



GUIDANCE ON CASE CLOSURE AND THE REQUIREMENTS FOR MANAGING CONTINUING OBLIGATIONS

PUB-RR-606

December 2011

TABLE OF CONTENTS	PAGE
PURPOSE AND BACKGROUND	2
Disclaimer and other Relevant Documents.....	2
INTRODUCTION	3
CLOSURE CONSIDERATIONS	4
NOTIFICATION PROCEDURES	4
ENVIRONMENTAL INSURANCE	5
DATABASE LISTING	6
USE OF DEED NOTICES	6
MAINTENANCE PLANS	6
CONDITIONAL CLOSURE	6
TRACKING CLOSED CASES	7
TYPES OF CASE CLOSURE or INTERIM ACTION DECISIONS	7
Unrestricted Closure.....	7
Closure or Interim Actions with Land Use Controls.....	7
Closure with Listing on the GIS Registry.....	9
VPLE Sites.....	11
POST CLOSURE DECISIONS: Modification/ Removal from the GIS Registry	11
EXAMPLES	13
APPENDIX 1: BRRS CODES	16
APPENDIX 2: Model Documents	17
Example Deed Notice for Site-specific Circumstances.....	18
Example Deed Notice to Terminate or Amend a Deed Restriction.....	19
Example Determination for Subdividing a Property.....	21
Example Maintenance Plan for a Straightforward Site.....	22
Example Inspection Log.....	26
Maintenance Plan Article.....	27
APPENDIX 3: Fees Associated With Case Closure	29
APPENDIX 4: Closure Scenarios and Continuing Obligations	30
<u>APPENDIX 5: Maintenance Plans for Vapor Mitigation Systems</u>	32



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PURPOSE AND BACKGROUND

The purpose of this guidance is to discuss:

1. Implementation of s. 292.12, Wis. Stats., which became effective on June 3, 2006. This section of the statute provides the authority to require limitations or conditions when approving remedial actions or issuing a closure letter if residual contamination remains, replacing the use of deed restrictions for closures.
2. Application of deed notices under ch. NR 726 Wis. Adm. Code. (Deed notices are also known as deed affidavits.)
3. Inclusion of certain sites on a publically accessible database; Remediation and Redevelopment Program's Geographic Information System Registry (GIS Registry) for sites with residual soil and/or groundwater contamination or other situations where some type of continuing obligation is required. Certain sites where the DNR has required a local governmental unit that is otherwise exempt from the Spill Law, to take an interim action are also required to be included in the GIS Registry.
4. Availability of environmental liability insurance for sites eligible for the Voluntary Party Liability Exemption (VPLE).

This guidance does not apply to deed affidavits recorded pursuant to s. NR 728.11, Wis. Adm. Code. Section NR 728.11, Wis. Adm. Code applies to sites where an RP is not proceeding with adequate investigation or remedial action, but that are considered to be low priority for purposes of enforcement.

This guidance document is intended for use by Department of Natural Resources (DNR), other state agency staff, and responsible parties (RPs), consultants or other interested parties. The primary purpose of this document is to provide information on issuing closure letters where residual contamination remains, after a response action has been completed. It may be used along with published references and guidance documents, information from training courses and current professional journals. The material presented is based on available information and the knowledge and experience of the authors and the peer reviewers. The reader is referred to the DNR's Remediation and Redevelopment Program NR 700 rule series, along with supporting Brownfields redevelopment and technical guidances on soil and groundwater contamination site investigation, remediation and case closure. Finally, this document includes model deed notices in a format acceptable to County Register of Deeds offices.

NOTE ON TERMS USED IN THIS GUIDANCE

A specific hazardous substance discharge incident is referred to as a spill "case" or hazardous substance discharge "case." A hazardous substance discharge "site" is the area where the source of contamination is found and all areas where the contamination has migrated. A single "site" may include several properties. However, it is also possible to have more than one hazardous substance discharge "site" on a single property if there has been more than one hazardous substance discharge incident on a property.

"Continuing obligations" is a term used to broadly define any type of control applied to a property, to maintain the protectiveness of the remedial actions, based on contamination that remains at the property (residual contamination). Some controls include a site-specific continuing obligation on the property; these are often referred to as "292.12 Land Use Controls" (LUCs). Some controls are reminders of requirements that exist in other statutes or rules.

DISCLAIMER

This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced.

This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

This guidance is based on requirements found in ch. NR 140 and the ch. NR 700 rule series, Wis. Adm. Code; the Hazardous Substance Spill Law, s. 292.11, Wis. Stats., s. 292.12 (2006) and 292.13, Wis. Stats.; the Voluntary Party Liability Exemption statute, s. 292.15, Wis. Stats.; the Environmental Repair Statute, s. 292.31, Wis. Stats.; and the Groundwater Law, ch. 160, Wis. Stats.

This guidance may be more complete when used in conjunction with other documents prepared by the Remediation and Redevelopment program staff. These documents are found at: http://dnr.wi.gov/org/aw/rr/archives/pub_index.html. Use the publications browser option on the left of screen to find by number. Guidance documents may also be obtained by sending a request to: Public Information Requests, Bureau for Remediation and Redevelopment, Department of Natural Resources, P.O. Box 7921, Madison, WI 53707. It may also be helpful to review the information on the web page, "Managing Properties with Residual Contamination", at <http://dnr.wi.gov/org/aw/rr/cleanup/residual.htm>.

This guidance will be updated as needed. Comments and concerns may be sent to "Guidance Revisions", Jane Lemcke - RR/5, WDNR, P.O. Box 7921, Madison, WI 53707, or to Jane.Lemcke@wisconsin.gov.

INTRODUCTION

Continuing obligations are defined as legal, physical or administrative mechanisms that minimize the potential for human exposure to contamination by limiting human exposure to residual contamination of the property, to ensure the maintenance of certain physical or engineered systems, to limit land use or groundwater use, that require or prohibit certain actions by responsible parties or property owners to protect human health or the environment or that give notice of the existence of residual contamination to prospective purchasers and other interested persons in order to meet the intent of the Spill Law, s. 292.11, Wis. Stats.

It is important to note that the need for continuing obligations cannot be replaced by local government controls such as zoning ordinances and land use plans. Zoning ordinances and local government land use plans can be changed and are not a substitute for the continuing obligations described in this document.

The following are the types of continuing obligations used in the RR program:

1. A **condition** in a remedial action approval letter or in a closure letter or in a local governmental unit letter, under s. 292.12, Wis. Stats., requires maintenance of an engineered system, action in the future, restricts development or activities at a site, or requires additional environmental work be completed before land use at a site changes. Since June 3, 2006, these conditions are made enforceable through s. 292.12, Wis. Stats., rather than placement of deed restrictions on properties, and are often referred to as continuing obligations. Certain conditions are also included in closure letters that were formerly included in deed notices, such as the requirement for proper abandonment of a monitoring well that was unable to be located and abandoned at the time of closure.

2. A **deed notice** is used to document certain conditions at the site. For example, a deed notice may be used to notify those looking at property records that a deed restriction has been satisfied.
3. Listing a site on the Internet accessible **RR Geographic Information System (GIS) Registry (GIS Registry)** is done to ensure the public is notified of soil, groundwater or other contamination at the site, which is contained or is being treated by a long-term remedial action. The GIS Registry lists remediation cases where residual contamination exists in soil, groundwater or other media (such as vapor or sediments), sites where a continuing obligation has been applied under s. 292.12, and sites where monitoring wells still need to be properly abandoned. It may also include sites where the DNR required a local governmental unit (LGU) to take an interim action at a site under s. 292.12, Wis. Stats. A number of sites on the GIS Registry may also have a deed restriction placed on the property prior to June 3, 2006 or a deed notice recorded at the Register of Deeds Office for affected properties.
4. **Deed restrictions** are still used for grants awarded under the Green Space and Public Facilities Grant program to ensure that the grant project area (e.g. park) remains for use by the public for a certain number of years. Since June 3, 2006, deed restrictions are no longer used for closure situations.
5. Environmental Insurance is required by statute for parties seeking a Voluntary Party Liability Exemption, and for which the Voluntary Party is requesting closure using natural attenuation for remediation of groundwater and wants a Certificate of Completion issued before groundwater standards have been met.

CLOSURE CONSIDERATIONS

Continuing obligations are not used in place of conducting soil and groundwater remediation at a site. Response actions must be taken to ensure that all contaminant pathways are addressed in order to protect human health and the environment. A condition of case closure may be used to ensure the long-term effectiveness of the selected remedy (such as an engineered cap) or to ensure that a specified land use doesn't change without the need for additional action being considered. These conditions may also be useful in limiting human access to a site as long as the contaminants are present.

The suitability and need for continuing obligations should be considered by responsible parties (RPs) early in the remedial decision-making process for a site, since certain long-term remedial options for soil, groundwater and other media may have mandatory GIS Registry listing requirements or the requirement to purchase VPLE insurance. By considering the need for continuing obligations early and providing the necessary information, it is more likely that the application for case closure for the site will be considered "complete" by the DNR.

