

Note: Section NR 141.05 (5) defines "bedrock" to mean " the solid rock underlying any loose surficial material such as soil, alluvium or glacial drift. Bedrock includes but is not limited to limestone, dolomite, sandstone, shale and igneous and metamorphic rock."

(8) "Low priority site" means a site that is contaminated with a petroleum product and meets both of the following criteria:

(a) There is no confirmed petroleum product in groundwater equal to or greater than a preventive action limit, and

(b) There is no evidence of a hazardous substance on the site other than petroleum products that were discharged from a petroleum storage tank.

(9) "Medium priority site" means a site that is contaminated with a petroleum product and meets both of the following criteria:

(a) There is no evidence of a hazardous substance on the site other than petroleum products that were discharged from a petroleum storage tank; and

(b) There is no confirmed petroleum product in groundwater equal to or greater than an enforcement standard.

(10) "Monitoring well" means a groundwater monitoring well designed, installed, constructed and developed in accordance with the requirements of ch. NR 141, for the purpose of monitoring groundwater or obtaining geologic or groundwater related data. The term "monitoring well" includes piezometers and water table observation wells.

(11) "Natural attenuation" means the reduction in the concentration and mass of a substance and its breakdown products in groundwater due to naturally occurring physical, chemical, and biological processes without human intervention or enhancement. These processes include, but are not limited to, dispersion, diffusion, sorption and retardation, and degradation processes such as biodegradation, abiotic degradation and radioactive decay.

(12) "Permeable material" means a subsurface material that is saturated with groundwater and that is not a low permeability material.

(13) "Petroleum product" has the meaning specified in s. 101.143 (1)(f), Stats.

Note: Section 101.143 (1)(f), Stats., defines "petroleum product" to mean "gasoline, gasoline alcohol fuel blends, kerosene, fuel oil, burner oil, diesel fuel or used motor oil." The term "petroleum product" includes substances that are, or once were, constituents of a petroleum product.

(14) "Petroleum storage tank" has the meaning specified in s. 101.144(1)(bm), Stats.

Note: Section 101.144 (1)(bm), Stats., defines “petroleum storage tank” to mean “a storage tank that is used to store petroleum products together with any on-site integral piping or dispensing system.” The term “petroleum storage tank” does not include a pipeline facility.

(15) “Preventive action limit” means a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.15, Stats., and s. NR 140.10 or 140.12.

(16) “Property boundary” has the meaning specified in s. 160.01(6m), Stats.

Note: Section 160.01(6m), Stats., defines “property boundary” to mean “the boundary of the total contiguous parcel of land owned by a common owner, regardless of whether public or private roads run through the parcel.”

(17) “Remedial action” means a response action taken to control, minimize or eliminate the discharge of petroleum products so that they do not present an actual or potential threat to public health, safety or welfare or the environment. The term “remedial action” includes actions taken to restore the environment to the extent practicable and to meet applicable environmental standards, and includes natural attenuation. Examples include containment, treatment, excavation, disposal, recycling or reuse, and any monitoring required to assure that such actions protect public health, safety and welfare and the environment.

(18) “Remediation target” means the contaminant concentration in groundwater or soil, or both, that must be achieved before a site can be granted, or is eligible for, closure under ch. NR 726.

(19) “Responsible person” has the meaning specified in s. 101.144(1)(d), Stats.

Note: Section 101.144(1)(d), Stats., defines “responsible person” to mean “a person who owns or operates a petroleum storage tank, a person who causes a discharge from a petroleum storage tank or a person on whose property a petroleum storage tank is located.”

(20) “Site” means any area where a petroleum product has discharged.

(21) “Site closure” or “site closed” means a determination made pursuant to ch. NR 726 that applicable groundwater quality standards in ch. NR 140 have been met or will be met by relying on natural attenuation and that applicable soil cleanup standards in ch. NR 720 have been met or will be met by relying on a remedial action performance standard.

(22) “Source control” means actions taken to remove or treat soil or groundwater contamination, or both, actions taken to minimize the leaching of soil contamination to groundwater, and actions taken to prevent the migration of groundwater contamination. The term “source control” includes tank removal, the removal of free product and contaminant hot spot removal or treatment.

Note: The term "source control" does not include groundwater monitoring, soil sampling, recycling or reuse of contaminants, reliance on natural attenuation to address residual contamination, or changes to a facility's design, operation, construction or waste handling or disposal practices.

Comm 46.04 Site authority. (1) GENERAL. The assignment of administrative authority for high, medium and low priority petroleum contaminated sites shall be determined according to the following:

- (a) DNR shall have administrative authority for high priority sites.
- (b) Commerce shall have administrative authority for low and medium priority sites.

(2) ADMINISTRATIVE AUTHORITY. The administrative authority of Commerce and DNR for a site includes enforcement under ss. 101.02, 101.144 (2) or (3), or s. 292.11 (7), Stats., setting remediation targets, remediation supervision and direction, and decision making regarding granting or denying closure and deciding whether or not further remedial action is required.

(3) JOINT DECISION-MAKING. Commerce and DNR shall implement a system of joint decision-making for the setting of remediation targets for sites that are competitively bid or bundled with another site or sites pursuant to s. Comm 47.337 (4)(a)3. and 4., and the selection of remedial bids.

(4) CLOSURE DECISIONS FOR SITES WITH GROUNDWATER CONTAMINATION. At any time following completion of the site investigation, the following steps shall be taken for a site with confirmed groundwater contaminant levels equal to or greater than an enforcement standard:

(a) Where a closure request has been submitted by, or on behalf of, a responsible person with the appropriate fee, the DNR shall review the request, make a determination on closure, and if closure is granted, forward a copy of the closure determination to Commerce.

(b) Where a closure request has not been submitted, if Commerce or DNR identifies a site that either agency believes has met its remediation target, DNR may take action to solicit a closure request from the responsible person.

(5) DISPUTE RESOLUTION. Any disputes between Commerce and DNR under sub. (3) or (4) shall be subject to the following dispute resolution process:

(a) Project managers shall discuss their differences, and the basis for them, in an attempt to resolve the dispute.

(b) If the dispute is not resolved by the project managers, the decision shall be referred to the project managers' supervisors.

(c) If the dispute is not resolved by the project managers' supervisors, the decision shall be referred to the appropriate division administrators.

(d) If the dispute still remains unresolved at the division administrator level, the department secretaries shall be the final decision-makers.

Comm 46.05 Site investigation. (1) GENERAL. In conducting an investigation of petroleum contaminated sites, the responsible person or a consultant retained by the responsible person shall meet applicable ch. NR 716 requirements and minimize costs while providing sufficient data necessary for risk assessment screening and decision-making under this section and ss. Comm 46.06, 46.07, 47.337 and 47.339, and chs. NR 720, 722 and 726.

(2) GROUNDWATER PLUME EXPANSION DETERMINATION. Commerce and DNR shall develop an agreed upon methodology for determining if there is evidence of a groundwater-contaminant plume margin expansion and the actions to take if the data provided in the site investigation report are not adequate to make this determination. This methodology shall be utilized in the site investigation process.

(3) LOW PERMEABILITY DETERMINATION. (a) *General.* If groundwater is contaminated with petroleum products, the responsible person or a consultant retained by the responsible person shall determine, as part of the site investigation, if the contaminant plume is completely contained within low permeability materials and does not extend into deposits of laterally extensive permeable material, into a water line or sewer line trench or other utility corridor, into a fracture in clay, or into another feature that acts or is anticipated to act as a migration pathway for groundwater contamination.

(b) *Evaluation of existing site data.* Existing site data shall be used to make the determinations required under par. (a), if existing site data are sufficient to make these determinations. Existing site data may include, but are not limited to, monitoring well development data, monitoring well purging and sampling data, rising and falling head test data, yield test data, pump test data, monitoring well and boring logs, grain size analysis, local and regional geology, subsurface description, depositional environment, expected and actual degree and extent of contamination, or a combination of this data. If the responsible person's consultant finds groundwater contamination in low permeability materials, the responsible person or the consultant shall submit to the agency that has administrative authority for the site, for approval, the results of the evaluation of existing site data that is required by this paragraph, or an explanation of why the existing site data are not sufficient to make the determinations required in par. (a).

(c) *Standard hydraulic conductivity tests.* If the agency with administrative authority for the site determines that the existing site data are insufficient to make the determinations required under par. (a), the responsible person, or a consultant retained by the responsible person, shall then determine the hydraulic conductivity of the saturated materials at the site

utilizing a method described in Appendix A, or a method that has been approved under par. (d), in conformance with the following requirements:

1. Hydraulic conductivity shall be determined for at least one monitoring well within the contaminant plume unless subd. 2 is applicable.

2. Notwithstanding the requirements in subd. 1, the agency with administrative authority for the site may determine that hydraulic conductivity test results for one or more monitoring wells outside of the plume are representative of the hydraulic conductivity of the saturated materials within the plume, based upon a comparison of the monitoring well logs for monitoring wells installed inside and outside of the plume, and that it is not necessary to conduct a hydraulic conductivity test for a monitoring well within the plume.

(d) *Alternative methods for determining hydraulic conductivity.* The agency with administrative authority for the site may approve an alternative method for determining the hydraulic conductivity of the saturated materials at a site if the method meets the objectives of this section. The responsible person, or a consultant retained by the responsible person, shall obtain approval from the agency before using an alternative method. If the agency grants approval for use of the alternative method, the responsible person or the consultant shall submit site data and test results, to the agency with administrative authority for the site, documenting that the objectives of this section have been met.

(4) SUPPLEMENTAL SITE INVESTIGATION INFORMATION. If the site investigation report for the site was submitted prior to the effective date of this rule, supplemental site information, evaluating existing site data to make the determinations required under par. (a), may be required by Commerce or DNR to be included as part of a submittal for approval of a remedial action, setting remediation targets or approving or denying closure. If the agency with administrative authority for the site determines that the existing site data are insufficient to make the determinations required in sub. (3)(a), the responsible person or a consultant retained by the responsible person, shall then determine the hydraulic conductivity of the saturated materials at the site in compliance with the requirements of sub. (3)(c).

Comm 46.06 Risk assessment screening. (1) GENERAL. The risk criteria in sub. (2) for screening sites shall be used to measure the environmental, public health, safety and welfare risks associated with the discharge of petroleum products to determine whether a remedial action shall be required, which could include, but is not limited to, adequate source control and measures to address environmental factors listed in s. Comm 47.337 (3), to set remediation targets, and to determine whether the site may be closed as provided in s. Comm 46.07.

(2) RISK CRITERIA FOR SCREENING SITES. In making decisions under sub. (1), Commerce and DNR shall utilize, as provided in s. Comm 46.07, the following risk criteria for screening sites:

(a) None of the environmental factors as listed in s. Comm 47.337 (3) are present at the site at the time of the completion of the site investigation;

(b) There is no contaminant concentration in any groundwater that has migrated outside of the property boundary, of the property where the source of the contamination is or was located, that is equal to or greater than enforcement standards, except in a public road or street right of way;

(c) No soil contamination exists within 4 feet of the ground surface that exceeds the direct contact soil concentrations listed in Table 1;

(d) No groundwater contamination, in a water sample collected from a monitoring well in low permeability material, which has been identified using the methods specified in s. Comm 46.05, exceeds the groundwater concentrations listed in Table 1;

(e) 1. There is a vertical separation distance of 5 feet or more between any contaminants contained within low permeability material and any permeable material on the site, or the soil and groundwater contaminant concentrations are decreasing with depth within the low permeability material, and

2. No concentration of any contaminant in the groundwater contained within permeable material is equal to or greater than an enforcement standard;

(f) There is no impact to a water line or sewer line trench or other utility corridor along which vapors, free product or contaminated water may flow, or an interbedded permeable soil layer, and there is no impact or evidence of imminent impact to a basement;

(g) There is no enforcement standard exceedance in any groundwater within 1000 feet of a public well; and

(h) There is no enforcement standard exceedance in any groundwater within 100 feet of a private well.

