Registry. In certain situations, maintenance plans are also required, and must be included in Attachment D.

Directions: For each of the 3 property types below, check all situations that apply to this closure request.

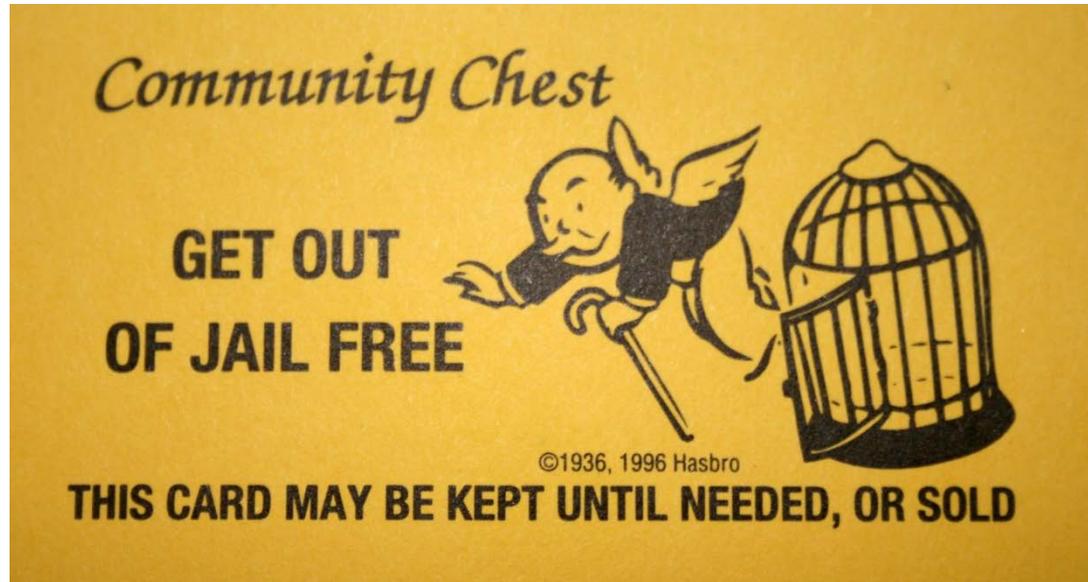
(NOTE: Monitoring wells to be transferred to another site are addressed in Attachment E.)

This situation applies to the following property or Right of Way (ROW):			Case Closure - GIS Registry Form 4400-202 Case Closure Situation - Continuing Obligation Inclusion on the GIS Registry is Required (ii. - xiv.)	Maintenance Plan Required	
Property Type:					
Source Property	Affected Property (Off-Source)	ROW			
i.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None of the following situations apply to this case closure request.	NA
ii.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residual groundwater contamination exceeds ch. NR 140 ESSs.	NA
iii.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residual soil contamination exceeds ch. NR 720 RCLs.	NA
iv.				Monitoring Wells Remain:	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Not Abandoned (filled and sealed)	NA
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	• Continued Monitoring (requested or required)	Yes
v.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cover/Barrier/Engineered Cover or Control for (soil) direct contact pathways (includes vapor barriers)	Yes
vi.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cover/Barrier/Engineered Cover or Control for (soil) groundwater infiltration pathway	Yes
vii.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Structural Impediment: impedes completion of investigation or remedial action (not as a performance standard cover)	NA
viii.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Residual soil contamination meets NR 720 industrial soil RCLs, land use is classified as industrial	NA
ix.	<input type="checkbox"/>	<input type="checkbox"/>	NA	Vapor Mitigation System (VMS) required due to exceedances of vapor risk screening levels or other health based concern	Yes
x.	<input type="checkbox"/>	<input type="checkbox"/>	NA	Vapor: Dewatering System needed for VMS to work effectively	Yes
xi.	<input type="checkbox"/>	<input type="checkbox"/>	NA	Vapor: Compounds of Concern in use: full vapor assessment could not be completed	NA
xii.	<input type="checkbox"/>	<input type="checkbox"/>	NA	Vapor: Commercial/industrial exposure assumptions used.	NA
xiii.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vapor: Residual volatile contamination poses future risk of vapor intrusion	NA

Situation ix. VMS required

- If a system must operate and/or be maintained after site closure in order to interrupt or mitigate the vapor pathway, then NR 726.(2)(h) requires a CO

VMS Conditional Obligation is **NOT** a



NR 722.09(2)(d)1. active remedial actions shall be taken

NR 726.05(8)(b)1. remedial action has reduced mass and concentration of VOCs to the extent practicable

NR 726.05(4)(e) must document that remaining contamination is not likely to cause exceedance of a VAL

Closure Conditions, Situation ix

- VMS operated until no longer needed
- Performance of maintenance
- O&M Plan available to occupants
- 45 day notification prior to changing use of VMS
- Maintenance of structural features
- O&M logs
- Post-closure submittal of logs, if required

Situation x. Dewatering System

- NR 736.15(2)(j) requires a CO when dewatering is necessary to allow a VMS to operate.
- This CO is always used with Situation ix.
- Discharge of contaminated water

Closure Conditions, Situation x

- Description of the specific hydrogeologic conditions requiring the condition
- O&M of the water control system
- 45 day notification of the DNR prior to changes to the system
- Requirements to maintain wastewater discharge requirements/permits

Situation xi. Compounds of Concern in Use

- NR 726.15(2)(i) states that the DNR may restrict the use or occupancy of a property where compounds of concern are in use to ensure closure will be protective.
- A VMS may be required at these properties

Closure Conditions, Situation xi

- Restriction on occupancy to current use
- 45 day notification to DNR prior to change in land use
- Evaluation of the VI pathway required prior to changing use to residential
- Description of the type and location of residual contamination

Situation xii.