The property owner is responsible for the continuing obligations. A property owner may enter into a legally binding agreement (such as a contract) with someone else (the person responsible for the cleanup) to take responsibility for compliance with the continuing obligations. If the person with whom any property owner has an agreement fails to adequately comply with the appropriate continuing obligations, the Department has the authority to require the property owner to complete the necessary work. A legal agreement between a property owner and another party to carry out any of the continuing obligations does not automatically transfer to a new owner of the property. If a subsequent property owner cannot negotiate a new agreement, the responsibility for compliance with the applicable continuing obligations resides with that property owner.

NOTIFICATION PROCEDURES

Under NR 726, prior to requesting closure for sites with residual contamination, the RP needs to notify any affected parties, about the residual contamination and that the site will be included on

a publically accessible database. Affected parties include owners whose property has residual contamination, property owners who will be responsible for a continuing obligation, and those responsible for rights-of-way. A source property owner, if different than the person conducting the cleanup, is also an affected property owner. The entity who owns the right-of-way is responsible for the continuing obligation. Where a right-of-way is accessed through an easement, the entity is responsible for exercising due care considering the continuing obligation.

The notification should include a description of what type of contamination remains, where it is located, and of any responsibilities the property owner may have in the future, regarding the residual contamination or for the remedy used to obtain closure. The notification should also include that the site will be put on the GIS Registry. Appendix A of ch. NR 726, Wis. Adm. Code, includes specific notification requirements and a template notification letter. This template can be modified to fit the situation, depending on the applicable continuing obligations. However, the basic paragraphs must be included for all sites. The agency with administrative authority cannot provide a closure response until 30 days after receipt of the notification by affected parties. Proof of this notice is to be included with the case closure form as part of the GIS packet.

Under 292.12, Wis. Stats., notification is required for any site with residual contamination to provide notice regarding the contamination and any continuing obligations. Notification is to be provided to all affected property owners. The notification is to include a description of the type of residual contamination, and the location and a description of any engineering control or other continuing obligation on the affected property. The notification under ch. NR 726 and 292.12, Wis. Stats., are both addressed by use of the Appendix A notification template.

Under ch. NR 726, for all public streets, highway rights-of-way and railroad rights-of-way that fall within the contaminated site boundary, that have soil or groundwater contamination exceeding the applicable standards in ch. NR 720 or ch. NR 140, Wis. Adm. Code, written notification of the contamination must be provided to the clerk of the town and county, or village or city, where the right-of-way is located and the municipal department or state agency that is responsible for maintaining the public street or highway. The same notification must be provided to the railroad that maintains the railroad right-of-way. At the time that notification is provided, the RP and the owner of the right-of-way **may** want to discuss under what conditions future access will be provided and who will pay for additional investigation or remediation if required in the future.

For cases that have residual contamination under public right of ways, the rights-of-way are not identified with a symbol as separate properties on the GIS Registry maps. However, public street and highway rights-of-way, or railroad rights-of-way are identified and associated with the source property on the GIS Registry within the file information.

ENVIRONMENTAL INSURANCE

Section 292.15 (2)(ae) 3m, Wis. Stats., requires the **purchase of environmental insurance** for Voluntary Party Liability Exemption (VPLE) sites where groundwater contamination exceeds NR 140 groundwater enforcement standards, use of natural attenuation has been approved by the DNR, and the voluntary party wants a Certificate of Completion issued before groundwater quality standards have been met. Voluntary parties may obtain environmental insurance under a master state insurance policy as provided in ch. NR 754, Wis. Adm. Code. The need for obtaining a certificate of completion prior to meeting enforcement standards should be considered early on in the remedial decision-making process, since the purchase of environmental insurance and the listing of the site on the GIS Registry will be necessary. Further information and a fee schedule can be accessed at <http://dnr.wi.gov/org/aw/rr/archives/pubs/RR661.pdf>

DATABASE LISTING

NR 726, Wis. Adm. Code, requires the submittal of information for the GIS Registry with the case closure request in order for the application to be considered complete. See forms 4400-245 and 4400-246, the GIS Registry Checklist and Impacted Off-Source Property Information forms, respectively. DNR's "Case Closure Request" form, RR 4400-202, includes the GIS Registry information requirements in section H. (As of May, 2008, Section H has been temporarily replaced with the two forms above. The forms are located at http://dnr.wi.gov/org/aw/rr/archives/pub_index.html#forms; the closure form is at <http://dnr.wi.gov/org/aw/rr/archives/pubs/4400-202.pdf>).

For LGU sites required to take an interim action, the list of information to be provided for listing on the GIS Registry is found on page 8-9 of this guidance.

Section 292.12, Wis. Stats., also provides authority for collecting fees, and for sites with certain continuing obligations identified in a remedial action plan approval to be added to the GIS Registry. As of 2009, the DNR is developing protocols regarding which sites will be included, and what information will be available on the internet.

USE OF DEED NOTICES

Since June, 2006, most of the situations where deed notices were used are now addressed as conditions of closure. However, in certain limited situations, such as satisfaction of a previously recorded deed restriction, they may still be necessary, and the following would still apply. As required in ch. NR 726, Wis. Adm. Code, all deed notices must be drafted as an affidavit in the format required by s. 59.43 (2m), Stats., and must include each property's legal description typed onto the form or as an attachment which is incorporated by reference. Parcel Identification Numbers (PINs) also must be included on the deed instrument. A deed notice may be signed by a consultant on behalf of a property owner. It is helpful to RR closure committees and project managers if draft deed notices are submitted as part of a closure request. Otherwise, extra time will be required to obtain closure approval from the DNR, as draft deed notices need to be reviewed before they can be recorded to satisfy the requirements of a closure decision.

MAINTENANCE PLANS

A maintenance plan must be submitted with the closure request when pavement, an engineered cover or other type of cover is required to protect public health, safety, welfare or the environment. A maintenance plan may also be required for other situations, such as maintenance of a building, a floor, or operation of a vapor mitigation system to minimize exposure, depending on the site-specifics. The property owner is required to periodically inspect the property after the case is closed to ensure compliance with the conditions of closure. It is recommended that publication RR-709, "Guidance for Cover Systems as Soil Performance Standard Remedies" be consulted for information on cap design, construction and operation and maintenance concepts. (<http://dnr.wi.gov/org/aw/rr/archives/pubs/RR709.pdf>) The closure letter will include any submittal requirements for inspection logs, as necessary for the site. If, in the future, a threat to human health or the environment exists as a result of noncompliance with the closure conditions, the DNR may take enforcement action (including reopening the case) to address the threat posed by the noncompliance. An example maintenance plan is found in appendix 2.

CONDITIONAL CLOSURE

The conditions that must be met in order for a final closure decision to be made are described in either a denial letter, or in a conditional closure letter. Conditions are generally limited to the

requirement to abandon monitoring wells and disposal of treated soils. When all conditions specified in the denial letter or conditional closure letter are met, a final closure letter is issued.

TRACKING CONTAMINATED SITES

A publically accessible and searchable database of sites or facilities, known as BRRTS (Bureau for Remediation and Redevelopment Tracking System) on the Web (BOTW) is available on the DNR's web site. BOTW is useful for providing information about the types of contaminants found at a site and whether soils, groundwater or other media have been impacted. BRRTS uses numerical action codes to indicate the status of a case (e.g., site is in the process of completing a site investigation, is conditionally closed, has received a final closure decision, etc.). Action code definitions and names are found under the Action Reference List on BOTW. Some of the more common codes are listed in Appendix 1.

TYPES OF CASE CLOSURE OR INTERIM ACTION DECISIONS

This section provides examples of case closure situations, and one example of an interim action, where continuing obligations are required by statute or rule, or may be required as a condition of closure to ensure the remedy is protective. It includes examples of when and how a site gets listed on the GIS Registry. DNR RR closure committees or staff, and the staff of other state agencies with administrative authority for a site, must require or are given the discretion to require conditions of closure, or other continuing obligations. A complete closure application includes a Case Closure Request (DNR Form 4400-202) as required by ch. NR 726, Wis. Adm. Code, and all tables, cross-sections, maps, analytical information and affected property notifications meeting requirements of ch. NR 726, Wis. Adm. Code (and listed in the form). The completed form will ensure adequate documentation is included in order for staff to make a decision regarding application of continuing obligations at the time that a case is reviewed for closure.

When a fee under ch. NR 749 is submitted to DNR for closure review and documentation, a closure letter that highlights the remedial response actions taken at the site and states that the site meets the requirements of ch. NR 726 is sent to the responsible party. If a fee is not submitted, the case is not reviewed for closure and remains an open site.

1. UNRESTRICTED CLOSURE

When a responsible party submits a closure request and none of the continuing obligations listed in Appendix 4 apply, an unrestricted closure is issued.