Table 1

Substance	Direct-Contact Soil Contaminant Concentrations (Top 4 ft)	Basis	Contaminant Concentration in Groundwater within Low-Permeability Materials	Basis
	(mg/kg)		(μ g/l)	
Benzene	1.10	Cancer risk	1,500.	Cleanup time
1,2-DCA	0.54	Cancer risk	1,500.	Cleanup time
Ethylbenzene	400.	Soil Saturation Limit	7,100.	Soil Saturation Limit
Toluene	670.	Soil Saturation Limit	20,000.	Soil Saturation Limit
Xylene	470.	Soil Saturation Limit	7,800.	Soil Saturation Limit

Comm 46.07 Site closure and approval and tracking of remedial actions. (1) SITE CLOSURE DECISIONS. Commerce and DNR shall make site closure decisions based upon the following requirements:

(a) Sites where contaminant concentrations are below the enforcement standards at every point on site at which groundwater is monitored, and where all of the risk criteria in s. Comm 46.06 (2) are satisfied, shall be closed without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(b) Sites where contaminant concentrations within permeable material outside of the property boundary, of the property where the source of the contamination is or was located, are below enforcement standards and where contaminant concentrations within low permeability material outside of the property boundary, of the property where the source of the contamination is or was located, are below the groundwater concentrations listed in Table 1, but where contaminant concentrations above enforcement standards exist within the property boundary, of the property where the source of the contamination is or was located, shall be offered closure with institutional controls that satisfy the requirements of ch. NR 726, if all of the risk criteria in s. Comm 46.06 (2), except ss. Comm 46.06 (2)(b) or 746.06 (2)(e)2., are satisfied. If the owners of all properties on the site with enforcement standard exceedances sign and record a groundwater use restriction, as required under s. NR 726.05 (2)(b)4., the site shall be closed. If the owner of any property on the site with an enforcement standard exceedance does not sign and record a groundwater use restriction, additional remedial action, other than the utilization of natural attenuation, may not be required for areas where all contaminant concentrations that are equal to or greater than enforcement standards are found in low permeability material, except in situations where a risk or potential risk exists to public health, safety or welfare or the environment from the residual

groundwater contamination in the low permeability material, and where a technically feasible and cost effective response is available. Funding under s. 101.143, Stats., shall be terminated by Commerce for sites that are offered closure under this paragraph, except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

Note: DNR is currently developing a geographic information system (GIS) registry as a means for tracking residual groundwater contamination which could replace the groundwater use restriction requirement in ch. NR 726. However, until the GIS registry is operable and ch. NR 726 is amended to allow registration on a GIS registry as a substitute for recording a groundwater use restriction, groundwater use restrictions will continue to be used as the method for notifying future property owners and other interested persons of the existence of the residual groundwater contamination.

(c) After an investigation that satisfies the requirements of ch. NR 716, the agency with administrative authority for the site may approve of site closure under ch. NR 726 for sites that do not meet all of the risk criteria in s. Comm 46.06(2) if the requirements of ch. NR 726 are satisfied, or may determine that additional remedial action other than reliance on natural attenuation is not required even though all of the requirements for closure in ch. NR 726 have not been satisfied, without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(d) If the agency with administrative authority for a site determines that pars. (a), (b) and (c) do not apply to the site, the responsible person shall be required to conduct a remedial action, and shall be entitled to reimbursement under ch. Comm 47 for all eligible costs of the remedial action.

Note: In compliance with s. 160.21(2)(a), Stats., s. NR 140.22(2)(b) establishes the point of standards application to determine whether an enforcement standard has been attained or exceeded, for facilities, practices or activities that do not have an established design management zone, as "any point of present groundwater use and any point beyond the boundary of the property on which the facility, practice or activity is located and s. NR 140.22 (2)(c) establishes a point of standards application for "discharges, releases, sites or facilities" regulated under s. 292.11 or 292.31, Stats. (among other statutes) as "every point at which groundwater is monitored." The environmental factors in s. Comm 47.337 (3) and the other risk criteria in s. Comm 46.06 (2) require an evaluation of groundwater contaminant concentrations at all of these points of standards application.

(2) CLOSURE BASED ON REMEDIATION TARGETS. When the remediation targets developed under s. Comm 46.04 (3) are achieved, the site shall be closed utilizing an institutional control that satisfies the requirements of ch. NR 726, if required, without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(3) DETERMINATION OF COMPLIANCE WITH ENFORCEMENT STANDARDS OR REMEDIATION TARGETS. When determining whether contaminant

concentrations at a site are above or below either an enforcement standard or a remediation target, recognition shall be made of the impact of error of measurement, repeatability of test results and statistical significance. Commerce and DNR shall develop, by June 30, 1999, a process for taking these considerations into account and then revise or adopt administrative rules as appropriate.

(4) TRACKING OF REMEDIATION PROGRESS. (a) Commerce and DNR shall establish a system for electronically tracking remediation progress and shall use the tracking system to determine if remediation funding under s. 101.143, Stats., should end or if a site closure request should be submitted.

(b) Commerce and DNR shall jointly require and enforce the use of the electronic reporting system by claimants for reimbursement under s. 101.143, Stats.

Comm 46.08 Transfer of sites. (1) GENERAL. Except as provided in sub. (2) or (3), DNR shall determine whether Commerce or DNR has administrative authority for a site. Until that determination is made, DNR has administrative authority for the site. DNR shall make this determination within 60 days after receipt by DNR of the site investigation report, unless any of the following apply:

(a) DNR has requested additional information from a responsible person or a consultant retained by the responsible person after reviewing the site investigation report and the requested information has not been submitted to DNR.

(b) The site is the subject of an enforcement action under s. 292.11, Stats., initiated by DNR.

(c) Other circumstances over which DNR has no control have prevented DNR from making a site classification determination.

(2) CONSULTANT DETERMINATION. Consultants performing site investigations may determine, as part of a joint agency site classification pilot, whether a site is high, medium or low priority and submit the investigation report directly to the agency they determine to have administrative authority under s. Comm 46.04 (1).

(3) CHANGES IN CLASSIFICATION. If a site is classified as high, medium or low priority, and DNR or Commerce determines that the classification is incorrect, the agency making the determination that a site has been incorrectly classified shall transfer the site file and all related data to the other agency within 14 days after making the determination, if the other agency has administrative authority for the reclassified site.

(4) LIST OF SITES IN REMEDIATION. Commerce and DNR shall develop and maintain a reconciled list of sites in remediation including data on remediation targets, risk criteria for screening sites, expected closure costs and other relevant data.

Appendix A

STANDARD METHODS FOR DETERMINING HYDRAULIC CONDUCTIVITY

(1) TRANSMISSIVITY TEST. (a) To conduct a transmissivity test, a volume of water is removed from a monitoring well and the water level recovery in the well is measured after a specified time has elapsed. The resultant data may be used to determine the hydraulic conductivity of the area surrounding the monitoring well.

(b) For transmissivity tests, groundwater may not be removed from the well 12 hours prior to beginning the test.

(c) Transmissivity tests shall be conducted in a monitoring well as follows:

1. If using a pump, set the pump intake in the lower half of the screen and allow sufficient time for the water level in the well to equilibrate.

2. Measure and record the initial depth to water and well depth. Subtract the difference to determine the saturated interval of the well, in feet.

3. Pump or bail 2 gallons of groundwater from the well within 2 to 3 minutes.

4. Record the start time and finish time to remove 2 gallons from the well.

5. Measure and record the water level in the well immediately after 2 gallons is removed from the well.

6. After the applicable time listed in Table A has elapsed, measure and record the water level in the well.

7. Calculate hydraulic conductivity utilizing Formula A.

TABLE A

Saturated Interval of Well (feet)	Time (minutes)
5	190
6	160
7	140
8	120
9	105
10	95

FORMULA A

Step 1: Calculate $T = q / 4 \pi s t$

Where: T = coefficient of transmissivity, in gallons per day per foot (gpd/ft)

q = volume of groundwater removed (2 gallons)

s = measured residual drawdown, in feet (water level at time in Table A minus initial depth to water in par. (c) 2., above)

t = time, in days, from Table A. (convert minutes to days by dividing by 1440)

Step 2: Convert T in gpd/ft to T in ft^2/sec by dividing by 646272.

Step 3: Calculate $K = T/b$

Where: K = hydraulic conductivity, in ft/sec

b = saturated interval of well, in feet, as measured in par. (c) 2., above.

Step 4: Convert K in ft/sec to K in cm/sec by multiplying by 30.48.

(2) RISING AND FALLING HEAD TEST. (a) To conduct a rising head test, a volume of groundwater is instantaneously removed from a well and the rate of water level recovery in the well is measured. To conduct a falling head test, a solid object is instantaneously inserted into a well and the rate at which groundwater flows out of the well is measured. The results of both tests may be used to determine the hydraulic conductivity of the area surrounding the well. Both tests shall be conducted in accordance with procedures specified by ASTM in guidance number D 4044-96 and D 5912-96, or their successor, and the relevant criteria in pars. (b) and (c) or (d).

Note: ASTM guidance number D 5912-96 is based on the Bouwer and Rice method. Rising head test is also referred to as bail-down test, slug-out test and slug extraction test. Falling head test is also referred to as slug-in test and slug injection test. The criteria listed under pars. (a) to (c) are intended for determining the hydraulic conductivity of low permeability materials. They may not be applicable to saturated materials having a hydraulic conductivity greater than 1×10^{-5} cm/sec.

(b) For both the rising and falling head tests, groundwater may not be removed from the well 12 hours prior to the test, the well shall have at least five feet of water within the well screen or well casing, or both, prior to each test, and the borehole diameter of the well shall be at least six inches.

(c) Hydraulic conductivity shall be determined only by rising head tests in wells where the water table intersects the well screen and shall be conducted in accordance with all of the following criteria:

1. Assume the filter pack's specific yield is 0.20 to 0.25, unless measured by the manufacturer.
2. Remove a minimum of 0.75 gallons and a maximum of 1.5 gallons during the test.
3. Each test shall continue for 150 minutes or more unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than 1×10^{-5} centimeters per second.
4. Determine if the hydraulic conductivity of the well is less than or equal to 1×10^{-5} centimeters per second based upon the test results.

(d) Both rising head and falling head tests may be conducted in piezometers and shall be conducted in accordance with all of the following criteria:

1. Remove a minimum of 0.75 gallons for the rising head test and add a slug with a volume equivalent to 0.75 gallons or more for the falling head test.
2. The volume of groundwater water removed from the well shall be less than the total volume of water within the well casing above the top of the well screen.
3. The sum of the filter pack length and the filter pack seal shall be used as the length of well screen when calculating hydraulic conductivity.
4. The drawdown in the well shall not exceed the top of the filter pack seal.
5. The length of well screen shall be at least four feet.
6. Each test shall continue for 45 minutes or more per well unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than 1×10^{-5} centimeters per second.
7. Determine if the hydraulic conductivity of the well is less than or equal to 1×10^{-5} centimeters per second based upon the test results.

(End)

FISCAL ESTIMATE
DOA-2048 (R10/92)

ORIGINAL
 CORRECTED

UPDATED
 SUPPLEMENTAL

LRB or Bill No./Adm. Rule No.

