

- TITLE:** **Conducting Remedies in the VAP for Complete and Reasonably Anticipated to be Complete Pathways**
- DATE EFFECTIVE:** 21 October 2011
- HISTORY:** New addition to the Technical Guidance Compendium
- KEYWORDS:** remedy, remedial activities, applicable standards, environmental covenant, land use, activity and use limitations, institutional control, engineering control, operation and maintenance, vapor intrusion, pathway assessment, complete exposure pathway, identified area, exposure units.
- RULE/ AUTHORITY:** OAC 3745-300-07, -08, -09, -11
- QUESTION:** **How do I conduct and handle the timing of remedies in the VAP, particularly if I anticipate complete exposure pathways from post NFA development?**
- BACKGROUND:** A No Further Action Letter issued under Ohio's Voluntary Action program (VAP) must demonstrate (among other things) that chemicals of concern (COCs) in environmental media meet applicable standards for all complete exposure pathways, or show that a remedy has been implemented to achieve the standards. The definition of a complete exposure pathway includes "a current or reasonably anticipated exposure pathway determined to be complete after the identification of current and reasonably anticipated property use and receptor populations," as provided in OAC 3745-300-01(A)(25).
- OAC 3745-300-07(F)(1) requires the determination of both the current and reasonably anticipated complete exposure pathways. Because a volunteer is not required to determine applicable standards or apply a remedy to incomplete exposure pathways, exposure pathway completeness is critical for determining if a remedy is necessary.
- Remedial activities necessary to achieve applicable standards should be conducted prior to the issuance of the NFA letter for all pathways, including reasonably anticipated pathways. The remedy needs to be implemented as required by OAC 3745-300-07(I)(4).
- ANSWER:** **Remedy Timing**
OAC 3745-300-07(I)(3)(a) requires a volunteer to implement a remedy for all *current* exposure pathways and *reasonably anticipated exposure*

pathways determined to be complete if compliance with applicable standards for those pathways is not verified. Refer to [TGC VA30007.11.001](#) for guidance on identification of reasonably anticipated complete exposure pathways. The requirement to remedy complete exposure pathways that are not in compliance with applicable standards draws no distinction between *currently* complete and *reasonably anticipated to be complete*. Thus, the VAP rules require implementation of a remedy for anticipated exposure pathways determined to be complete¹ that may not, at the time the NFA letter is issued, exist. Nevertheless, like all VAP remedies, they must be implemented prior² to the issuance of the NFA letter to support the NFA letter's determination that the property complies with applicable standards.

Can I satisfy the requirement to remedy an anticipated pathway if I put my remedy design in an O&M plan along with a commitment to implement?

Answer: No. Given the VAP rule requirement for conducting a remedy necessary to achieve standards, required remedies must be implemented prior to the issuance of the NFA letter to support a determination that the property meets applicable standards. The use of O&M Plans to describe future remedies is not appropriate. Rather, O&M Plans are designed to serve two purposes – to allow a constructed remedy to “operate” and over a specified time to achieve applicable standards (such as a groundwater pump and treat system), and/or to allow proper maintenance of an engineering control (such as an engineered cap) to ensure it continues to serve to block (i.e., render incomplete) an otherwise complete exposure pathway. Note that under the VAP, a design plan or a pilot study is not a remedy.

Is a volunteer required to implement a remedy today for a complete exposure pathway that is anticipated but will not exist until after the property is redeveloped? How might this be done?

Answer: Yes. The simplest way to handle this is to seek the CNS *after* redevelopment dependent anticipated pathways become current. However, the VAP recognizes that this approach may not be viable if the CNS is needed earlier in the process.

When anticipated complete exposure pathways are expected following development/construction/redevelopment, implementing a remedy before that construction occurs can be challenging. The most frequent

¹ in accordance with OAC 3745-300-07(F)

² see §3746.01 (R), §3746.04(B)(4), §3746.10(C)(2), §3746.11(A), and §3746.11(B).

example of this is the anticipated vapor intrusion to indoor air pathway for an expected, but yet to be constructed building. In such a case, one useful way to remedy the anticipated complete exposure pathway is to establish an activity and use limitation (AUL) through an environment covenant (EC) that prohibits the exposure pathway we anticipate from ever happening. For example, in areas where a complete exposure pathway for vapor intrusion is anticipated to be a problem, we could simply establish an AUL that prohibits occupied structures, thus rendering the pathway incomplete. If the AUL is structured precisely³, the AUL can be permissive and the EC need not be changed to allow construction. There are, of course, other ways to handle this, another approach would be to simply remove the source area to applicable standards. The volunteer is not limited to the approaches suggested here; as always the volunteer is free to devise their own solutions so long as the pathway is addressed and the rule requirements are met.

If I implement an AUL that prohibits occupied buildings as a remedy for the vapor intrusion to indoor air pathway, how can I proceed with development?

It depends upon how the AUL is structured. If it simply prohibits occupied structures, in order to build and occupy new buildings, the AUL in the EC would have to be removed, and replaced with another remedy that meets applicable standards so the CNS remain in good standing. The CNS would have to be amended to reflect the new remedy, as necessary.

The VAP recognizes this approach may be cumbersome. As mentioned above, more refined AUL in the EC can solve this - if set up correctly, the AUL can be permissive and the EC need not be changed to allow construction⁴. This is the recommended approach, as it allows the EC to remain in place and buildings to be constructed and occupied on a case by case basis.

How do I go about replacing one remedy with another? Does that require a new NFA and new Covenant Not to Sue (CNS)?