2. CLOSURE or INTERIM ACTIONS WITH LAND USE LIMITATIONS OR CONDITIONS (s. 292.12, WIS. STATS.)

Under s. 292.12, Wis. Stats., the following types of sites all receive conditions of closure (in lieu of filing a deed restriction on the property deed), and are required to be included on the GIS Registry. A summary of situations is also provided in Appendix 4.

a) Industrial Land Use: When land use at a site is classified as industrial, and an industrial residual contaminant level (RCL) is selected as the cleanup standard for soils at a site, DNR has the authority under s. 292.12, Wis. Stats. to impose limitations or conditions that prohibit non-industrial uses of the property. The term "industrial" is defined in s. NR 700.03 (28m), Wis. Adm. Code and selection of an industrial land use classification for soil cleanup standard determinations must follow the criteria in ch. NR 720, Wis. Adm. Code.

The conditions should specify that before the site can be used for a non-industrial land use, the DNR must be notified by the current property owner of the intent to change the land use. Documentation of additional investigation and remediation, and as applicable, site specific RCL (SSRCL) calculations should be provided. If contaminant levels are remediated to non-industrial RCLs, a revised closure letter will be issued indicating that the previously recorded deed restriction is no longer applicable. DNR also prepares a written determination which is to be attached to a deed notice. For other sites, the revised closure letter may include conditions to account for new requirements, such as maintenance of an engineered performance standard. Requests along with the appropriate fee should be sent to DNR who will review information and determine the appropriate course of action.

b) Structural Impediments: Sites where structural impediments such as buildings prevent access to contamination, will have a condition of closure that requires the investigation and remediation when residual contamination becomes accessible. As a condition of closure, the property owner is also required to notify the agency with administrative authority before a structural impediment is removed.

A VPLE site may not be issued a Certificate of Completion if a structural impediment exists that prevents the full investigation of the property.

c) Performance Standard Covers, Caps or Barriers (for either the direct contact or groundwater pathway): When a performance standard serves as the final remedy, a condition is included in the closure letter that requires maintenance to ensure the remedy will remain effective over time. A performance standard may include such options as a soil cover (typically 1-2 feet of clean soil), pavement, a building or an engineered cover or cap.

The maintenance plan should be attached to the closure letter. Cover inspection frequency should be determined by consulting the publication RR-709, "Guidance for Cover Systems as Soil Performance Standard Remedies", at <http://dnr.wi.gov/org/aw/rr/archives/pubs/RR709.pdf>. The requirement to either submit the inspection reports to the DNR, or to maintain them on-site or at an address identified by the property owner is also to be included in the closure letter. If the frequency of inspections is other than annual, the DNR Project Manager should discuss the situation with the Regional Team Supervisor for the purposes of maintaining consistency.

If contamination exceeding applicable direct contact RCLs is within the top 4 feet of soil, and undisturbed soil cover serves as the performance standard under ch. NR 720, Wis. Adm. Code, then a condition in the closure letter is included to ensure the soil cover is not disturbed or excavated in the future. If a ch. NR 720, Wis. Adm. Code, performance standard is selected to prevent contaminant leaching to groundwater, it is recommended that publication RR-709, "Guidance for Cover Systems as Soil Performance Standard Remedies" be consulted.

d) Vapor Mitigation System: A condition of closure will be required in the case where a vapor mitigation system has been installed at a site, and the continued operation of the system after closure is necessary to minimize exposures.

A condition of closure may also be required at a site for a vapor assessment and/or a vapor mitigation system if exposure to harmful levels of contaminants via vapor migration could result from a change in the use of the site or building. The condition of closure should also include notification of the DNR regarding use of the building and/or site changes.

e) LGU Action: *This is not a closure scenario*, but inclusion on the GIS Registry is required under s. 292.12, Wis. Stats.

Inclusion on the GIS Registry is required for sites where the DNR has required that a local

governmental unit or economic development corporation take an interim action under subd. 292.11(9) (e) 4., Wis. Stats. (LGU Liability Exemption under the Spill Law). DNR can direct the LGU to take an action when necessary to reduce the threat to public health or safety, when the property is developed or put to an intended use. The following information should be included in the GIS Registry packet for these sites:

- WTM coordinates for each affected property
- A description of the response actions taken
- A copy of the maintenance plan, if a land use control is required
- A site location map that outlines all properties on a United States geographic survey topographical map or plat map in sufficient detail to permit the parcels to be located easily. All municipal and potable wells within 1200 feet of the site should be identified on this map.
- If available, a map of all contaminated properties, showing buildings, roads, property boundaries, contaminant sources, utility lines, monitoring wells and potable wells, and the location of all contaminated public street and highway rights-of-way and railroad rights-of-way in relation to the source property and in relation to the boundaries of contamination exceeding soil or groundwater standards.
- If available, a soil sample location map that shows the location where all soil samples were collected and identifies, with a single contour, the horizontal extent of residual soil contamination.
- A copy of the most recent deed which includes the legal description of each property, except that, in situations where a buyer has purchased property under a land contract and has not yet received a deed, a copy of the land contract which includes the legal description shall be submitted.
- A copy of the certified survey map or the relevant portion of the recorded plat map for those properties where the legal description in the most recent deed or land contract refers to a certified survey map or a recorded plat map.
- The parcel identification number(s) for each property.
- A statement that the deeds with legal descriptions of all affected properties have been submitted.

Maps and cross-sections need to be to scale. They should not be any larger than 8.5 by 14 inches, unless the map or cross-section is submitted in electronic form in portable document format (PDF), readable by the Adobe Acrobat Reader.

3. CLOSURE WITH OTHER CONDITIONS THAT RESULT IN LISTING A SITE OR PROPERTY ON THE GIS REGISTRY

Depending on the remedy selected for contaminated soil, groundwater or other media, there may be a requirement to list the site, or a specific property on the GIS Registry at the time that the case is closed. Listing on the GIS Registry provides notification about residual contamination and/or other continuing obligations on a property. Chapter NR 726, Wis. Adm. Code, specifies the GIS Registry information that must be provided with the closure request for each property within the site. This information is found in Section H of the closure request form. As of May, 2008, Section H is completed by the use of 2 new forms: 4400-245 GIS Registry Checklist, and 4400-246, Impacted Off-Source Property Information. Once the closure form (4400-202) is converted to allow for electronic submittal, these forms will be included in the finalized closure form as section H.

a. Residual Soil Contamination: Sites with Residual Soil Contamination, But No Residual Groundwater Contamination: Cases where final soil sampling reveals some residual soil contaminant concentrations that exceed generic or site specific RCLs as

determined under ch. NR 720 may be closed **if**: (1) soil contamination has been adequately characterized for all pathways of concern, (2) there is no threat to human health or the environment, (3) the site will be listed on the GIS Registry as required by ch. NR 726 and (4) remediation has been completed to the extent technically and economically feasible per ch. NR 722, Wis. Adm. Code. If a site is required to be listed on the GIS Registry, all public street or highway rights-of-way and railroad rights-of-way that fall within the contaminated site boundaries must be identified for inclusion on the GIS Registry. In addition, a condition in the closure letter will specify whether any additional response action will be required if contaminated soil is excavated in the future.

A closure letter condition is also used when contamination remains deeper than 4 feet at a site. (Direct contact is generally considered to be within the top 4 feet, but can be a site-specific determination). The closure condition serves to notify future property owners of the residual contamination, and includes a requirement that residual contamination must be properly managed if the soil is excavated in the future.

b. Sites with Groundwater Contamination Equal or Greater Than Enforcement

Standards: Sites with exceedances of ch. NR 140, Wis. Adm. Code, enforcement standards (ESs) in groundwater may be closed if: (1) the plume is stable or receding, (2) there is no threat to human health or the environment, (3) it has been demonstrated that natural attenuation (NA) is effective in reducing contaminant mass and concentration in groundwater, (4) ch. NR 140 groundwater standards will be met within a reasonable period of time, (5) the site will be listed on the GIS Registry as required by ch. NR 726, and (6) adequate source control has been taken. Criteria to demonstrate NA is effective can be found in DNR guidances listed at the front of this document. To determine if compliance will be achieved within a reasonable period of time, the RP must assess the criteria in ch. NR 722, Wis. Adm. Code.

The RP must submit documentation to show that the criteria in ch. NR 726, Wis. Adm. Code, have been met for the site. This includes providing copies of the written notification to affected property owners where ch. NR 140 ES exceedances exist and allowing 30 days for affected landowners to comment on the proposed case closure. It also includes providing written notification to persons responsible for residual contamination in rights-of-way, before a decision is made (see Notification Procedures, p. 4).

Use of Inferred Data: For all sites where ch. NR 140 ES exceedances exist on the source property and a downgradient property, the RP may infer that any properties in between also have ch. NR 140 ES exceedances and, therefore, must be listed on the GIS Registry. On a case-by-case basis, NR 140 exceedances may also be inferred from data collected on an adjacent property, near the property line.