ILHR 46

Amendment No. if Applicable

Subject: Petroleum Environmental Cleanup Fund Interagency Responsibilities

Fiscal Effect

State: No State Fiscal Effect

Check columns below only if bill makes a direct appropriation
or affects a sum sufficient appropriation

Increase Existing Appropriation Increase Existing Revenues
 Decrease Existing Appropriation Decrease Existing Revenues
 Create New Appropriation

Increases Costs - May be possible to Absorb
Within Agency's Budget Yes No

Decrease Costs

Local: X No local government costs

1. Increase Costs
 Permissive Mandatory

2. Decrease Costs
 Permissive Mandatory

3. Increase Revenues
 Permissive Mandatory

4. Decrease Revenue
 Permissive Mandatory

5. Types of Local Governmental Units Affected:

Towns Villages Cities

Counties Others _____

School Districts WTCS Districts

Fund Sources Affected

GPR FED PRO PRS SEG SEG-S

Affected Ch. 20 Appropriations

Assumptions Used in Arriving at Fiscal Estimate

The Department is promulgating the rule to implement new provisions in the working relationship between the Departments of Natural Resources and Commerce in the administration of the PECFA program. At this point in time, the longer term fiscal impact of these changes cannot be determined. A workload study will follow that will be completed by the two agencies after implementation and assessment of impact.

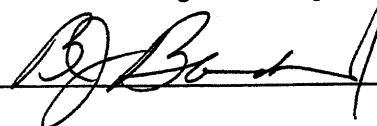
Long-Range Fiscal Implications

None known.

Agency/Prepared by: (Name & Phone No.)

Bill Morrissey 266-7605

Authorized Signature/Telephone No.



Date

7/6/99

FISCAL ESTIMATE WORKSHEET
 Detailed Estimate of Annual Fiscal Effect
 DOA-2047(R10/92)

ORIGINAL UPDATED
 CORRECTED SUPPLEMENTAL

LRB or Bill No./Adm. Rule No.
 ILHR 46

Amendment No.

Subject: Petroleum Environmental Cleanup Fund Interagency Responsibilities

I. One-time Costs or Revenue Impacts for State and/or Local Government (do not include in annualized fiscal effect):

II. Annualized Costs:	Annualized Fiscal impact on State funds from:	
	Increased Costs	Decreased Costs
A. State Costs By Category		
State Operations - Salaries and Fringes	\$	\$ -
(FTE Position Changes)	(0 FTE)	(- 0
State Operations - Other Costs		-
Local Assistance		-
Aids to Individuals or Organizations		-
TOTAL State Costs By Category	\$ 0	\$ - 0
B. State Costs By Source of Funds	Increased Costs	Decreased Costs
GPR	\$	\$ -
FED		-
PRO/PRS	0	- 0
SEG/SEG-S	0	- 0
III. State Revenues- Complete this only when proposal will increase or decrease state revenues (e.g., tax increase, decrease in license fee, etc.)	Increased Rev.	Decreased Rev.
GPR Taxes	\$	\$ -
GPR Earned		-
FED		-
PRO/PRS	0	- 0
SEG/SEG-S	0	- 0
TOTAL State Revenues	\$ 0	\$ - 0

NET ANNUALIZED FISCAL IMPACT

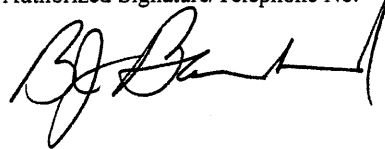
	<u>STATE</u>	<u>LOCAL</u>
NET CHANGE IN COSTS	\$ 0	\$ 0
NET CHANGE IN REVENUES	\$ 0	\$ 0

Agency/Prepared by: (Name & Phone No.)

Authorized Signature/Telephone No.

Date

Bill Morrissey 266-7605



7/6/99

CHAPTER Comm 46
PETROLEUM ENVIRONMENTAL CLEANUP FUND INTERAGENCY
RESPONSIBILITIES

Comm 46.01 Purpose. The purpose of this rule is to identify the roles, processes and procedures that guide the departments of commerce and natural resources in the administration of their respective responsibilities for high, medium and low priority petroleum-contaminated sites under ss. 101.143, 101.144, 292.11 and 292.31, and ch. 160, Stats. ~~The requirement, which is the basis of this rule, was established in 1995 Act 27 and mandated that the two agencies determine the:~~

- ~~(1) Respective functions of the two departments.~~
- ~~(2) Procedures to ensure that remedial actions taken under this section are consistent with actions taken under s. 292.11, Stats.~~
- ~~(3) Procedures, standards and schedules for determining whether the site of a discharge of a petroleum product from a petroleum storage tank is classified as high, medium or low priority. This rule codifies portions of a memorandum of understanding that has been signed by the two agencies, as required by s. 101.144 (3m), Stats.~~

Comm 46.02 Applicability. This chapter only applies to sites where petroleum products have discharged from petroleum storage tanks.

Comm 46.02 46.03 Definitions. In this chapter:

- (1) "Commerce" means the department of commerce.
- (2) "Discharge" has the meaning specified in s. 292.01 (3), Stats.

NOTE: Under s. 292.01 (3), Stats., "discharge" means, but is not limited to, "spilling, leaking, pumping, pouring, emitting, emptying or dumping."

~~(3) "Developable groundwater" means a formation, excluding bedrock, that can yield 0.2 gallons per minute or more of groundwater, determined by an open bore hole.~~

- ~~(4)~~ (3) "DNR" means the department of natural resources.
- (5) (4) "Enforcement standard" means a numerical value expressing the concentrations of a substance in groundwater which is adopted under s. 160.07, Stats., and s. NR 140.10 or s. 160.09, Stats., and s. NR 140.12.

(5) “Groundwater” has the meaning specified in s. 160.01 (4), Stats.

NOTE: Section 160.01 (4), Stats., defines “groundwater” to mean “any water of the state, as defined in s. 281.01 (18), occurring in a saturated subsurface geological formation of rock or soil. Section 281.01 (18), Stats., defines “waters of the state” to include “those portions of Lake Michigan and Lake Superior within the boundaries of this state, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within this state or its jurisdiction.”

(6) “High priority site” means a ~~remediation~~ site that is contaminated with a petroleum product and meets one or more of the following criteria:

(a) ~~Presence of a hazardous substance~~ One or more hazardous substances other than petroleum products from a petroleum product storage tank system are present at the site.

(b) Contamination to an area of exceptional environmental value where the discharge would pose a greater than normal threat from the site discharges to a sensitive environment as defined in s. NR 700.03 (55).

NOTE: Section NR 700.03 (55) defines “sensitive environment” to mean “an area of exceptional environmental value, where a discharge could pose a greater threat than a discharge to other areas, including but not limited to: wetlands; habitat used by state or federally designated endangered or threatened species; national or state fish and wildlife refuges and fish and wildlife management areas; state and federal designated wild and scenic rivers, designated state riverways and state designated scenic urban waterways; riparian areas; rookeries; cold water communities as defined in s. NR 102.04 (3)(b), Lakes Superior and Michigan and the Mississippi river, environmentally sensitive areas and environmental corridors identified in area-wide water quality management plans, special area management plans, special wetland inventory studies, advanced delineation and identification studies and areas designated by the U.S. EPA under section 404 (c), 33 USC 1344 (c); calcareous fens; state forests, parks, trails and recreational areas; state and federal designated wilderness areas; designated or dedicated state natural areas established under ss. 23.27 to 23.29, Stats.; wild rice waters as listed in s. NR 19.09; and any other waters identified as outstanding or exceptional resource waters in ch. NR 102.”

(c) ~~Confirmed groundwater contamination where any compound detected~~ Groundwater contamination that is equal to or greater than an established enforcement standard has been confirmed at the site.

(7) “Low permeability material” means subsurface material above bedrock, as defined in s. NR 141.05 (5), that is saturated with groundwater and has a hydraulic conductivity less than or equal to 1×10^{-5} centimeters per second as determined by a method specified in s. Comm 46.05.

NOTE: Section NR 141.05 (5) defines “bedrock” to mean “the solid rock underlying any loose surficial material such as soil, alluvium or glacial drift. Bedrock includes but is not limited to limestone, dolomite, sandstone, shale and igneous and metamorphic rock.”

~~(7)~~ (8) “Low priority site” means a ~~remediation site where~~ that is contaminated with a petroleum product and meets both of the following criteria:

(a) There is ~~only no confirmed petroleum contamination and no threat to~~ product in groundwater equal to or greater than a preventive action limit , and

(b) ~~No~~ There is no evidence of a hazardous substance other than the petroleum product that was on the site other than petroleum products that were discharged from the a petroleum product storage tank system.

(8) “Medium priority site” means a ~~remediation site that~~ is contaminated with a petroleum product and meets both of the following criteria:

(a) ~~No~~ There is no evidence of contamination by a hazardous substance on the site other than the petroleum product products that were, which was discharged from the a petroleum storage tank system; and

(b) ~~No~~ There is no confirmed petroleum product in groundwater contamination at or above the equal to or greater than an enforcement standard.

(10) “Monitoring well” means a groundwater monitoring well designed, installed, constructed and developed in accordance with the requirements of ch. NR 141, for the purpose of monitoring groundwater or obtaining geologic or groundwater related data. The term “monitoring well” includes piezometers and water table observation wells.

(11) “Natural attenuation” means the reduction in the concentration and mass of a substance and its breakdown products in groundwater due to naturally occurring physical, chemical, and biological processes without human intervention or enhancement. These processes include, but are not limited to, dispersion, diffusion, sorption and retardation, and degradation processes such as biodegradation, abiotic degradation and radioactive decay.

(12) “Permeable material” means a subsurface material that is saturated with groundwater and that is not a low permeability material.

(13) “Petroleum product” has the meaning specified in s. 101.143 (1)(f), Stats.

NOTE: Section 101.143 (1)(f), Stats., defines “petroleum product” to mean “gasoline, gasoline alcohol fuel blends, kerosene, fuel oil, burner oil, diesel fuel or used motor oil.” The term “petroleum product” includes substances that are, or once were, constituents of a petroleum product.

(14) “Petroleum storage tank” has the meaning specified in s. 101.144(1)(bm), Stats.

NOTE: Section 101.144 (1)(bm), Stats., defines “petroleum storage tank” to mean “a storage tank that is used to store petroleum products together with any on-site integral piping or dispensing system.” The term “petroleum storage tank” does not include a pipeline facility.

(15) “Preventive action limit” means a value expressing the concentration of a substance in groundwater which is adopted under s. 160.15, Stats., and s. NR 140.10 or 140.12.

(16) “Property boundary” has the meaning specified in s. 160.01(6m), Stats.

NOTE: Section 160.01(6m), Stats., defines “property boundary” to mean “the boundary of the total contiguous parcel of land owned by a common owner, regardless of whether public or private roads run through the parcel.”

(17) “Remedial action” means a response action taken to control, minimize or eliminate the discharge of petroleum products so that they do not present an actual or potential threat to public health, safety or welfare or the environment. The term “remedial action” includes actions taken to restore the environment to the extent practicable and to meet applicable environmental standards, and includes natural attenuation. Examples include containment, treatment, excavation, disposal, recycling or reuse, and any monitoring required to assure that such actions protect public health, safety and welfare and the environment.

~~(9)~~ (18) “Remediation target” means the ~~contamination~~ contaminant concentration level(s) at which a site will in groundwater or soil, or both, that must be achieved before a site can be granted, or is eligible for, closure utilizing an institutional control option, including a groundwater use restriction, or any other appropriate tool under ch. NR 726.

(19) “Responsible person” has the meaning specified in s. 101.144(1)(d), Stats.

NOTE: Section 101.144(1)(d), Stats., defines “responsible person” to mean “a person who owns or operates a petroleum storage tank, a person who causes a discharge from a petroleum storage tank or a person on whose property a petroleum storage tank is located.”

(20) “Site” means any area where a petroleum product has discharged.

(21) “Site closure” or “site closed” means a determination made pursuant to ch. NR 726 that applicable groundwater quality standards in ch. NR 140 have been met or will be met by relying on natural attenuation and that applicable soil cleanup standards in ch. NR 720 have been met or will be met by relying on a remedial action performance standard.

(22) “Source control” means actions taken to remove or treat soil or groundwater contamination, or both, actions taken to minimize the leaching of soil contamination to

groundwater, and actions taken to prevent the migration of groundwater contamination. The term “source control” includes tank removal, the removal of free product and contaminant hot spot removal or treatment.