Commercial/Industrial Exposure

- NR 726.15(2)(k) requires restricted use or occupancy at properties where commercial/industrial exposure assumptions are applied
- Document exposure assumptions used to assess VI pathway and current land use of property

Closure Conditions, Situation xii

- Exposure assumptions upon which closure based
- Restriction in occupancy or use
- 45 day notification if land use changes to residential setting
- Additional VI pathway assessment may be needed for a residential setting

Situation xiii. Future Risk of VI

- NR 726.15(2)(L) states where residual VOCs exist and no building is present, DNR may require measures to eliminate or control VI into a future building
- Future building = new building or expansion of existing building where the foundation is near or above residual contamination

Situation xiii. Future Risk of VI

- CO states that vapor control technology will be designed into the future building prior to construction

UNLESS

- Risk of VI is assessed (prior to building construction) and the DNR agrees that VI control technologies are not needed

Situation xiii. Future Risk of VI

- Future VMS expected to actively remove vapors. Passive VI systems should be designed for conversion to active systems
- Undeveloped properties adjacent to vapor source
 - SI should establish whether vapor migration would be a risk to a future building on an adjacent property

Triggers to Apply Vapor Intrusion Continuing Obligations

(Numbers in this table are only recommendations. All decisions for applying continuing obligations are made on a site-by-site basis.)

Continuing Obligation Options Case Closure-GIS Registry Form 4400-202	Criteria for Application of VI Options	
	Chlorinated VOCs	Petroleum VOCs
(ix) O&M of VMS needed to protect VI pathway	Sub-slab > VSRL	Sub-slab: BETX, N, MTBE, TMBs > VRSL
(x) Hydrologic control for VMS to operate effectively	Sub-slab/sump air > VRSL Water table intersects foundation	Sub-slab/sump air BETX, N, MTBE, TMBs > VRSL Water table intersects foundation
(xi) Compounds of Concern in use	Sub-slab > VRSL Solvent use in building at time of closure	Sub-slab: BETX, N, MTBE, TMBs > VRSL Petroleum products used within building
(xii) Commercial/Industrial Exposure Assumption	Sub-slab > Commercial/industrial VRSL Solvent NOT in use at time of closure	Sub-slab: BETX, N, MTBE, TMBs > Commercial/industrial VRSL
(xiii) Future Construction. Includes remodeling or additions on an existing building. (assumes: 1) there are no preferential pathways between the new building and residual VOC source and 2) the groundwater plume is stable or receding)	<u>If any of the following exist:</u> <u>Soil:</u> GW-RCL for PCE/TCE met or exceeded anywhere in vadose zone on property <u>GW</u> ≥ ES on property <u>GW</u> ≥ PAL if contaminated groundwater may contact building foundation	<u>NAPL:</u> (any of the following indicators) on the property 1. Soil: B > 10 mg/kg; N > 5 mg/kg; Total PVOC > 250 mg/kg 2. Groundwater: B > 1 mg/l; Total PVOC > 30 mg/l 3. Presence of petroleum product (e.g., floating product, LIF survey results) <u>Soil:</u> significant contamination less than NAPL indicators and a building foundation can be placed within 5 feet of the contamination <u>Groundwater:</u> (significant dissolved petroleum less than NAPL indicators) 1. Building foundation can be placed within 5 feet or less of contaminated groundwater 2. Dissolved petroleum VOC ≥ PAL if contaminated groundwater may contact building foundation

Notes:

1. Remedial action/source control should be performed prior to closure request when operation of a vapor mitigation system (VMS) is necessary to protect the vapor pathway, as required by NR 726.05(8).
2. If a VMS is installed and operating, documentation of the system installation and effectiveness is required by NR 724.15.
3. An O&M plan, including all requirements of NR 724.13(2)(k) must be submitted with the closure request. An O&M plan should have been provided to the property owner and DNR at the time of VMS installation.



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Issues & Trends 2015

July 1, 2015
12:00 – 1:00 p.m.

NR 718 Issues Contaminated Soil / Solid Wastes

Audio from today's presentation and information about this and future *Issues & Trends Series* can be found on the RR Program Training Webpage at:
dnr.wi.gov/topic/Brownfields/Training.html

Questions / Comments / Suggestions regarding the
Issues & Trends Series can be submitted to:

DNRRRComments@wisconsin.gov

Thank you