Use of inferred data is generally not appropriate when groundwater samples have only been collected on the source property. It is also not applicable when an exemption to the PAL under s. NR 140.28, Wis. Adm. Code is sought, since monitoring data must be used to demonstrate that a specific property is eligible for an exemption.

c. Monitoring Well(s) Which Have Not Been Properly Abandoned:

The DNR has replaced the requirement for a deed notice with a condition of closure for inclusion on the GIS Registry in cases where one or more monitoring wells were not located and properly abandoned at the time of the closure request/approval. This condition is only used after a reasonable effort has been made to locate the well. Information about the specific attempts made to locate the wells for abandonment needs to be included with the closure request.

Information that typically needs to be submitted for inclusion in the GIS Registry packet are:

- the location map with the surveyed well locations identified and
- the well construction logs.
- the latest deed with legal description and parcel identification number (for any affected property).

If a well is located on an off-source property, include the map, logs and deed information, as well as:

- a copy of the notification letter provided to inform the property owner(s) that the property will be included on the GIS Registry and that proper abandonment of any well is required when the well is located.

This condition will also apply when a property owner wants to keep the well for continued monitoring, in cases where the agency with administrative authority has not required continued monitoring. This is an exception under ch. NR 141, Wis. Adm. Code. The party requesting the exception needs to provide the basis for keeping the monitoring well. The concern is that the wells be maintained such that they do not provide a conduit for contamination to the groundwater. In these cases, an additional requirement to inspect the well at least annually to verify the integrity of the well should be included in the closure letter, with instructions to submit the inspection log to the DNR/agency or to maintain on site, as considered appropriate. Abandonment is required once the monitoring is discontinued, under s. NR 141.25, Wis. Adm. Code. Include an exception within the closure letter for the continued use of the well, under s. NR 141.31, and describe the basis for the exception.

4. VPLE SITES THAT CLOSE UNDER 2 OR 3, ABOVE

Properties that are in the Voluntary Party Liability Exemption process can also use the continuing obligations described above, with the exception of closure with a structural impediment, since the same requirements and limitations described in this guidance would generally apply. Continuing obligations that are used at a VPLE site are included in the Certificate of Completion as conditions that must be satisfied in order to qualify for the liability exemption. In addition, VPLE sites that use natural attenuation and need to be included on the GIS Registry due to groundwater contamination above enforcement standards must also obtain environmental insurance through a state insurance program as described in ch. NR 754, Wis. Adm. Code. The master insurance policy set up by the State of Wisconsin is funded through fees provided by the Voluntary Parties. It ensures that financial responsibility is available should the need arise if natural attenuation were to fail in the future.

POST CLOSURE DECISIONS: MODIFICATION TO, OR REMOVAL FROM THE GIS REGISTRY

Sometimes, after a site has been closed and is on the GIS Registry, site conditions change, and a property owner or RP wants to update information, or remove a property, or a site from the GIS Registry. For these situations, the RP or property owner may apply to DNR or to the agency with administrative authority for the site, for modifications to, or removal of a property or a site, from the GIS Registry. Reasons for such a request include:

- a. when groundwater concentrations fall below ch. NR 140 enforcement standards and/or soil contaminant concentrations fall below ch. NR 720 soil standards, or
- b. when a deed restriction, deed notice or a condition of closure (under s. 292.12 Wis. Stats.) has been satisfied, or
- c. where the property is subdivided.

In order to process a request, the RP or property owner needs to submit enough information to support their request.

a. Where groundwater concentrations fall between the ch. NR 140 PAL and ES, the RP or property owner may apply for an NR 140 PAL exemption from RR closure committees or staff under s. NR 140.28, Wis. Adm. Code, and the site may be removed from the GIS Registry if the PAL exemption is granted. If an RP or property owner wants a site with soil contamination removed from the GIS Registry, they must provide data that show that soil contamination has been treated to meet the appropriate standards under ch. NR 720, or removed, or both.

b. To remove a site or property from the GIS Registry, they may also need to show that a condition of closure has been satisfied, such that the condition is no longer needed.

c. For subdivision of a property, enough information must be submitted to DNR to document that the parcel has no remaining environmental issues that would preclude removal from the GIS Registry. The RP or property owner needs to submit new deed information showing the legal description of the subdivided properties.

Fees are required for DNR review of the request and vary by situation. A fee for processing the GIS Registry information is also required.

a. GIS Registry processing fees:

\$250 for groundwater related requests, (including monitoring wells)

\$200 for soil related requests, or

\$250+\$200 for both soil and groundwater related requests.

b. \$750: Review of requests to completely remove a site, or where one medium (soil or groundwater) has met standards, or where a condition of closure has been satisfied

c. \$500: Review of requests to remove an off-source property because standards are met, or a property has been subdivided.

If DATCP or the Department of Commerce have regulatory oversight, the only fee that needs to be submitted to DNR is the GIS Registry processing fee.

DNR may issue a determination that the site or a specific property no longer meets the criteria for listing on the RR GIS Registry and may remove the site or property listing. Responses range from a new closure letter, approval of the revised information, or a general liability clarification letter for the portion of the property that was not affected by the discharge. Following a determination by either DATCP or Commerce for cases closed under the administrative authority of those agencies, DNR will then revise or remove the information from the GIS Registry, as appropriate to the situation. For a site removal request, DNR will remove all previously affected off-source properties from the GIS Registry if sufficient data have been received.

If a request is made to DNR to modify a GIS Registry entry, and it involves the "updating" of a deed restriction, the DNR will require that the property owner file a deed notice, which references and attaches a determination prepared and signed by the DNR, identifying how the deed restriction has been satisfied, and if any conditions remain requiring inclusion on the GIS Registry. For example, a site was closed with a deed restriction requiring industrial use and investigation of contaminated soil under a structural impediment (concrete slab). If the concrete slab is later removed and the necessary soil investigation is completed, the structural impediment portion of the deed restriction would be satisfied, but the industrial use restriction would still remain. This restriction would be included in a revised final closure letter, and a deed notice would be filed to explain that the deed restriction has been superseded by the new closure letter.

EXAMPLES

EXAMPLE 1: CLOSURE WITH RESIDUAL GROUNDWATER CONTAMINATION, CAP AND LISTING ON THE GIS REGISTRY

A post remediation soil boring at a depth of 5 feet in the source area, reveals residual soil contamination at concentrations of concern for the groundwater pathway. There is groundwater contamination above ch. NR 140 ESs, but levels are stable or receding. The site is currently covered by pavement, and no information was provided to document that the levels of residual soil contamination would be protective if the cap were removed.

In this example, the closure letter would include:

- a condition for maintenance of the existing cap, with inspection frequency and submittal requirements,
- the provision which requires that if the soil is excavated in the future, the current property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination is present, and if so, assure that the material is properly managed (Remaining Residual Soil Contamination, template RR 5351), and
- a condition for inclusion of the site on the GIS Registry.

EXAMPLE 2: RESIDUAL SOIL CONTAMINATION EXCEEDING A CH. NR 720, TABLE 1 GROUNDWATER PATHWAY VALUES, BUT NO CH. NR 140 PALs ARE EXCEEDED

Situation A: A cap or cover is in place at the time the closure request is submitted. Because we can not be sure that groundwater standards will continue to be met if the cap/cover is removed, the case must generally be closed with the condition that the cap/cover be maintained. The closure letter should also require listing on the GIS Registry and proper management of the contaminated soil should it be excavated in the future.

Situation B: No cap or cover is in place at the time the closure request is submitted. The Responsible Party has 2 options in this situation. They can either request closure with inclusion on the GIS Registry due to the Table 1 exceedances or in accordance with s. NR 720.19(4) they can calculate site specific RCL's for protection of groundwater. If sufficient documentation is provided and the DNR approves the site specific RCL's, then the site would not require placement on the GIS Registry if the standards are met. Proper management of the contaminated soil should it be excavated in the future would still be required by state law, and added as a condition in the closure letter.

EXAMPLE 3: CLOSURE WITH RESIDUAL SOIL CONTAMINATION THAT POSES A DIRECT CONTACT THREAT, WITH LISTING ON THE GIS REGISTRY

A site has residual soil contamination that exceeds ch. NR 720 standards, and therefore poses a direct contact threat. Pavement exists in the area of residual contamination. A performance standard cap is selected as a final remedy to prevent or limit direct contact. A maintenance plan is submitted with the closure request. The frequency of inspection and other requirements should be specified in the plan. Cover inspection frequency should be determined by consulting the publication RR-709, "Guidance for Cover Systems as Soil Performance Standard Remedies". (<http://dnr.wi.gov/org/aw/rr/archives/pubs/RR709.pdf>)

When a performance standard, such as the installation or use of an existing, asphalt or concrete cap, a clay layer, or a soil cover is selected, a condition of case closure should be imposed which specifies that maintenance and repair of the cap or cover must be conducted until the soil meets ch. NR 720 soil cleanup standards or is removed. The site is also listed on the GIS Registry to give notice of the soil contamination and continuing obligation.