NOTE: The term “source control” does not include groundwater monitoring, soil sampling, recycling or reuse of contaminants, reliance on natural attenuation to address residual contamination, or changes to a facility’s design, operation, construction or waste handling or disposal practices.

Comm 46.03 46.04 Site authority. (1) GENERAL. The assignment of administrative authority for high, medium and low priority petroleum contaminated sites shall be determined according to the following:

- (a) ~~The~~ DNR shall have administrative authority for high priority sites.
- (b) Commerce shall have administrative authority for low and medium priority sites.

(2) ADMINISTRATIVE AUTHORITY. The administrative authority of Commerce and DNR for a site falling under an agency's jurisdiction includes but is not limited to includes enforcement under ss. 101.02, 101.144 (2) or (3), or s. 292.11 (7), Stats., setting remediation targets, remediation supervision and direction, referrals for legal action, and decision making regarding granting or denying closure or an approval for no and deciding whether or not further remedial action is required.

(3) JOINT ADMINISTRATION DECISION-MAKING. ~~The departments of Commerce and DNR shall implement a system of joint decision-making for: (a) The the setting of remediation targets for sites that are competitively bid or bundled with another site(s) site or sites pursuant to s. Comm 47.337 (4)(a)3. and 4., When the targets are achieved, the site shall be closed without requiring or reimbursing for additional remedial efforts except for otherwise eligible post closure costs. (b) The and the selection of remedial bids.~~

(4) CLOSURE DECISIONS FOR SITES WITH GROUNDWATER CONTAMINATION. At any time following completion of the site investigation, the following steps shall be taken for For any a site with confirmed groundwater contamination contaminant levels equal to or greater than the an enforcement standard: following completion of the site investigation and for which a closure request has been submitted, the following steps will be taken:

(a) A site Where a closure request is prepared and has been submitted to DNR by, or on behalf of, a responsible person with the appropriate fee, the DNR shall review the request, make a determination on closure, and if closure is granted, forward a copy of the closure determination to Commerce.

~~(b) The DNR reviews the request and makes a determination on closure, either with or without institutional controls or tools.~~

~~(c) The DNR will forward a copy of all closure determinations to Commerce.~~

~~(d) If (b) Where a closure request has not been submitted, if Commerce or DNR identifies a site they believe that either agency believes has met its remediation target(s), but has not submitted a closure request, they may request DNR may take action to solicit a closure request from the site owner responsible person.~~

(5) DISPUTE RESOLUTION. Any disputes between ~~the agencies~~ Commerce and DNR under subs. (3) or (4) ~~will~~ shall be subject to the following dispute resolution process:

(a) Project managers ~~will~~ shall discuss their differences, and the basis for them, in an attempt to resolve the dispute.

(b) If the dispute is not resolved by the project managers, the decision ~~will~~ shall be referred to the project managers' supervisors.

(c) If the dispute is not resolved by the project managers' supervisors, the decision shall be referred to the appropriate division administrators; if

(d) If the dispute still remains unresolved at the division administrator level, the department Secretaries shall be the final decision-makers.

~~Comm 46.04~~ 46.05 Site investigation. (1) GENERAL. ~~The~~ In conducting an investigation of petroleum contaminated sites, the responsible person or a consultant retained by the responsible person shall be conducted in a manner designed to meet applicable ch. NR 716 requirements and to minimize costs while providing sufficient data necessary for risk assessment screening and remediation decision-making under this section and ss. Comm 46.06, 46.07, 47.337 and 47.339, and chs. NR 720, 722 and 726.

(2) GROUNDWATER PLUME EXPANSION DETERMINATION. ~~The departments~~ Commerce and DNR shall develop an agreed upon methodology for determining if there is evidence of an expanding groundwater-contaminant plume margin expansion and the actions to take if the data provided through the in the site investigation report are is not adequate to make this determination. This methodology will be part of the shall be utilized in the site investigation process.

(3) LOW PERMEABILITY DETERMINATION. (a) *General.* If groundwater is contaminated with petroleum products, the responsible person or a consultant retained by the responsible person shall determine, as part of the site investigation, if the contaminant plume is completely contained within low permeability materials and does not extend into deposits of laterally extensive permeable material, into a water line or sewer line trench or other utility corridor, into a fracture in clay, or into another feature that acts or is anticipated to act as a migration pathway for groundwater contamination.

(b) *Evaluation of existing site data.* Existing site data shall be used to make the determinations required under par. (a), if existing site data are sufficient to make these determinations. Existing site data may include, but are not limited to, monitoring well development data, monitoring well purging and sampling data, rising and falling head test data, yield test data, pump test data, monitoring well and boring logs, grain size analysis, local and regional geology, subsurface description, depositional environment, expected and actual degree and extent of contamination, or a combination of this data. If the responsible person's consultant finds groundwater contamination in low permeability materials, the responsible person or the consultant shall submit to the agency that has administrative authority for the site, for approval, the results of the evaluation of existing site data that is required by this paragraph, or an explanation of why the existing site data are not sufficient to make the determinations required in par. (a).

(c) *Standard hydraulic conductivity tests.* If the agency with administrative authority for the site determines that the existing site data are insufficient to make the determinations required under par. (a), the responsible person, or a consultant retained by the responsible person, shall then determine the hydraulic conductivity of the saturated materials at the site utilizing a method described in Appendix A, or a method that has been approved under par. (d), in conformance with the following requirements:

1. Hydraulic conductivity shall be determined for at least one monitoring well within the contaminant plume unless subd. 2 is applicable.

2. Notwithstanding the requirements in subd. 1, the agency with administrative authority for the site may determine that hydraulic conductivity test results for one or more monitoring wells outside of the plume are representative of the hydraulic conductivity of the saturated materials within the plume, based upon a comparison of the monitoring well logs for monitoring wells installed inside and outside of the plume, and that it is not necessary to conduct a hydraulic conductivity test for a monitoring well within the plume.

(d) *Alternative methods for determining hydraulic conductivity.* The agency with administrative authority for the site may approve an alternative method for determining the hydraulic conductivity of the saturated materials at a site, if the method meets the objectives of this section. The responsible person, or a consultant retained by the responsible person, shall obtain approval from the agency before using an alternative method. If the agency grants approval for use of the alternative method, the responsible person or the consultant shall submit site data and test results, to the agency with administrative authority for the site, documenting that the objectives of this section have been met.

(4) SUPPLEMENTAL SITE INVESTIGATION INFORMATION. If the site investigation report for the site was submitted prior to [insert the effective date of this rule], supplemental site information, evaluating existing site data to make the determinations required under par. (a), may be required by Commerce or DNR to be included as part of a submittal for approval of a remedial action, setting remediation targets or approving or denying closure. If the agency with administrative authority for the site determines that the existing site data are

insufficient to make the determinations required in sub. (3)(a), the responsible person or a consultant retained by the responsible person, shall then determine the hydraulic conductivity of the saturated materials at the site in compliance with the requirements of sub.(3)(c).

Comm 46.05 46.06 Risk assessment screening. (1) GENERAL. ~~Jointly created~~ The risk criteria in sub. (2) for screening sites assessment protocols, shall be used to measure the environmental, public health, safety and health welfare risks associated with the discharge of petroleum contaminations products and to determine whether what a required remedial action level shall be required, which could include, but is not be limited to, adequate source control and measures to address environmental risk factors listed in s. Comm 47.337 (3), to set remediation targets, and to determine, or whether the site may be closed as provided in s. Comm 46.07 without additional action.

(2) RISK CRITERIA FOR SCREENING SITES. ~~Decisions~~ In making decisions under sub. (1), regarding the remediation and closure of sites Commerce and DNR shall be based upon an application of utilize, as provided in s. Comm 46.07, the following risk criteria for screening sites: The following risk criteria will be used in decision making:

(a) ~~No~~ None of the environmental factor(s), factors as defined listed in chs. Comm 47.337 (3) are present at the site at the time of the completion of the site investigation exists;

(b) ~~Site closure may not take place until environmental factors, that are identified, are addressed;~~

(b) ~~(c) Contamination~~ There is no contaminant concentration in any groundwater that has migrated outside of the property boundary, of the property where the source of the contamination is or was located, that is below the equal to or greater than enforcement standards off-site except in a public roadway or road or street right of way;

(c) ~~(d) No soil contamination above Table 46.05 values occurs~~ exists within 4 feet of the ground surface that exceeds the direct contact soil concentrations listed in Table 1;

(d) ~~(e) On-site~~ No groundwater contamination, in a water sample collected from a monitoring well in low permeability material, which has been identified using the methods specified in s. Comm 46.05, exceeds the groundwater concentrations listed in Table 1 non-developable groundwater water, does not exceed 300 times the enforcement standard;

(e) ~~(f) 1.~~ There is a vertical separation distance between contamination and the developable groundwater of 5 feet or more between any contaminants contained within low permeability material and any permeable material on the site, or or the soil and groundwater contaminant concentrations are the contamination is decreasing with depth within the low permeability material, and in the soil, as it approaches the developable groundwater;

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2. No concentration of any contaminant in the groundwater contained within permeable material is equal to or greater than an enforcement standard;

(f) (g) There is no impact or potential impact to a receptor of concern as defined by the departments to a water line or sewer line trench or other utility corridor along which vapors, free product or contaminated water may flow, or an interbedded permeable soil layer, and there is no impact or evidence of imminent impact to a basement;

(g) (h) There is no enforcement standard exceedance in any groundwater within 1000 feet of a public well; and

(h) (i) There is no enforcement standard exceedance in any groundwater within 100 feet of a private well.

TABLE 46.05

Benzene	0.620 mg/kg
1,2 DCA	0.340 mg/kg
Ethylbenzene	230.0 mg/kg
Toluene	520.0 mg/kg
Xylene	860.0 mg/kg

TABLE 1

<u>Substance</u>			
<u>Benzene</u>			
<u>1,2-DCA</u>			
<u>Ethylbenzene</u>			
<u>Toluene</u>			
<u>Xylene</u>			

Comm 46.06 46.07 Site closure and approval and tracking of remedial actions. (1)
GENERAL SITE CLOSURE DECISIONS. The actions of the DNR and Commerce and DNR in making shall make site closure or no further action decisions and in approving remedial actions on a site shall incorporate that based upon the following requirements:

(a) Sites where ~~contamination is determined to be~~ contaminant concentrations are below the enforcement standards at every point on site at which groundwater is monitored and below the enforcement standard off site, and no environmental factors exist, where all of the risk criteria in s. Comm 46.06 (2) are satisfied, shall be closed without requiring or reimbursing reimbursement from Commerce for additional remedial efforts actions except for otherwise eligible post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(b) Sites ~~with~~ where ~~contaminant concentrations within permeable material outside of the property boundary, of the property where the source of the contamination is or was located, are below above the enforcement standards on site but and where contaminant concentrations within low permeability material outside of the property boundary, of the property where the source of the contamination is or was located, are below the groundwater concentrations listed in Table 1, but where contaminant concentrations above enforcement standards exist within the property boundary, of the property where the source of the contamination is or was located, the enforcement standards off site in the developable groundwater, and not greater than 300 times the enforcement standard in the non-developable groundwater, and no environmental factor(s) or requirement for source control, shall be offered closure with a groundwater use restriction or a GIS registration~~ institutional controls that satisfy the requirements of ch. NR 726, if all of the risk criteria in s. Comm 46.06 (2), except ss. Comm 46.06 (2)(b) or 46.06 (2)(e)2., are satisfied. If the owners of all properties on the site with enforcement standard exceedances sign and record a groundwater use restriction, as required under s. NR 726.05 (2)(b)4., the site shall be closed. If the owner of any property on the site with an enforcement standard exceedance does not sign and record a groundwater use restriction, additional remedial action, other than utilizing natural attenuation, may not be required for areas where all contaminant concentrations that are equal to or greater than enforcement standards are found in low permeability material, except in situations where a risk or potential risk exists to public health, safety or welfare or the environment from the residual groundwater contamination in the low permeability material, and where a technically feasible and cost effective response is available. Additional funding Funding under s. 101.143, Stats., shall be terminated by Commerce for sites that are offered closure under this paragraph, will not be provided except for otherwise eligible post closure costs that are otherwise eligible for reimbursement under ch. Comm 47. If the of site owner does not accept the GIS registration or the groundwater use restriction, additional funding will still not be provided except for otherwise eligible post closure costs and additional remedial efforts, beyond natural attenuation, will not be required.