Answer: No. Ohio EPA will grant a CNS amendment allowing a volunteer to replace one remedy with another at the volunteer's request, so long as the new remedy meets applicable standards⁵ and no existing obligations (such as an O&M agreement) would be violated by the replacement. The Agency has developed comprehensive guidance that

³ See sample AUL language that might go in an EC appended to this TDC

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⁵ Note that the PROPERTY USE upon which the NFA letter demonstrations are based cannot change – a switch from *industrial use* to *residential use*, for example, DOES require a new NFA and a new CNS.

covers post CNS remedy changes. Please refer to the [Post CNS Compliance Process](#) document for more information.

What about using an interim remedy? When would I need that?

Answer: If a pathway requires a remedy, a remedy must be implemented prior to the issuance of the NFA letter. Interim *measures* may be used when the remedy you intend to rely upon long term has been constructed, but has not yet achieved applicable standards, and action is required in the interim to protect public health and safety and the environment until that time.(see OAC 3745-300-11(A) and (C)(6)).

In contrast, “interim” remedies as a bridge to a “final” remedy are not necessary. If a pathway requires a remedy, a remedy must be implemented prior to the issuance of the NFA letter. If the volunteer wishes to replace that remedy with another, they may. Essentially, any remedy, regardless if it is labeled “final” or “interim”, may be replaced with any other remedy. There is no need to call something an interim remedy simply because a volunteer plans to replace it with another remedy at some point in the future. There is also no need to scope out a remedy you plan to implement in the future and include it in an O&M plan. The O&M plan need only support the remedy in place.

What about using a contingent remedy that is triggered if my chosen remedy fails, or if an anticipated pathway becomes complete?

Answer: The VAP does not require or approve contingent remedies. The VAP only verifies remedies that are relied upon to meet applicable standards. If a remedy fails, it must be replaced, and the Agency will verify that the “new” remedy results in compliance with applicable standards. The Agency will not require a contingent remedy.

Anticipated complete pathways, like all complete pathways, require a remedy prior to the issuance of the NFA Letter, and as such a contingent remedy is not a useful approach to anticipated complete pathways. OAC 3745-300-11(E)(1)(f)(iv) allows for *contingency plans* within the scope of an O&M plan, these are distinguished from *contingent remedies*.

Final Note on Remedy Selection:

The type of remedy employed at a VAP property is the volunteer’s choice, and may be modified/replaced through an amendment of the CNS and associated documents, as appropriate. It is the volunteer’s obligation to choose a remedy that will result in compliance with applicable standards and the requirements of ORC 3746 and OAC 3745-300. The Agency’s role on the choice of a remedy is to verify the

volunteer's demonstration that the remedy relied upon does indeed result, or is expected to result, in the property complying with applicable standards and is protective of public health and safety and the environment. A Volunteer may, if they so choose, seek technical assistance from the Agency regarding the viability or likelihood a potential remedy will result in compliance with applicable standards. A Volunteer may also seek advice as to what remedy might work best at a voluntary action property. However, it is the volunteer's obligation to choose a remedy that will result in compliance with applicable standards and the requirements of ORC Chapter 3746 and OAC Chapter 3745-300.

OHIO EPA**CONTACT:**

For any questions concerning this issue, please contact the VAP central office at (614) 644-2924.

Appendix A

Sample Language for Activity and Use Limitation on Building Occupancy

In a situation where the property is over applicable standards for the vapor intrusion to indoor air pathway for an anticipated building expected to be constructed on the property or a portion of the property, this can be addressed with an activity and use limitation (AUL). The language below, if included as an AUL in an EC, would remedy this complete exposure pathway and still leave the Volunteer in a position to develop the property and construct a building. In order to occupy a new building and remain in compliance, one of the “options” in the AUL would have to be exercised.

Limitation on Building Occupancy - Remedy or Demonstration

Obligation. Prior to human occupancy of any building constructed on the [Property / portion of Property that is defined by the EC as subject to this limitation] after the recording date of this Environmental Covenant, either: (i) a remedy that eliminates indoor air vapor intrusion exposure to hazardous substances or petroleum in soil or ground water in excess of applicable standards shall be installed, operated and maintained as an engineering control under an operation and maintenance agreement, as necessary, in accordance with a covenant not to sue issued by the Director of Environmental Protection pursuant to ORC § 3746.12; or (ii) a demonstration shall be made to Ohio EPA, attested to by a certified professional, that the Property complies with applicable standards for the vapor intrusion to indoor air exposure pathway without further implementation of remedial activity and documented in accordance with ORC Chapter 3746 and the rules adopted thereunder.

The second option may be invoked after use of a remedy that has removed the contamination (i.e., excavation as part of Property redevelopment) or based on Property data that shows the contaminants have attenuated to concentrations below the applicable standards. Documentation may include Ohio EPA’s acknowledgement of the CP’s demonstration under affidavit, which may be included in an amendment of the environmental covenant or a covenant not to sue, as appropriate.

ORC 3746.05’s “voidance by law” provision applies to any property in the VAP for which a covenant not to sue has been issued in reliance on an AUL. ORC 3746.05 provides that if a property is put to a use that does not comply with the specified AUL specified in the document that established the AUL (i.e. the EC), the covenant not to sue is declared void on and after the date of the commencement of the noncomplying use. In this regard, the Volunteer may want to consider use of safeguards for compliance with an AUL for Building Occupancy to prevent triggering the ORC 3746.05 voidance by law provision.