The cover maintenance plan should be attached to the closure letter. The closure letter should clarify if the inspection log is to be maintained on-site or submitted to the DNR. If the frequency of inspections is other than annual, the DNR Project Manager should discuss the situation with the Regional Team Supervisor for the purposes of maintaining consistency.

Example 4: RESIDUAL SOIL CONTAMINATION AT DEPTH WITH CLEAN SOIL ABOVE THAT PREVENTS DIRECT CONTACT WITH THE CONTAMINANTS

Situation A: The soil at depth exceeds ch. NR 720 standards. Since clean soil prevents direct contact with the contaminants, the case can be closed without the need for a cap provided the site is included on the GIS Registry. In addition, the closure letter should include a condition that requires proper management of the contaminated soil should it be excavated in the future.

Situation B: The soil at depth is contaminated, but does not exceed a ch. NR 720 standard using the non-industrial land use assumptions. In this scenario, the case can be closed without listing on the GIS Registry since no NR 720 standards have been exceeded. However, a condition should still be included in the closure letter that requires proper management of the contaminated soil should it be excavated in the future.

EXAMPLE 5: CLOSURE WITH RESIDUAL CONTAMINATION, STRUCTURAL IMPEDIMENT AND LISTING ON THE GIS REGISTRY

A structural impediment exists which currently prevents access to residual contamination, the degree and extent of which is undefined. Soil contamination remains after a remedial action, which exceeds NR 720 standards. Groundwater contamination is not an issue.

In this situation the case may be closed, if a condition of closure is included which requires the property owner at the time the structural impediment is removed, to investigate remaining contamination and to remediate as necessary. Notification of the DNR prior to removal of the structural impediment is required. The site is also required to be listed on the GIS Registry.

If the structural impediment is on an off-source property, notification of the need for a condition of closure must also be provided to the affected property owner prior to submitting a closure request. Notification of the off-source property owner a minimum of 30 days prior to making a closure request is suggested, unless the off-source property owner waives his or her right to comment on the closure request. This allows time to work out any agreements on responsibility for future actions.

EXAMPLE 6: VAPOR MITIGATION REQUIRED AT CLOSURE WITH LISTING ON THE GIS REGISTRY

Sites closed with a condition of closure to operate a vapor mitigation system to minimize exposure, or to conduct an assessment if the land use and exposure conditions change post closure will be required to be included on the DNR's database, under s. 292.12, Wis. Stats. They are included in our tracking system (BRRTS) and are on the GIS Registry to provide notification of a continuing obligation for any affected property.

More specific guidance on how to handle vapor intrusion closure issues is still being developed. Following is a link to ITRC guidances on vapor intrusion investigation and mitigation that may be helpful: http://www.itrcweb.org/gd_VI.asp.

Issues to consider when dealing with vapor intrusion include:

- coordination with the Department of Health Services

- levels of indoor air
- levels in the sub-slab
- identifying any potential exposure pathways
- interrupting any completed exposure pathway
- removal of source materials
- risk assumptions, based on worker (OSHA) vs. residential or sensitive population exposures

EXAMPLE 7: MONITORING WELLS(S) NEED TO BE ABANDONED, LISTING ON THE GIS REGISTRY

A groundwater monitoring well that was used for a site investigation and/or to monitor the effectiveness of remediation at the site has not been accounted for in the case closure request. The RP's consultant has made a reasonable effort to find the well, but has been unable to locate and properly abandon the monitoring well. The closure request includes information about the specific efforts made to locate and abandon the well.

In this situation, a condition of closure should be included that documents the specific monitoring well or wells that have not been properly abandoned and should state that if the well or wells are found or become accessible in the future, the monitoring well or wells must be abandoned according to the requirements of ch. NR 141, Wis. Adm. Code. Attach to the closure letter a location map showing the surveyed well locations, with a copy of the letter provided to the appropriate property owner or owners.

The following information is to be included in the GIS Registry packet;

- a site location map with the surveyed monitoring well locations identified for the wells to be abandoned,
- the well construction logs for the applicable wells,
- a deed with legal description and parcel identification number(s) for each property affected, and
- a copy of the notification letters provided to affected property owners.

Appendix 1: BRRTS Action Codes

Code	Action (fee code, new code)
700	Fee for processing GIS packet – groundwater
710	Fee for processing GIS packet – soil
48	NR 140 exemption at closure
50	Site is on GIS Registry
51	Deed notice required for closure
52	Deed restriction required for closure
56	LUC required for closure
95	Deed restriction modified
97	Technical assistance request with fee
99	GLC letter cross-reference
100	GIS Registry packet QAQC completed
101	GIS packet modified, date of response letter
104	Site removed from the GIS Registry, date of response letter
105	GIS modification request not approved
181	Post closure review requested with fee
12	Activity formerly closed
13	Activity reopened
682	General Liability Clarification (GLC) letter requested with fee
684	GLC letter issued
	292.12 Land Use Control (LUC) OPTIONS
220	LUC for soil at industrial levels
221	LUC for soil at industrial levels removed
222	LUC for cap over contaminated area
223	LUC for cap removed
224	LUC for structural impediment to cleanup
225	LUC for structural impediment removed
226	LUC for active vapor mitigation system
227	LUC for vapor mitigation removed
228	LUC for site-specific condition
229	LUC for site-specific condition removed
230	LUC for local governmental unit (LGU) directed to take an interim action
231	LUC removed for LGU interim action
	Other:
232	Residual soil
233	Residual soil control removed
234	Monitoring well needs to be abandoned
235	Monitoring well abandoned
236	Residual groundwater contamination
237	Groundwater standards met, control removed

Appendix 2: Model Documents

- Deed Notice (Site specific circumstances)
- Deed Notice (Terminate or Amend Previously Recorded Restrictions)
- Example of Determination for Subdividing a Property
- Sample Maintenance Plan
- Sample Inspection Log

Document Number

DEED NOTICE

In Re: [Legal description of the property as it appears on the most recent deed]

STATE OF WISCONSIN)
) ss
COUNTY OF _____) [County where document is signed]

_____, being first duly sworn, on oath deposes and says:

1. That he/she is the owner of the above-described property.
OR [That he/she is an officer in the corporation that owns the property, a partner in the partnership that owns the property, or is an employee of the governmental entity that owns the property and has been authorized by the governing body to sign and record this notice] OR [That he/she is an employee of _____ and is authorized to sign this notice on behalf of the owner of the above-described property, _____.]

2. That approval has been given by the [Wisconsin Department of Natural Resources or other agency with administrative authority for the site] for the closure of an environmental contamination case involving the above-described property on the condition that [Site specific conditions]

Signature: _____
Printed Name: _____

Subscribed and sworn to before me
this ____ day of _____, 20__.

Notary Public, State of _____
My commission _____

This document was drafted by _____.

Recording Area
Name and Return Address

Document Number

DEED NOTICE

In Re: [Legal description of the property as it appears on the most recent deed]

STATE OF WISCONSIN)
) ss
COUNTY OF _____) [County where document is signed]

Recording Area

Name and Return Address

_____, being first duly sworn, on oath deposes and says:

1. That he/she is the owner of the above-described property. OR [That he/she is an officer in the corporation that owns the property, a partner in the partnership that owns the property, or is an employee of the governmental entity that owns the property and has been authorized by the governing body to sign and record this notice]

2. That approval has been given by the Wisconsin Department of Natural Resources to **[terminate or amend]** previously recorded land use restrictions for the above-described property, as documented in the attached letter from the Department, labeled Exhibit A.

3. That this affidavit is being recorded for the purpose of notifying prospective purchasers and other interested persons that **[there are no further restrictions on the use of the above-described property due to the presence of residual contamination or the land use restrictions that were previously required by the Wisconsin Department of Natural Resources have been amended, as provided in Exhibit A].**

Signature: _____

Printed Name: _____

Subscribed and sworn to before me this _____ day of _____, 20__.

Notary Public, State of _____

My commission _____

This document was drafted by _____.