NOTE: DNR is currently developing a geographic information system (GIS) registry as a means for tracking residual groundwater contamination which could replace the groundwater use restriction requirement in ch. NR 726. However, until the GIS registry is operable and ch. NR 726 is amended to allow registration on a GIS registry as a substitute for recording a groundwater use restriction, groundwater use restrictions will continue to be used as the method for notifying future property owners and other interested persons of the existence of the residual groundwater contamination.

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(c) After an investigation that satisfies the requirements of ch. NR 716, the agency with administrative authority for the site may approve of site closure under ch. NR 726 for sites that do not meet all of the risk criteria of in s. Comm 46.05 46.06(2) if the requirements of ch. NR 726 are satisfied, will be closed after investigation or may determine that additional remedial action is not required even though all of the requirements for closure in ch. NR 726 have not been satisfied, without requiring or reimbursing reimbursement from Commerce for additional remedial efforts actions except for otherwise eligible post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

~~(d) Sites that do not meet all criteria of s. Comm 46.05 (2) may be closed after only the investigation, if it is determined that the site poses no additional risk and it has been determined that additional source control is not needed.~~

~~(e) Sites that do not meet all criteria of s. Comm 46.05 (2) and are determined to pose additional risk shall conduct remedial efforts to address and resolve the risk.~~

(d) If the agency with administrative authority for a site determines that pars. (a), (b) and (c) do not apply to the site, the responsible person shall be required to conduct a remedial action, and shall be entitled to reimbursement under ch. Comm 47 for all eligible costs of the remedial action.

NOTE: In compliance with s. 160.21(2)(a), Stats., s. NR 140.22(2)(b) establishes the point of standards application to determine whether an enforcement standard has been attained or exceeded, for facilities, practices or activities that do not have an established design management zone, as “any point of present groundwater use and any point beyond the boundary of the property on which the facility, practice or activity is located and s. NR 140.22 (2)(c) establishes a point of standards application for “discharges, releases, sites or facilities” regulated under s. 292.11 or 292.31, Stats. (among other statutes) as “every point at which groundwater is monitored.” The environmental factors in s. Comm 47.337 (3) and the other risk criteria in s. Comm 46.06 (2) require an evaluation of groundwater contaminant concentrations at all of these points of standards application.

~~(f) The criteria of s. Comm 46.05 (2) are statements of what constitute risk factors. The elements established through those statements will be used by the departments in the process of setting remediation targets and in decisions on whether to grant closure or no further action.~~

(2) CLOSURE BASED ON REMEDIATION TARGETS. When the remediation targets developed under s. Comm 46.04 (3) are achieved, the site shall be closed utilizing an institutional control that satisfies the requirements of ch. NR 726, if required, without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(3) DETERMINATION OF COMPLIANCE WITH THE ENFORCEMENT STANDARDS OR REMEDIATION TARGETS. When determining whether contaminant concentrations at a site ~~is~~ are above or below either ~~the~~ an enforcement standard ~~or any other~~

~~contaminant level~~ or a remediation target, recognition shall be made of the impact of error of measurement, repeatability of test results and statistical significance. ~~The DNR and Commerce and DNR shall develop, by June 30, 1999, a process for taking these considerations into account and then revise and/or~~ adopt administrative rules as appropriate.

(4) TRACKING OF REMEDIATION PROGRESS. (a) ~~The departments Commerce and DNR shall establish a system for electronically tracking the achievement of remediation targets. They progress and shall use the tracking system to determine if remediation funding under s. 101.143, Stats., should end and or~~ if a site closure request should be submitted.

(b). ~~The departments Commerce and DNR shall jointly require and enforce the use of the electronic reporting system by claimants for reimbursement under s. 101.143, Stats.~~

~~Comm 46.07~~ 46.08 Transfer of sites. (1) GENERAL. Except as provided in sub. (2) or (3), DNR shall determine whether Commerce or DNR has administrative authority for a site. Until that determination is made, DNR has administrative authority for the site. The DNR shall make this determination will establish the responsibility of either Commerce or DNR for a site within 60 days of the after receipt by DNR of the site investigation report, unless any of the following apply:

(a) ~~The DNR has requested additional information from a responsible person or a consultant retained by the responsible person after reviewing the site investigation report and the requested information has not been submitted to DNR.~~

(b) The site is the subject of an enforcement action under s. 292.11, Stats., initiated by the DNR.

(c) Other circumstances over which ~~the DNR has no control have prevented the DNR~~ from making a site classification determination.

(2) CONSULTANT DETERMINATION. Consultants performing site investigations may determine, as part of a joint agency site classification pilot, whether a site is high, medium or low priority and submit the investigation report directly to the agency they ~~believe has jurisdiction~~ determine to have administrative authority under s. Comm 46.04 (1).

(3) CHANGES IN CLASSIFICATION. If a site is classified as high, medium or low priority, and ~~the DNR or Commerce determines that the classification is incorrect, that the~~ agency will making the determination that a site has been incorrectly classified shall transfer the site file and all related data to the other agency within 14 days after making the determination, if the other agency has administrative authority for the reclassified site.

(4) LIST OF SITES IN REMEDIATION. ~~The departments will~~ Commerce and DNR shall develop and maintain a reconciled list of sites in remediation including data on remediation

targets levels, risk criteria for screening sites factors, expected closure costs and other relevant data.

Appendix A

STANDARD METHODS FOR DETERMINING HYDRAULIC CONDUCTIVITY

(1) TRANSMISSIVITY TEST. (a) To conduct a transmissivity test, a volume of water is removed from a monitoring well and the water level recovery in the well is measured after a specified time has elapsed. The resultant data may be used to determine the hydraulic conductivity of the area surrounding the monitoring well.

(b) For transmissivity tests, groundwater may not be removed from the well 12 hours prior to beginning the test.

(c) Transmissivity tests shall be conducted in a monitoring well as follows:

1. If using a pump, set the pump intake in the lower half of the screen and allow sufficient time for the water level in the well to equilibrate.

2. Measure and record the initial depth to water and well depth. Subtract the difference to determine the saturated interval of the well, in feet.

3. Pump or bail 2 gallons of groundwater from the well within 2 to 3 minutes.

4. Record the start time and finish time to remove 2 gallons from the well.

5. Measure and record the water level in the well immediately after 2 gallons is removed from the well.

6. After the applicable time listed in Table A has elapsed, measure and record the water level in the well.

7. Calculate hydraulic conductivity utilizing Formula A.

TABLE A

<u>Saturated Interval of Well (feet)</u>	<u>Time (minutes)</u>
<u>5</u>	<u>190</u>
<u>6</u>	<u>160</u>
<u>7</u>	<u>140</u>
<u>8</u>	<u>120</u>
<u>9</u>	<u>105</u>
<u>10</u>	<u>95</u>

FORMULA A

Step 1: Calculate $T = q / 4 \pi s t$

Where: T = coefficient of transmissivity, in gallons per day per foot (gpd/ft)

q = volume of groundwater removed (2 gallons)

s = measured drawdown, in feet (water level at time in Table A minus initial depth to water in sub. 3.b., above)

t = time, in days, from Table A. (convert minutes to days by dividing by 1440)

Step 2: Convert T in gpd/ft to T in ft²/sec by multiplying by 11551.

Step 3: Calculate $K = T/b$

Where: K = hydraulic conductivity, in ft/sec

b = saturated interval of well, in feet, as measured in 3.b., above.

Step 4: Convert K in ft/sec to K in cm/sec by multiplying by 30.48.

(2) RISING AND FALLING HEAD TEST. (a) To conduct a rising head test, a volume of groundwater is instantaneously removed from a well and the rate of water level recovery in the well is measured. To conduct a falling head test, a solid object is instantaneously inserted into a well and the rate at which groundwater flows out of the well is measured. The results of both tests may be used to determine the hydraulic conductivity of the area surrounding the well. Both tests shall be conducted in accordance with procedures specified by ASTM in guidance number D 4044-96 or D 5912-96, or their successor, and the relevant criteria in pars. (b) and (c) or (d).

NOTE: ASTM guidance number D 5912-96 is based on the Bouwer and Rice method. Rising head test is also referred to as bail-down test, slug-out test and slug extraction test. Falling head test is also referred to as slug-in test and slug injection test. The criteria listed under pars. (a) to (c) are intended for determining the hydraulic conductivity of low permeability materials. They may not be applicable to saturated materials having a hydraulic conductivity greater than 1×10^{-5} cm/sec.

(b) For both the rising and falling head tests, groundwater may not be removed from the well 12 hours prior to the test, the well shall have at least five feet of water within the well screen prior to each test, and the borehole diameter of the well shall be at least eight inches.

(c) Hydraulic conductivity shall be determined only by rising head tests in wells where the water table intersects the well screen and shall be conducted in accordance with all of the following criteria:

1. Assume the filter pack's specific yield is 0.20 to 0.25, unless measured by the manufacturer.

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2. Remove a minimum of 0.75 gallons and a maximum of 1.5 gallons during the test.
3. Each test shall continue for 150 minutes or more unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than 1×10^{-5} centimeters per second.
4. Determine if the hydraulic conductivity of the well is less than or equal to 1×10^{-5} centimeters per second based upon the test results.

(d) Both rising head and falling head tests may be conducted in piezometers and shall be conducted in accordance with all of the following criteria:

1. Remove a minimum of 0.75 gallons for the rising head test and add a slug with a volume equivalent to 0.75 gallons or more for the falling head test.
2. The volume of groundwater water removed from the well shall be less than the total volume of water within the well casing above the top of the well screen.
3. The sum of the filter pack length and the filter pack seal shall be used as the length of well screen when calculating hydraulic conductivity.
4. The drawdown in the well shall not exceed the top of the filter pack seal.
5. The length of well screen shall be at least four feet.
6. Each test shall continue for 45 minutes or more per well unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than 1×10^{-5} centimeters per second.
7. Determine if the hydraulic conductivity of the well is less than or equal to 1×10^{-5} centimeters per second based upon the test results.

Schedule for Adopting COMM 46 and NR 746 as Permanent Rules*

- | | | | |
|-----|------------|-----|--|
| 1. | On 4/30/99 | 1. | Publish the Scope Statement for Proposed Rulemaking in the Wisconsin Administrative Register. |
| 2. | By 5/3/99 | 2. | Finalize the roster for the Technical Advisory Committee (TAC) on the promulgation of NR 746 as a permanent rule and related changes to the NR 700 rules series. |
| 3. | By 5/13/99 | 3. | Mail to interested parties the documents requesting the Natural Resources Board (NRB) to authorize public hearings on the proposed permanent rules. |
| 4. | On 5/20/99 | 4. | Hold the first TAC meeting. |
| 5. | On 5/26/99 | 5. | NRB authorizes public hearings on the proposed permanent rules. |
| 6. | By 6/14/99 | 6. | Submit the Notice of Public Hearings to the Revisor of Statutes. |
| 7. | By 6/18/99 | 7. | Hold the 2 nd TAC meeting. |
| 8. | On 6/30/99 | 8. | Jointly publish the Hearing Notice in the Wisconsin Administrative Register. |
| 9. | On 7/12/99 | 9. | Jointly hold the first public hearing on the proposed rules. |
| 10. | By 7/15/99 | 10. | Jointly hold the last public hearing on the proposed rules. |
| 11. | On 7/20/99 | 11. | Expiration of comment period on the proposed rules. |
| 12. | By 7/30/99 | 12. | Hold the 3 rd TAC meeting. ** |
| 13. | By 8/16/99 | 13. | Mail to interested parties the documents requesting the NRB to adopt permanent rules. |
| 14. | By 8/23/99 | 14. | Hold the 4 th TAC meeting. |
| 15. | On 8/25/99 | 15. | NRB adopts permanent rules. |
| 16. | By 8/30/99 | 16. | Jointly send permanent rules to the Senate and Assembly presiding officers to begin the Legislative review process. |

*This schedule represents the best possible scenario given current information. Unforeseen circumstances, (e.g., a large number of complicated issues raised at the public hearings) may lead to delays in achieving the above-listed outcomes.