Example Written Determination for Subdividing a Property

Written Determination by the Wisconsin Department of Natural Resources

1. A Declaration of Restrictions (“Restriction”) was recorded in the office of the Register of Deeds for Rock County, Wisconsin, on August 22, 2005, as Document No. 1719505, which Restrictions apply to property (“the Property”) owned by Browntown Mill, Inc. (D/B/A Hammil Farm Center) in the City of Milton, Rock County, Wisconsin.
2. Subsequent to the recording of the Restriction, the Property was legally subdivided for the purpose of Browntown Mill, Inc. selling the portion of the property now identified as “Lot 2” to the City of Milton. A legal description of “Lot 2” is included in the “Affidavit re. Restrictions,” which is attached to this Written Determination.
3. The Restriction described above was required by the Wisconsin Department of Agriculture and Consumer Protection (“DATCP”) in conformance with s. NR 726.05(8)(a), Wis. Admin. Code, as a condition of granting case closure to the Owner of the Property following the clean up of agricultural spills on the Property. Based on the site investigation, supervised by DATCP, the spills were located near the area where chemicals were mixed and loaded and not on the portion of the Property now identified as Lot 2.
4. Therefore, the DNR has determined that, for the portion of the Property now identified as Lot 2, the Restriction should be removed as explained in the “Affidavit re. Restrictions,” which is attached to this Written Determination. The “Affidavit re. Restrictions” replaces the Restriction as to the Lot 2 portion of the Property only.
5. The Restriction remains in effect and is still binding as to the portions of the Property not a part of Lot 2.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

By:

Maintenance Plan Example Template For a Straightforward Site

This maintenance plan example template may be used to begin developing an actual plan at straightforward sites that have only certain post-closure features. Sites that are more complex or contain different features should not use this template. Additional guidance on the content of Operation and Maintenance Plans can be found in “Guidance for Cover Systems as Soil Performance Standard Remedies”, PUBL-RR-709, at <http://dnr.wi.gov/org/aw/rr/archives/pubs/RR709.pdf>.

This example template can be used to begin developing an actual maintenance plan at a simple site that:

- Is closed with contaminated soil remaining that contains contaminants exceeding NR 720 RCLs and the soil presents a direct contact and/or migration to groundwater pathway threat;
- Uses a soil performance standard cover or barrier to address the direct contact and/or migration to groundwater pathway(s);
- Uses a cover or barrier that is pavement and/or a building(s); and
- Can be closed with natural attenuation addressing the groundwater pathway where contaminated soil remains that can leach contaminants into groundwater. Often a cover or barrier is a necessary part of the overall remedial approach to assure natural attenuation continues successfully after closure, because it provides some level of infiltration reduction that should not be changed. These maintenance plans should be developed to assure that occurs after closure is granted.

In some cases, DNR may request the signature of the property owner, to acknowledge the responsibility for maintenance of a remedy. This is generally limited to the situation where someone other than the responsible party is maintaining a cap or engineered control.

A *revised version* of an article about maintenance plan preparation that appeared in the June, 2009 Issue of ReNews is provided after the template. The revised version can also be found on the Resources for Environmental Professionals web page, at <http://dnr.wi.gov/org/aw/rr/technical/index.htm>.

COVER (BARRIER OR CAP) MAINTENANCE PLAN

[DATE]

Property Located at:

[ACTIVITY ADDRESS]

[FID # (if known), WDNR BRRTS/Activity #]

[LEGAL DESCRIPTION] [TAX #]

Introduction

This document is the Maintenance Plan for a [insert type of cover/barrier/cap] at the above-referenced property in accordance with the requirements of s. NR 724.13(2), Wisconsin Administrative Code. The maintenance activities relate to the existing [insert type of cover/barrier/cap] occupying the area over the contaminated groundwater plume or soil on-site.

More site-specific information about this property may be found in:

- The case file in the DNR [Region name] regional office
- BRRTS on the Web (DNR's internet based data base of contaminated sites):
<http://dnr.wi.gov/botw/SetUpBasicSearchForm.do>
- GIS Registry PDF file for further information on the nature and extent of contamination:
<http://dnrmaps.wisconsin.gov/imf/imf.jsp?site=brrts2>; and
- The DNR project manager for _____ County.

Description of Contamination

Soil contaminated by [describe the type of contaminants, e.g., petroleum, metals, chlorinated, etc.] is located at a depth of _____ feet at [describe location, including any off-property location].

Groundwater contaminated by [describe the type of contaminants] is located at a depth of [describe the location, including any off-property location]. The extent of the soil [and groundwater] contamination is shown on the attached [map(s)] [drawings(s)] [label multiple attachments as figures or maps 1, 2, 3 etc].

Description of the [Cover/Barrier/Cap] to be maintained

The [Cover/Barrier/Cap] consists of [describe materials, thicknesses of layers]. It is located [describe location, including any off-property location] as shown on the attached [map(s)] [drawings(s)] [label multiple attachments as figures or maps 1, 2, 3 etc].

[For engineered features: A copy of the engineering specifications for the [cover system or describe the feature] is attached.]

Cover [and [Building] [Slab]] Barrier Purpose

The [insert type of cover/barrier/cap] over the contaminated [groundwater plume] [or soil] serve as a barrier to prevent direct human contact with residual soil contamination that might otherwise pose a threat to human health. [These [insert type of cover/barrier/cap] also act as a partial infiltration barrier to minimize future soil-to-groundwater contamination migration that would violate the groundwater standards in ch. NR 140, Wisconsin Administrative Code.]

Based on the current and future use of the property, the barrier should function as intended unless disturbed.

Annual Inspection

The [insert type of cover/cap] overlying the [contaminated groundwater plume] [or soil] and as depicted in [Figure ___] will be inspected once a year, normally in the spring after all snow and ice is gone, for deterioration, cracks and other potential problems that can cause [additional infiltration into] [or exposure to] underlying soils. The inspections will be performed by the property owner or their designated representative. The inspections will be performed to evaluate damage due to settling, exposure to the weather, wear from traffic, increasing age and other factors. Any area where soils have become or are likely to become exposed [[and] where infiltration from the surface will not be effectively minimized] will be documented. A log of the inspections and any repairs will be maintained by the property owner and is included as Exhibit B, Cap Inspection Log. The log will include recommendations for necessary repair of any areas where underlying soils are exposed [[and] where infiltration from the surface will not be effectively minimized]. Once repairs are completed, they will be documented in the inspection log. A copy of the inspection log will be kept at the address of the property owner and available for submittal or inspection by Wisconsin Department of Natural Resources (“WDNR”) representatives upon their request.

[Note: The WDNR may, in some instances, require in the case closure letter that the inspection log be submitted at least annually after every inspection. If the case closure letter requires that, then add the following sentence to the paragraph above: A copy of the inspection log must be submitted to the WDNR at least annually after every inspection.]

Maintenance Activities

If problems are noted during the annual inspections or at any other time during the year, repairs will be scheduled as soon as practical. Repairs can include patching and filling or larger resurfacing or construction operations. In the event that necessary maintenance activities expose the underlying soil, the owner must inform maintenance workers of the direct contact exposure hazard and provide them with appropriate personal protection equipment (“PPE”). The owner must also sample any soil that is excavated from the site prior to disposal to ascertain if contamination remains. The soil must be treated, stored and disposed of by the owner in accordance with applicable local, state and federal law.

In the event the [insert type of cover/cap] overlying the [contaminated groundwater plume] [or soil] are removed or replaced, the replacement barrier must be equally impervious. Any replacement barrier will be subject to the same maintenance and inspection guidelines as outlined in this Maintenance Plan unless indicated otherwise by the WDNR or its successor.

The property owner, in order to maintain the integrity of the [insert type of cover/cap], will maintain a copy of this Maintenance Plan on-site and make it available to all interested parties (i.e. on-site employees, contractors, future property owners, etc.) for viewing.

Prohibition of Activities and Notification of DNR Prior to Actions Affecting a Cover or Cap

The following activities are prohibited on any portion of the property where [pavement, a building foundation, soil cover, engineered cap or other barrier] is required as shown on the attached map, unless prior written approval has been obtained from the Wisconsin Department of Natural Resources: 1) removal of the existing barrier; 2) replacement with another barrier; 3) excavating or grading of the land surface; 4) filling on capped or paved areas; 5) plowing for agricultural cultivation; or 6) construction or placement of a building or other structure.

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

[MONTH & YEAR]

Site Owner and Operator: [NAME]
[ADDRESS]
[PHONE #]

Signature: _____

(DNR may request signature of affected property owners, on a case-by-case basis)

Property Owner: [NAME]
[ADDRESS]
[PHONE #]

Signature: _____

Consultant: [NAME]
[ADDRESS]
[PHONE #]

WDNR: [PROJECT MANAGER NAME]
[ADDRESS]
[PHONE #]

Exhibit B
Barrier INSPECTION and MAINTENANCE LOG

Inspection Date	Inspector	Condition of Cap	Recommendations	Has recommended maintenance from previous inspection been implemented?

Improve Your Closure Request: Maintenance Plans

There are several ways to expedite approval of a closure request. One important aspect of many closures is a maintenance plan. DNR staff have offered suggestions for improving the quality of the submittal. A revised maintenance plan template can be found in RR 606, "Guidance on Case Closure and the Requirements for Institutional Controls and VPLE Environmental Insurance" at: <http://dnr.wi.gov/org/aw/rr/archives/pubs/RR606.pdf>

Maintenance plans are required whenever an engineering control feature is needed to mitigate risks from contamination that will remain after case closure; be it soil, vapors or groundwater. The feature requiring maintenance may be an engineered soil cap, an asphalt parking lot, a building, a floor, or a venting system. Maintenance plan details will vary, depending on contaminant types and concentrations, design of engineering control features, and anticipated site use.