CHAPTER Comm 46
PETROLEUM ENVIRONMENTAL CLEANUP FUND INTERAGENCY
RESPONSIBILITIES

Comm 46.01 Purpose. The purpose of this rule is to identify the roles, processes and procedures that guide the departments of commerce and natural resources in the administration of their respective responsibilities for high, medium and low priority petroleum-contaminated sites under ss. 101.143, 101.144, 292.11 and 292.31, and ch. 160, Stats. This rule codifies portions of a memorandum of understanding that has been signed by the two agencies, as required by s. 101.144 (3m), Stats.

Comm 46.02 Applicability. This chapter only applies to sites where petroleum products have discharged from petroleum storage tanks.

Comm 46.03 Definitions. In this chapter:

- (1) "Commerce" means the department of commerce
- (2) "Discharge" has the meaning specified in s. 292.01 (3), Stats.

NOTE: Under s. 292.01 (3), Stats., "discharge" means, but is not limited to, "spilling, leaking, pumping, pouring, emitting, emptying or dumping."

- (3) "DNR" means the department of natural resources.

(4) "Enforcement standard" means a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.07, Stats., and s. NR 140.10 or s. 160.09, Stats., and s. NR 140.12.

- (5) "Groundwater" has the meaning specified in s. 160.01 (4), Stats.

NOTE: Section 160.01 (4), Stats., defines "groundwater" to mean "any water of the state, as defined in s. 281.01 (18), occurring in a saturated subsurface geological formation of rock or soil. Section 281.01 (18), Stats., defines "waters of the state" to include "those portions of Lake Michigan and Lake Superior within the boundaries of this state, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within this state or its jurisdiction."

(6) "High priority site" means a site that is contaminated with a petroleum product and meets one or more of the following criteria:

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(a) One or more hazardous substances other than petroleum products from a petroleum storage tank are present at the site.

(b) Contamination from the site discharges to a sensitive environment as defined in s. NR 700.03 (55).

NOTE: Section NR 700.03 (55) defines “sensitive environment” to mean “an area of exceptional environmental value, where a discharge could pose a greater threat than a discharge to other areas, including but not limited to: wetlands; habitat used by state or federally designated endangered or threatened species; national or state fish and wildlife refuges and fish and wildlife management areas; state and federal designated wild and scenic rivers, designated state riverways and state designated scenic urban waterways; riparian areas; rookeries; cold water communities as defined in s. NR 102.04 (3)(b), Lakes Superior and Michigan and the Mississippi river, environmentally sensitive areas and environmental corridors identified in area-wide water quality management plans, special area management plans, special wetland inventory studies, advanced delineation and identification studies and areas designated by the U.S. EPA under section 404 (c), 33 USC 1344 (c); calcareous fens; state forests, parks, trails and recreational areas; state and federal designated wilderness areas; designated or dedicated state natural areas established under ss. 23.27 to 23.29, Stats.; wild rice waters as listed in s. NR 19.09; and any other waters identified as outstanding or exceptional resource waters in ch. NR 102.”

(c) Groundwater contamination that is equal to or greater than an enforcement standard has been confirmed at the site.

(7) “Low permeability material” means subsurface material above bedrock, as defined in s. NR 141.05 (5), that is saturated with groundwater and has a hydraulic conductivity less than or equal to 1×10^{-3} centimeters per second as determined by a method specified in s. Comm 46.05.

NOTE: Section NR 141.05 (5) defines “bedrock” to mean “the solid rock underlying any loose surficial material such as soil, alluvium or glacial drift. Bedrock includes but is not limited to limestone, dolomite, sandstone, shale and igneous and metamorphic rock.”

(8) “Low priority site” means a site that is contaminated with a petroleum product and meets both of the following criteria:

(a) There is no confirmed petroleum product in groundwater equal to or greater than a preventive action limit, and

(b) There is no evidence of a hazardous substance on the site other than petroleum products that were discharged from a petroleum storage tank.

(9) “Medium priority site” means a site that is contaminated with a petroleum product and meets both of the following criteria:

(a) There is no evidence of a hazardous substance on the site other than petroleum products that were discharged from a petroleum storage tank; and

(b) There is no confirmed petroleum product in groundwater equal to or greater than an enforcement standard.

(10) “Monitoring well” means a groundwater monitoring well designed, installed, constructed and developed in accordance with the requirements of ch. NR 141, for the purpose of monitoring groundwater or obtaining geologic or groundwater related data. The term “monitoring well” includes piezometers and water table observation wells.

(11) “Natural attenuation” means the reduction in the concentration and mass of a substance and its breakdown products in groundwater due to naturally occurring physical, chemical, and biological processes without human intervention or enhancement. These processes include, but are not limited to, dispersion, diffusion, sorption and retardation, and degradation processes such as biodegradation, abiotic degradation and radioactive decay.

(12) “Permeable material” means a subsurface material that is saturated with groundwater and that is not a low permeability material.

(13) “Petroleum product” has the meaning specified in s. 101.143 (1)(f), Stats.

NOTE: Section 101.143 (1)(f), Stats., defines “petroleum product” to mean “gasoline, gasoline alcohol fuel blends, kerosene, fuel oil, burner oil, diesel fuel or used motor oil.” The term “petroleum product” includes substances that are, or once were, constituents of a petroleum product.

(14) “Petroleum storage tank” has the meaning specified in s. 101.144(1)(bm), Stats.

NOTE: Section 101.144 (1)(bm); Stats., defines “petroleum storage tank” to mean “a storage tank that is used to store petroleum products together with any on-site integral piping or dispensing system.” The term “petroleum storage tank” does not include a pipeline facility.

(15) “Preventive action limit” means a numerical value expressing the concentration of a substance in groundwater which is adopted under s. 160.15, Stats., and s. NR 140.10 or 140.12.

(16) “Property boundary” has the meaning specified in s. 160.01(6m), Stats.

NOTE: Section 160.01(6m), Stats., defines “property boundary” to mean “the boundary of the total contiguous parcel of land owned by a common owner, regardless of whether public or private roads run through the parcel.”

(17) “Remedial action” means a response action taken to control, minimize or eliminate the discharge of petroleum products so that they do not present an actual or potential threat to public health, safety or welfare or the environment. The term “remedial action” includes actions taken to restore the environment to the extent practicable and to meet applicable environmental standards, and includes natural attenuation. Examples include containment, treatment, excavation, disposal, recycling or reuse, and any monitoring required to assure that such actions protect public health, safety and welfare and the environment.

(18) “Remediation target” means the contaminant concentration in groundwater or soil, or both, that must be achieved before a site can be granted, or is eligible for, closure under ch. NR 726.

(19) “Responsible person” has the meaning specified in s. 101.144(1)(d), Stats.

NOTE: Section 101.144(1)(d), Stats., defines “responsible person” to mean “a person who owns or operates a petroleum storage tank, a person who causes a discharge from a petroleum storage tank or a person on whose property a petroleum storage tank is located.”

(20) “Site” means any area where a petroleum product has discharged.

(21) “Site closure” or “site closed” means a determination made pursuant to ch. NR 726 that applicable groundwater quality standards in ch. NR 140 have been met or will be met by relying on natural attenuation and that applicable soil cleanup standards in ch. NR 720 have been met or will be met by relying on a remedial action performance standard.

(22) “Source control” means actions taken to remove or treat soil or groundwater contamination, or both, actions taken to minimize the leaching of soil contamination to groundwater, and actions taken to prevent the migration of groundwater contamination. The term “source control” includes tank removal, the removal of free product and contaminant hot spot removal or treatment.

NOTE: The term “source control” does not include groundwater monitoring, soil sampling, recycling or reuse of contaminants, reliance on natural attenuation to address residual contamination, or changes to a facility’s design, operation, construction or waste handling or disposal practices.

Comm 46.04 Site authority. (1) GENERAL. The assignment of administrative authority for high, medium and low priority petroleum contaminated sites shall be determined according to the following:

- (a) DNR shall have administrative authority for high priority sites.
- (b) Commerce shall have administrative authority for low and medium priority sites.

(2) **ADMINISTRATIVE AUTHORITY.** The administrative authority of Commerce and DNR for a site includes enforcement under ss. 101.02, 101.144 (2) or (3), or s. 292.11 (7), Stats., setting remediation targets, remediation supervision and direction, and decision making regarding granting or denying closure and deciding whether or not further remedial action is required.

(3) **JOINT DECISION-MAKING.** Commerce and DNR shall implement a system of joint decision-making for the setting of remediation targets for sites that are competitively bid or bundled with another site or sites pursuant to s. Comm 47.337 (4)(a)3. and 4., and the selection of remedial bids.

(4) **CLOSURE DECISIONS FOR SITES WITH GROUNDWATER CONTAMINATION.** At any time following completion of the site investigation, the following steps shall be taken for a site with confirmed groundwater contaminant levels equal to or greater than an enforcement standard:

(a) Where a closure request has been submitted by, or on behalf of, a responsible person with the appropriate fee, the DNR shall review the request, make a determination on closure, and if closure is granted, forward a copy of the closure determination to Commerce.

(b) Where a closure request has not been submitted, if Commerce or DNR identifies a site that either agency believes has met its remediation target, DNR may take action to solicit a closure request from the responsible person.

(5) **DISPUTE RESOLUTION.** Any disputes between Commerce and DNR under subs. (3) or (4) shall be subject to the following dispute resolution process:

(a) Project managers shall discuss their differences, and the basis for them, in an attempt to resolve the dispute.

(b) If the dispute is not resolved by the project managers, the decision shall be referred to the project managers' supervisors.

(c) If the dispute is not resolved by the project managers' supervisors, the decision shall be referred to the appropriate division administrators.

(d) If the dispute still remains unresolved at the division administrator level, the department Secretaries shall be the final decision-makers.

Comm 46.05 Site investigation. (1) **GENERAL.** In conducting an investigation of petroleum contaminated sites, the responsible person or a consultant retained by the responsible person shall meet applicable ch. NR 716 requirements and minimize costs while providing

sufficient data necessary for risk assessment screening and decision-making under this section and ss. Comm 46.06, 46.07, 47.337 and 47.339, and chs. NR 720, 722 and 726.

(2) GROUNDWATER PLUME EXPANSION DETERMINATION. Commerce and DNR shall develop an agreed upon methodology for determining if there is evidence of a groundwater-contaminant plume margin expansion and the actions to take if the data provided in the site investigation report are not adequate to make this determination. This methodology shall be utilized in the site investigation process.

(3) LOW PERMEABILITY DETERMINATION. (a) *General.* If groundwater is contaminated with petroleum products, the responsible person or a consultant retained by the responsible person shall determine, as part of the site investigation, if the contaminant plume is completely contained within low permeability materials and does not extend into deposits of laterally extensive permeable material, into a water line or sewer line trench or other utility corridor, into a fracture in clay, or into another feature that acts or is anticipated to act as a migration pathway for groundwater contamination.