A good maintenance plan will include the following:

- a. *a brief description of the type, concentration, and extent of contamination* – the maintenance plan needs to include a general description which includes the type of contamination, the level of contamination, and the location of the contamination, including depth, in relation to the feature for which maintenance is required. Include a reference to a map for more specifics.

For example: "Soil contaminated by perchloroethylene, a common drycleaning compound, is located at a depth of 2 to 12 feet in the area behind the loading dock, and in the groundwater in the northeastern quarter of the property. The extent of this soil and groundwater contamination, and the extent of the capped area which needs to be maintained to prevent direct contact with the contaminated soil are identified on the attached map. See fig. xy."

- b. *an accurate map* is important so that the current property owner, any future property owner, or a staff person conducting an audit, can easily identify at the property what feature needs to be maintained, where that feature is located, and the extent of the feature. Identify the extent of contamination on the map as well. In some cases, a diagram may be needed in addition to a map, for example, a floor must be maintained to limit vapor migration.

If a cover (cap or barrier) is required, the actual cover should extend laterally beyond the area of the residual soil contamination. Identify both the horizontal extent of the cover, and the extent of soil contamination on the map, with reference to on-site features. How to determine the appropriate horizontal extent of a cover is discussed in the "Guidance for Cover Systems as Soil Performance Standard Remedies".

<http://dnr.wi.gov/org/aw/rr/archives/pubs/RR709.pdf>

- c. *final construction specifications of any engineering control feature*, such as a cover, cap or barrier or a vapor mitigation system.
- d. If a vapor mitigation system is required to minimize exposure, include the following provisions in the maintenance plan, as appropriate to the site:
 - explain *the required maintenance of the fan/blower/venting system* – provide detailed drawings of system, including electrical connections, and manufacturers' specification sheets for fan/blower.
 - clearly *describe how to verify that an active system is operating properly, and the frequency of monitoring and record keeping* to document proper operation.
 - require *maintenance of the floor as a barrier to vapor intrusion*, especially when vapor concentrations below the floor pose a risk.

- a requirement to *reassess the potential for vapor intrusion if the use of the space changes, or if the air exchange changes* (especially reductions in space).
- e. Include a provision in the maintenance plan for *maintaining an inspection log on site*. The closure letter will identify whether the inspection log needs to be submitted to the DNR as well, and at what frequency.
- f. Include a statement in the maintenance plan that *the following activities are prohibited*, in cases where pavement, a building foundation, a soil cover or an engineered cap or other barrier is used:
 - removal of the existing barrier
 - replacement with another barrier
 - excavating or grading of the land surface
 - filling on capped or paved areas
 - plowing for agricultural cultivation, or
 - construction or placement of a building or other structure

Clarify that that the DNR needs to be notified BEFORE any prohibited action takes place which would disturb a maintenance feature, if some work needs to be done.

- g. Include a statement in the maintenance plan that identifies where more site-specific information may be found: the case file in the regional office, BRRTS on the Web (the DNR's web based tracking system for sites), or the GIS Registry PDF for further information on the nature and extent of contamination. Identify a DNR point of contact for questions on specific actions.

APPENDIX 3: Fees Associated With Case Closure (Ch. NR 749, Wis. Adm. Code, Table 1)

FEE SCHEDULE

See the following for fee information:

http://dnr.wi.gov/org/aw/rr/Services_Fees/index.htm#fees.

Local Governmental Units in the Negotiation/Cost Recovery Process set forth in s. 292.35, Stats., shall pay fees for each service requested.

Fees for modifications to sites, or removal of sites from the GIS Registry are typically \$200 for soil, \$250 for groundwater or for a monitoring well which needs to be abandoned or both fees for soil and groundwater. For more information, see publication RR 5303.

Note: The Department will not review Phase I or Phase II Environmental Assessments, unless they are part of the Prospective Purchaser/Voluntary Party process as set forth in s. 292.15, Stats., or as part of a lender requesting this review in accordance with s. 292.21(1)(c)1.d., Stats.

Appendix 4

Closure Scenarios and Continuing Obligations

Closure Scenario	Authority ¹	Continuing obligations for which the property owner is responsible. ³
Continuing Obligation (ch. 292, Wis. Stats)		
1. A cap is required over a contaminated area due to soil contamination. a. surficial soils (typically the upper 4') exceed ch. NR 720 standards for direct contact, or b. soils at depth (typically below 4') exceed ch. NR 720 standards for protection of groundwater	292.12 Wis. Stats.	<ul style="list-style-type: none"> - Maintain an approved cap in accordance with the maintenance plan. - Inspect the cap and record inspections. - Notify the agency with administrative authority if a change to the cap is proposed.
2. There is a structural impediment that obstructs full investigation or cleanup. Structural impediments are typically buildings, or other structures such as loading pads or overhead power lines.	s. 292.12 & 292.13 Wis. Stats.	<ul style="list-style-type: none"> - Maintain the structure. - Notify the agency with administrative authority if it is planned to be removed or modified in a way that could affect the contamination. - Additional investigation and cleanup may be needed if/when the structural impediment is removed.
3. Soil contamination is at levels appropriate only for industrial land use	s. 292.12, Wis. Stats	<ul style="list-style-type: none"> - Keep the property in industrial use. - Notify the agency with administrative authority if planning to change the use. - A new cleanup and closure plan based on non-industrial soil standards may be needed.
4. A vapor mitigation system is required	s. 292.12 Wis. Stats.	<ul style="list-style-type: none"> - Maintain and operate the vapor mitigation system. - Maintain the floor/pavement in certain cases
5. Compounds of concern are still in use	s. 292.12 Wis. Stats.	<ul style="list-style-type: none"> - Maintain site-specific (exposure) conditions - May be required to operate and maintain a VMS - Notify the agency with administrative authority if the compound of concern will no longer be used.
6. A VMS is required due to site-specific hydrogeologic conditions	s. 292.12 Wis. Stats.	<ul style="list-style-type: none"> - Maintain and operate the vapor mitigation system - Maintain the floor/pavement in certain cases - Maintain the hydrogeologic control system that allows the VMS to work.
7. Closure is approved with site-specific exposure assumptions applied.	s. 292.12 Wis. Stats.	<ul style="list-style-type: none"> - Comply with the specific condition. - Land or property use restrictions may be applied. - Notify the agency with administrative authority if a change is considered for use of the building or property.
8. Residual contamination poses a vapor intrusion risk for future buildings.	s. 292.12 Wis. Stats.	<ul style="list-style-type: none"> - Notify the agency with administrative authority before a building is constructed. Use of vapor control technologies or an assessment of the potential for vapor intrusion are options at that time.
9. There is a site-specific condition in the closure approval letter	s. 292.12 Wis. Stats.	<ul style="list-style-type: none"> - Comply with the specific condition. - Land or property use restrictions may be applied. - Notify the agency with administrative authority if a change is considered for use of the building or property.
10. A local government is exempt from cleanup but is required to take other action under s. 292.11(9)(e)4, based on the intended use of the property	s. 292.12 (3)(b)2. Wis. Stats.	<ul style="list-style-type: none"> - Maintain conditions specified in the GLC letter or other correspondence, and prevent substantial threats to health or the environment. - Notify the DNR if changes to the land use or to the continuing obligation are considered.
Other Continuing Obligations²		
11. Residual Soil Contamination	Ch. 289 Wis. Stats.	<ul style="list-style-type: none"> - Manage contaminated soil as a solid or hazardous waste if it is excavated.
12. Groundwater at or above ch. NR 140 enforcement standard	Ch. 160, Wis. Stats., ch. NR 140, Wis. Adm. Code	<ul style="list-style-type: none"> - Request review and approval from DNR for water supply well construction or reconstruction.⁴ (Work with a well driller on the application form.)
13. Monitoring well needs to be abandoned	ch. NR 141, Wis. Adm. Code	<ul style="list-style-type: none"> - Properly abandon the monitoring well when it is located, or when required or approved monitoring ends.

For all the scenarios:

The continuing obligations are documented in the state's closure approval letter, *except* in the case of LGUs. For LGUs, the continuing obligation may be documented in a general liability clarification letter, or other correspondence from the DNR.

All sites on the GIS Registry are required to obtain approval from the DNR Drinking and Groundwater Program, under ch. NR 812, for well construction or reconstruction. The property owner should work with the well driller to obtain DNR approval.

- The property will be listed on DNR's GIS Registry, *except* where residual soil contamination is below the NR 720 soil standards, and no other continuing obligations apply (#11). The GIS Registry is the publically accessible application through which all continuing obligations are located. The closure letter, or other correspondence for LGUs, will be included in a packet of information available on the GIS Registry.
- "Property owner" refers to the owner of any property upon which a continuing obligation is imposed, regardless of when the obligation was imposed. The continuing obligation runs with the property, and therefore also applies to future property owners. The property may be either a "source property", on which the contamination originated, or it may be a property affected by contamination that migrated from the source property.