(b) *Evaluation of existing site data.* Existing site data shall be used to make the determinations required under par. (a), if existing site data are sufficient to make these determinations. Existing site data may include, but are not limited to, monitoring well development data, monitoring well purging and sampling data, rising and falling head test data, yield test data, pump test data, monitoring well and boring logs, grain size analysis, local and regional geology, subsurface description, depositional environment, expected and actual degree and extent of contamination, or a combination of this data. If the responsible person's consultant finds groundwater contamination in low permeability materials, the responsible person or the consultant shall submit to the agency that has administrative authority for the site, for approval, the results of the evaluation of existing site data that is required by this paragraph, or an explanation of why the existing site data are not sufficient to make the determinations required in par. (a).

(c) *Standard hydraulic conductivity tests.* If the agency with administrative authority for the site determines that the existing site data are insufficient to make the determinations required under par. (a), the responsible person, or a consultant retained by the responsible person, shall then determine the hydraulic conductivity of the saturated materials at the site utilizing a method described in Appendix A, or a method that has been approved under par. (d), in conformance with the following requirements:

1. Hydraulic conductivity shall be determined for at least one monitoring well within the contaminant plume unless subd. 2 is applicable.

2. Notwithstanding the requirements in subd. 1, the agency with administrative authority for the site may determine that hydraulic conductivity test results for one or more monitoring wells outside of the plume are representative of the hydraulic conductivity of the saturated materials within the plume, based upon a comparison of the monitoring well logs for monitoring

wells installed inside and outside of the plume, and that it is not necessary to conduct a hydraulic conductivity test for a monitoring well within the plume.

(d) *Alternative methods for determining hydraulic conductivity.* The agency with administrative authority for the site may approve an alternative method for determining the hydraulic conductivity of the saturated materials at a site if the method meets the objectives of this section. The responsible person, or a consultant retained by the responsible person, shall obtain approval from the agency before using an alternative method. If the agency grants approval for use of the alternative method, the responsible person or the consultant shall submit site data and test results, to the agency with administrative authority for the site, documenting that the objectives of this section have been met.

(4) SUPPLEMENTAL SITE INVESTIGATION INFORMATION. If the site investigation report for the site was submitted prior to [insert the effective date of this rule], supplemental site information, evaluating existing site data to make the determinations required under par. (a), may be required by Commerce or DNR to be included as part of a submittal for approval of a remedial action, setting remediation targets or approving or denying closure. If the agency with administrative authority for the site determines that the existing site data are insufficient to make the determinations required in sub. (3)(a), the responsible person or a consultant retained by the responsible person, shall then determine the hydraulic conductivity of the saturated materials at the site in compliance with the requirements of sub.(3)(c).

Comm 46.06 Risk assessment screening. (1) GENERAL. The risk criteria in sub. (2) for screening sites shall be used to measure the environmental, public health, safety and welfare risks associated with the discharge of petroleum products to determine whether a remedial action shall be required, which could include, but is not limited to, adequate source control and measures to address environmental factors listed in s. Comm 47.337 (3), to set remediation targets, and to determine whether the site may be closed as provided in s. Comm 46.07.

(2) RISK CRITERIA FOR SCREENING SITES. In making decisions under sub. (1), Commerce and DNR shall utilize, as provided in s. Comm 46.07, the following risk criteria for screening sites:

(a) None of the environmental factors as listed in s. Comm 47.337 (3) are present at the site at the time of the completion of the site investigation;

(b) There is no contaminant concentration in any groundwater that has migrated outside of the property boundary, of the property where the source of the contamination is or was located, that is equal to or greater than enforcement standards, except in a public road or street right of way;

(c) No soil contamination exists within 4 feet of the ground surface that exceeds the direct contact soil concentrations listed in Table 1;

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(d) No groundwater contamination, in a water sample collected from a monitoring well in low permeability material, which has been identified using the methods specified in s. Comm 46.05, exceeds the groundwater concentrations listed in Table 1;

(e) 1. There is a vertical separation distance of 5 feet or more between any contaminants contained within low permeability material and any permeable material on the site, or the soil and groundwater contaminant concentrations are decreasing with depth within the low permeability material, and

2. No concentration of any contaminant in the groundwater contained within permeable material is equal to or greater than an enforcement standard;

(f) There is no impact to a water line or sewer line trench or other utility corridor along which vapors, free product or contaminated water may flow, or an interbedded permeable soil layer, and there is no impact or evidence of imminent impact to a basement;

(g) There is no enforcement standard exceedance in any groundwater within 1000 feet of a public well; and

(h) There is no enforcement standard exceedance in any groundwater within 100 feet of a private well.

TABLE 1

<u>Substance</u>			
<u>Benzene</u>			
<u>1,2-DCA</u>			
<u>Ethylbenzene</u>			
<u>Toluene</u>			
<u>Xylene</u>			

Comm 46.07 Site closure and approval and tracking of remedial actions. (1) **SITE CLOSURE DECISIONS.** Commerce and DNR shall make site closure decisions based upon the following requirements:

(a) Sites where contaminant concentrations are below the enforcement standards at every point on site at which groundwater is monitored, and where all of the risk criteria in s. Comm

46.06 (2) are satisfied, shall be closed without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(b) Sites where contaminant concentrations within permeable material outside of the property boundary, of the property where the source of the contamination is or was located, are below enforcement standards and where contaminant concentrations within low permeability material outside of the property boundary, of the property where the source of the contamination is or was located, are below the groundwater concentrations listed in Table 1, but where contaminant concentrations above enforcement standards exist within the property boundary, of the property where the source of the contamination is or was located, shall be offered closure with institutional controls that satisfy the requirements of ch. NR 726, if all of the risk criteria in s. Comm 46.06 (2), except ss. Comm 46.06 (2)(b) or 46.06 (2)(e)2., are satisfied. If the owners of all properties on the site with enforcement standard exceedances sign and record a groundwater use restriction, as required under s. NR 726.05 (2)(b)4., the site shall be closed. If the owner of any property on the site with an enforcement standard exceedance does not sign and record a groundwater use restriction, additional remedial action, other than utilizing natural attenuation, may not be required for areas where all contaminant concentrations that are equal to or greater than enforcement standards are found in low permeability material, except in situations where a risk or potential risk exists to public health, safety or welfare or the environment from the residual groundwater contamination in the low permeability material, and where a technically feasible and cost effective response is available. Funding under s. 101.143, Stats., shall be terminated by Commerce for sites that are offered closure under this paragraph, except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

NOTE: DNR is currently developing a geographic information system (GIS) registry as a means for tracking residual groundwater contamination which could replace the groundwater use restriction requirement in ch. NR 726. However, until the GIS registry is operable and ch. NR 726 is amended to allow registration on a GIS registry as a substitute for recording a groundwater use restriction, groundwater use restrictions will continue to be used as the method for notifying future property owners and other interested persons of the existence of the residual groundwater contamination.

(c) After an investigation that satisfies the requirements of ch. NR 716, the agency with administrative authority for the site may approve of site closure under ch. NR 726 for sites that do not meet all of the risk criteria in s. Comm 46.06(2) if the requirements of ch. NR 726 are satisfied, or may determine that additional remedial action is not required even though all of the requirements for closure in ch. NR 726 have not been satisfied, without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(d) If the agency with administrative authority for a site determines that pars. (a), (b) and (c) do not apply to the site, the responsible person shall be required to conduct a remedial action, and shall be entitled to reimbursement under ch. Comm 47 for all eligible costs of the remedial action.

NOTE: In compliance with s. 160.21(2)(a), Stats., s. NR 140.22(2)(b) establishes the point of standards application to determine whether an enforcement standard has been attained or exceeded, for facilities, practices or activities that do not have an established design management zone, as “any point of present groundwater use and any point beyond the boundary of the property on which the facility, practice or activity is located and s. NR 140.22 (2)(c) establishes a point of standards application for “discharges, releases, sites or facilities” regulated under s. 292.11 or 292.31, Stats. (among other statutes) as “every point at which groundwater is monitored.” The environmental factors in s. Comm 47.337 (3) and the other risk criteria in s. Comm 46.06 (2) require an evaluation of groundwater contaminant concentrations at all of these points of standards application.

(2) **CLOSURE BASED ON REMEDIATION TARGETS.** When the remediation targets developed under s. Comm 46.04 (3) are achieved, the site shall be closed utilizing an institutional control that satisfies the requirements of ch. NR 726, if required, without reimbursement from Commerce for additional remedial actions except for post closure costs that are otherwise eligible for reimbursement under ch. Comm 47.

(3) **DETERMINATION OF COMPLIANCE WITH ENFORCEMENT STANDARDS OR REMEDIATION TARGETS.** When determining whether contaminant concentrations at a site are above or below either an enforcement standard or a remediation target, recognition shall be made of the impact of error of measurement, repeatability of test results and statistical significance. Commerce and DNR shall develop, by June 30, 1999, a process for taking these considerations into account and then revise or adopt administrative rules as appropriate.

(4) **TRACKING OF REMEDIATION PROGRESS.** (a) Commerce and DNR shall establish a system for electronically tracking remediation progress and shall use the tracking system to determine if remediation funding under s. 101.143, Stats., should end or if a site closure request should be submitted.

(b) Commerce and DNR shall jointly require and enforce the use of the electronic reporting system by claimants for reimbursement under s. 101.143, Stats.

Comm 46.08 Transfer of sites. (1) **GENERAL.** Except as provided in sub. (2) or (3), DNR shall determine whether Commerce or DNR has administrative authority for a site. Until that determination is made, DNR has administrative authority for the site. DNR shall make this determination within 60 days after receipt by DNR of the site investigation report, unless any of the following apply:

(a) DNR has requested additional information from a responsible person or a consultant retained by the responsible person after reviewing the site investigation report and the requested information has not been submitted to DNR.

(b) The site is the subject of an enforcement action under s. 292.11, Stats., initiated by DNR.

(c) Other circumstances over which DNR has no control have prevented DNR from making a site classification determination.

(2) CONSULTANT DETERMINATION. Consultants performing site investigations may determine, as part of a joint agency site classification pilot, whether a site is high, medium or low priority and submit the investigation report directly to the agency they determine to have administrative authority under s. Comm 46.04 (1).

(3) CHANGES IN CLASSIFICATION. If a site is classified as high, medium or low priority, and DNR or Commerce determines that the classification is incorrect, the agency making the determination that a site has been incorrectly classified shall transfer the site file and all related data to the other agency within 14 days after making the determination, if the other agency has administrative authority for the reclassified site.

(4) LIST OF SITES IN REMEDIATION. Commerce and DNR shall develop and maintain a reconciled list of sites in remediation including data on remediation targets, risk criteria for screening sites, expected closure costs and other relevant data.

Appendix A

STANDARD METHODS FOR DETERMINING HYDRAULIC CONDUCTIVITY

(1) TRANSMISSIVITY TEST. (a) To conduct a transmissivity test, a volume of water is removed from a monitoring well and the water level recovery in the well is measured after a specified time has elapsed. The resultant data may be used to determine the hydraulic conductivity of the area surrounding the monitoring well.

(b) For transmissivity tests, groundwater may not be removed from the well 12 hours prior to beginning the test.

(c) Transmissivity tests shall be conducted in a monitoring well as follows:

1. If using a pump, set the pump intake in the lower half of the screen and allow sufficient time for the water level in the well to equilibrate.
2. Measure and record the initial depth to water and well depth. Subtract the difference to determine the saturated interval of the well, in feet.
3. Pump or bail 2 gallons of groundwater from the well within 2 to 3 minutes.
4. Record the start time and finish time to remove 2 gallons from the well.

5. Measure and record the water level in the well immediately after 2 gallons is removed from the well.
6. After the applicable time listed in Table A has elapsed, measure and record the water level in the well.
7. Calculate hydraulic conductivity utilizing Formula A.