Footnotes:

1. s. 292.57, Wis. Stats., authorizes creation of an electronic database to track sites with groundwater or soil standard exceedances, and sites with continuing obligations covered by 292.12.(3)(b), Stats. The continuing obligations for situations #1-10 are based on s. 292.12, Wis. Stats. Authority provided in other statutes or in administrative rules are noted for continuing obligations #11-13.

2. Items 11 – 13 are continuing obligations under statutory authorities other than s. 292.12, Wis. Stats. Most of these properties are included in DNR's GIS Registry. Some of these obligations were formerly established in deed notices or in deed restrictions, prior to June 3, 2006.

3. When there is a requirement to notify the "agency with administrative authority", the appropriate agency to notify is whichever agency prepared and sent the closure letter. Depending on the site, the Department of Natural Resources, the Department of Commerce, or the Department of Agriculture, Trade and Consumer Protection may have jurisdiction over the site. For situation # 10, only the DNR has the authority to direct action.

4. The well construction approval requirement applies to all sites on the GIS Registry, in accordance with ch. NR 812.

Other:

Site-specific information about WDNR requirements at remediation sites closed after August 1, 2002, is available via the GIS Registry at: <http://dnr.wi.gov/org/aw/rr/gis/index.htm>. Additional site-specific information about WDNR requirements at remediation sites closed prior to August 1, 2002, may be recorded at the County Register of Deeds Office.

General information about ALL open and closed remediation sites is available in WDNR files or via the Bureau of Remediation and Redevelopment Tracking System (BRRTS) on the Web (BOTW) at: <http://dnr.wi.gov/org/aw/rr/brrts/index.htm>

Appendix 5

Maintenance Plans for Vapor Mitigation Systems / Vapor Intrusion Response Actions

A vapor mitigation system (VMS) is designed to interrupt an exposure pathway. Such a system does not remove contaminant mass. Vapor mitigation systems include a radon-type sub-slab depressurization system as well as other, more site-specific systems. When a vapor mitigation system is required, a site-specific operation and maintenance plan is essential for ensuring on-going protection of public health and safety.

In order to address issues that could compromise health and safety, an operation and maintenance plan that clearly describes the system parts, locations, and operation needs to be available to owners and renters of a property. Maintenance plans for a site may be combined. However, it is best to include a title which identifies all the continuing obligations covered, and to clearly label each section (i.e. Cap Maintenance, VMS Maintenance, etc.)

Sub-slab depressurization systems or other types of mitigation systems may be needed for many years, especially in cases where remedial actions were not able to remove enough of the contaminant source. (Some other action may be needed to address situations where the remaining building materials themselves have become "sources" of VOCs.) Problems with long-term use of such a mitigation or sub-slab depressurization system include changes in ownership, a limited life-span on system parts such as the fan, and a lack of understanding of the importance of operation of the system.

In certain situations where the vapor intrusion pathway was protected through remedial actions and use of a vapor mitigation system, the case may be closed with conditions for a continuing obligation. In some cases full investigation is not possible or a remedial action may not address the source of contamination due to site-specific circumstances, at the time. In many, but not all cases, operation and maintenance of a sub-slab depressurization system or other type of mitigation system, or maintenance of a floor as part of a vapor mitigation system will likely be required to continue after case closure has been approved.

Vapor Intrusion Pathway Protection Situations in which Closure may be Approved:

There are 5 general situations where a form of vapor intrusion pathway protection has been implemented, in which closure may be approved. Several of these situations will typically have a VMS required to be installed, operated and/or maintained, and a floor may be required to be maintained (A, C, D) to help ensure the VMS remains effective. In some cases, a VMS may be required post-closure, depending on changes in property or building use (B, E). Specific closure conditions required will be based on each site's unique characteristics. The general situations include:

- A) A vapor mitigation system must be operated and maintained in order to limit or prevent vapor intrusion into an occupied building where sub-slab vapor contaminant levels equal or exceed vapor risk screening levels.
- B) Chemicals of concern are still being used in operation of a business. If use of the property changes, the exposure assumptions used may not be protective. In some cases, a VMS may be required based on site-specific circumstances, such as ensuring that neighboring businesses are not affected.
- C) A type of vapor mitigation system may be required due to site-specific hydrogeologic conditions, such as where contaminated groundwater may be in contact with the building foundation
- D) Site-specific vapor inhalation exposure assumptions are used; if use of the property changes, the exposure assumptions used may not be protective
- (E) Sites where residual soil or groundwater contamination (particularly chlorinated VOCs) pose a risk for future buildings may also have a condition of closure to notify the DNR before building occurs.

Vapor Mitigation System Operation and Maintenance Plan Checklist

Operation and maintenance requirements to address various conditions of closure may be included in a single maintenance plan. Include the following information in the operation and maintenance plan for vapor mitigation systems:

I. Passive Vapor Mitigation Systems

For passive systems, the maintenance plan needs to include the following:

1. General Information: System Description, Purpose and Location
 - provide a property description (address, lot, parcel numbers, etc.)
 - date of maintenance plan
 - provide a basic description of
 - the type of system used
 - where it is located
 - what it is designed to do (include contaminant description)
 - identify whether it can be converted to an active system in the future
 - include references to the corresponding maps or diagrams.
2. Information on a labeled diagram or map, with labeled photos:
 - identify where the system is located, both inside and outside the building
 - the layout of the building in relation to the known extent of soil and/or groundwater contamination.
- The location of any sub-slab piping and where it vents to.
3. Include the following items in the documentation in the regularly scheduled inspections;
 - Keep vents open
 - Immediately replace or repair any system components upon discovery of a malfunction. Document actions taken.
 - Take the VMS into account if changes are made to the building
 - Do not breach the barrier
 - Maintain the floor
 - Notify DNR if interior space layouts are changed, if a site-specific vapor attenuation factor was used
 - Notify DNR if interior use changes, if site-specific exposure assumptions were used

II. Active Vapor Mitigation Systems

1. System Description, Purpose and Location
 - provide a property description (address, lot, parcel numbers, etc.)
 - date of maintenance plan
 - provide a basic description of
 - the type of system used,
 - where it is located, and
 - what it is designed to do (include contaminant description).

Include references to the corresponding maps or diagrams.

 - provide a labeled map, and/or labeled photos showing
 - system locations, both inside and outside the building.
 - manometer or pressure gauges
2. System Design
 - provide final construction specifications
 - provide a system diagram; label all system components; especially system parts that need to be monitored. Features might include:
 - electric connections
 - fuses
 - on/off switches – prefer the system be hard wired, or if a switch is necessary, it should be protected from accidental shut-off.
 - manometer or pressure gauges *If a manometer is used, include a photograph or a diagram which clearly shows where the level should be, to indicate proper system operation.*
 - Exhaust
 - HVAC air intake locations; indicate height of exhaust in relation to air intakes and building roof
 - subfloor port
 - piping
 - fan

- alarm, if included

3. System Maintenance

Provide an explanation of:

- *the required maintenance of the fan/blower/venting system* – Provide detailed drawings of the system, including electrical connections, and manufacturers' specification sheets for the fan/blower
- *maintenance of the floor as a barrier to vapor intrusion*, if vapor concentrations below the floor are the source of risk. Address maintaining the structural integrity, and making sure changes due to repairs account for the need to keep the floor as impermeable as at closure.
- *the need to reassess the potential for vapor intrusion if the use of the space changes, or if the air exchange changes* (especially reductions in space).
- *Required actions/specifications in case of system removal or replacement*
- *Repair or replace system components immediately upon discovery of a malfunction. Document actions taken in the inspection log/reports.*

4. Inspections

- *Provide a clear description of how to verify that an active system is operating properly, when repairs need to be made or parts replaced, and identify the frequency of monitoring and record keeping needed to document proper operation.* The closure letter will identify whether the inspection log needs to be submitted to the DNR/agency as well, and at what frequency.
- Include an inspection log that lists key inspection items. (inspector, date, items inspected, state of system, parts replaced, repairs needed, when follow up was completed, etc.)
- Include a provision for *maintaining an inspection log on site.*
- Include a provision for notifying DNR/the agency with administrative authority if any problem occurs for 2 or more successive inspections, when inspections are more frequent than annually.

5. Notifications

- Where changes in land or property use or system changes are required to be reported, include contact names, phone numbers and email addresses for the DNR/agency with administrative authority.

6. Contacts

- List the name, address, telephone number and e-mail address of the property owner, consultant and DNR/agency project manager.
- Provide a "trouble-shooting" contact for reporting problems with the system, of the company that installed the vapor mitigation system.
- Provide a contact at a company under contract for system maintenance, if applicable.

FOR MORE INFORMATION

To view and/or download this and any other publication, or to find out more information about the Remediation and Redevelopment Program, please check out our web site at www.dnr.state.wi.us/org/aw/rr.