TABLE A

Saturated Interval of Well (feet)	Time (minutes)
5	190
6	160
7	140
8	120
9	105
10	95

FORMULA A

Step 1: Calculate $T = q / 4 \pi s t$

- Where:
- T = coefficient of transmissivity, in gallons per day per foot (gpd/ft)
 - q = volume of groundwater removed (2 gallons)
 - s = measured drawdown, in feet (water level at time in Table A minus initial depth to water in sub. 3.b., above)
 - t = time, in days, from Table A. (convert minutes to days by dividing by 1440)

Step 2: Convert T in gpd/ft to T in ft²/sec by multiplying by 11551.

Step 3: Calculate $K = T/b$

- Where:
- K = hydraulic conductivity, in ft/sec
 - b = saturated interval of well, in feet, as measured in 3.b., above.

Step 4: Convert K in ft/sec to K in cm/sec by multiplying by 30.48.

(2) RISING AND FALLING HEAD TEST. (a) To conduct a rising head test, a volume of groundwater is instantaneously removed from a well and the rate of water level recovery in the well is measured. To conduct a falling head test, a solid object is instantaneously inserted into a well and the rate at which groundwater flows out of the well is measured. The results of both tests may be used to determine the hydraulic conductivity of the area surrounding the well. Both tests shall be conducted in accordance with procedures specified by ASTM in guidance number D 4044-96 or D 5912-96, or their successor, and the relevant criteria in pars. (b) and (c) or (d).

NOTE: ASTM guidance number D 5912-96 is based on the Bouwer and Rice method. Rising head test is also referred to as bail-down test, slug-out test and slug extraction test. Falling head test is also referred to as slug-in test and slug injection test. The criteria listed under pars. (a) to (c) are intended for determining the hydraulic conductivity of low permeability materials. They may not be applicable to saturated materials having a hydraulic conductivity greater than 1×10^{-5} cm/sec.

(b) For both the rising and falling head tests, groundwater may not be removed from the well 12 hours prior to the test, the well shall have at least five feet of water within the well screen prior to each test, and the borehole diameter of the well shall be at least eight inches.

(c) Hydraulic conductivity shall be determined only by rising head tests in wells where the water table intersects the well screen and shall be conducted in accordance with all of the following criteria:

1. Assume the filter pack's specific yield is 0.20 to 0.25, unless measured by the manufacturer.
2. Remove a minimum of 0.75 gallons and a maximum of 1.5 gallons during the test.
3. Each test shall continue for 150 minutes or more unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than 1×10^{-5} centimeters per second.
4. Determine if the hydraulic conductivity of the well is less than or equal to 1×10^{-5} centimeters per second based upon the test results.

(d) Both rising head and falling head tests may be conducted in piezometers and shall be conducted in accordance with all of the following criteria:

1. Remove a minimum of 0.75 gallons for the rising head test and add a slug with a volume equivalent to 0.75 gallons or more for the falling head test.
2. The volume of groundwater water removed from the well shall be less than the total volume of water within the well casing above the top of the well screen.
3. The sum of the filter pack length and the filter pack seal shall be used as the length of well screen when calculating hydraulic conductivity.
4. The drawdown in the well shall not exceed the top of the filter pack seal.
5. The length of well screen shall be at least four feet.
6. Each test shall continue for 45 minutes or more per well unless the test results clearly demonstrate that the hydraulic conductivity of the well is greater than 1×10^{-5} centimeters per second.
7. Determine if the hydraulic conductivity of the well is less than or equal to 1×10^{-5} centimeters per second based upon the test results.



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March 16, 1999

The Honorable Judith B. Robson
State Senator - 15th Senate District
15 South, State Capitol
Madison, Wisconsin 53702

Dear Senator Robson:

You have asked me to review emergency rule chapter Comm 46 in terms of its consistency with chapter 160 of the Wisconsin Statutes. The rule is not always very clear, which means that its compliance with chapter 160 may depend on how the rule is implemented at any particular site. Nevertheless, certain general comments can be made where it appears that provisions of Comm 46 are not authorized by chapter 160. Moreover, those parts of the rule where definitions are absent or unclear may compromise the Department of Commerce's ability to make decisions that would be defensible upon appeal.

The creation of the term "developable groundwater" is a kind of aquifer classification that is not authorized by chapter 160. Section 160.01(4) defines "groundwater" to be all waters of the state occurring in a saturated subsurface geological formation of rock or soil. This definition is consistent with the legislative intent, noted in my earlier letter to you, to protect groundwater resources for all purposes, both consumptive and non-consumptive. This definition is also consistent with the directive in section 160.05(6)(d)1.-3., to consider non-use factors such as the effect on plants and animals in identifying the substances for which standards are to be set.

In addition to the concept of developable and non-developable groundwater not being consistent with chapter 160 in principle, the concept may also run afoul of chapter 160 in practice. Sections 160.21(2)(a)2. and 160.23(1)(c) provide that enforcement standards may not be allowed to be violated at any point of present groundwater use, and off-site. It is not clear from the rule that non-developable water is equivalent to no point of present groundwater use. Where it is not equivalent, chapter 160 requires that the enforcement standard be achieved. And, where it is equivalent but off-site, chapter 160 requires that the enforcement standard be achieved nevertheless. The provisions of Comm 46 that allow enforcement standard violations to remain regardless, such as sections 46.06(1)(b)-(e), are not consistent with this requirement.

It is true that section 160.21(2)(b)1.a. allows an agency to allow enforcement standard exceedances in nonpotable groundwater, but only where monitoring is not required. Because

The Honorable Judith B. Robson
March 16, 1999
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section 160.27(2)(a)-(b) requires monitoring at contaminated sites, this exception does not apply to the sites addressed by Comm 46.

The definition of remediation target is not consistent with chapter 160 if the target is used to close a site, under sections 46.03 and 46.06, and an enforcement standard is violated at any point of present groundwater use or off-site. It is not clear from the rule that this could not happen.

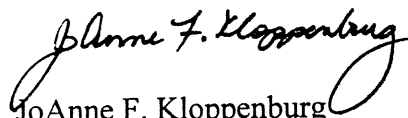
Similarly, whether the risk criteria set forth in Comm 46.05(2) are consistent with chapter 160 depends on how they will be used. Comm 46.05(2)(c) allows enforcement standard violations off-site, and (g) appears to do so as well. Comm 46.05(2)(e) is inconsistent with chapter 160 to the extent that it can be used to allow enforcement standard violations at points of groundwater use, where the groundwater is "non-developable."

The closure provisions that allow enforcement standard violations at points of groundwater use, and off-site, are also inconsistent with chapter 160: Comm 46.06(1)(b) (at points of groundwater use and off-site); Comm 46.06(1)(c) (see preceding paragraph about the risk criteria); Comm 46.06(1)(d) (at points of groundwater use and off-site). One deficiency shared by all these provisions, as well as Comm 46.06(1)(e), is that there is no requirement to show that the groundwater contamination is decreasing and that the applicable chapter 160 groundwater standards will be attained.

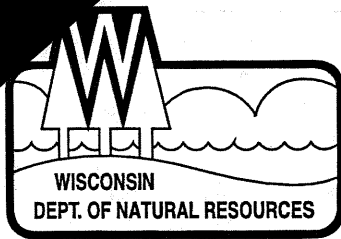
As a side note, the Department of Justice defends agency decisions challenged under chapter 227, and has worked with the Department of Commerce in PECFA and other programs to ensure that the requirements of chapter 227 are met. To the extent that definitions or terms in Comm 46 are unclear at possible decision-making points, including assigning a priority level to a site, applying the risk criteria, and authorizing site closure with or without conditions, there is a potential for increased chapter 227 litigation and the defensibility of Comm 46 decisions may be compromised. The clearer the Comm 46 provisions can be, the better.

Finally, it would be helpful in assessing Comm 46's consistency with chapter 160 to identify exactly where Comm 46 is identical to and different from NR 726.

Sincerely,


JoAnne F. Kloppenburg
Assistant Attorney General

JFK



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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March 22, 1999

The Honorable Judith Robson
Senate Chair
Joint Committee for the Review of
Administrative Rules
118 North, State Capitol
Madison, WI 53702

The Honorable Glenn Grothman
Assembly Chair
Joint Committee for the Review of
Administrative Rules
125 West, State Capitol
Madison, WI 53702

Judy *Glenn*
Dear Senator Robson and Representative Grothman:

The Departments of Natural Resources and Commerce are pleased to transmit to you the answers to the questions that you raised in your March 10 letter.

If after the Committee reviews the responses we have provided and any questions remain, staff of both agencies will be available to address any points you wish to have clarified.

Thanks again for your interest in the PECFA program.

Sincerely,

George
George E. Meyer
Secretary
Department of Natural Resources

Brenda
Brenda J. Blanchard
Secretary
Department of Commerce

cc: Mark Bugher - DOA



**DNR and Commerce Joint Responses to JCRAR's Questions on Comm 46
Dated March 10, 1999**

1. *Section Comm 46.02 (3) defines the term "developable groundwater." Will the creation of this new term have any impact on the interpretation or implementation of the statutory provisions relating to groundwater protection standards contained in ch. 160, Stats? How and what measures will be employed to determine if a groundwater unit is developable or not developable?*

Answer:

We do not believe this term impacts how the provisions in ch. 160, Stats, are applied. Administrative rules are written to reflect how specific statutory provisions will be applied by an agency. In this situation, we believe the statute allows for the consideration of the use of the groundwater and degree of risk posed by contamination when a response is selected.

The current administrative rule sets one criteria based upon the ability of a well to recover and yield at least 0.2 gallons per minute (gpm). Other measures are possible for determining whether this flow rate exists in a formation. Alternatives may include using hydraulic conductivity, grain size analysis and other methods. These additional methods would be developed over time, incorporating suggestions from practitioners in the field

2. *Section Comm 46.02 (6) (b) defines the term "high priority site" in part to mean a site that exhibits contamination to an area of exceptional environmental value where the discharge would pose a greater than normal threat. Please define the phrases "exceptional environmental value" and "greater than normal threat." How are risk criteria considered in designation of "high", "medium", and "low" priority sites? How will the caseload be managed to prioritize response to sites, which do not have risk criteria?*

Answer:

An "exceptional environmental value" is a term used to define sensitive environments in NR 700.03(55). It would include impacts to an ecosystem that supports threatened or endangered species, or other sensitive environments, examples of which include: wetlands; habitat used by state or federally designated endangered or threatened species; national or state fish and wildlife refuges and fish and wildlife management areas; state and federal designated wild and scenic rivers, designated state riverways and state designated scenic urban waterways; calcareous fens, and wild rice waters as listed in NR 19.09. A "greater than normal threat" refers to an impact from a discharge that would result in more environmental harm than a similar discharge in another area.

Within Comm 46, the terms high, medium and low priority are used in the context of determining which agency is responsible for a site. These terms are not based upon the risk criteria but rather simply reflect whether groundwater contamination exists on a site above the enforcement standard. The risk criteria go well beyond this point and set the specific criteria by which sites will be evaluated for remedies. The risk criteria apply equally to all sites regardless of whether groundwater contamination exists at the site.

Risk criteria are used for the purpose of determining the range of responses that must be taken to address petroleum contamination. The criteria attempt to classify the risk that a site poses to human health and the environment with the purpose of separating those that can close after only the investigation and those that must continue on to implement a remedial action. All sites will receive a response based upon the risk that they pose to human health and the environment. The site will be first evaluated at the time that the site investigation is completed and again when a remedial action is proposed, if that is necessary. Sites without risk criteria would be identified during the review of the site investigation, or through the DNR's proactive closure process, and would be closed at that time.

- 3. Section Comm 46.04 (2) provides that the departments will develop a methodology for investigating expanding plumes of contamination. When will the methodology be completed and will it be promulgated as an administrative rule? Would the procedures outlined in the ASTM Standard for Groundwater Remediation by Natural Attenuation (RNA) be sufficient?*

Answer:

The methodology for assessing expanding plumes has been a subject of discussion between Commerce and DNR staff and a methodology will be completed by July of 1999. How this methodology will be included in the final Comm 46 administrative rule will be determined once the methodology is finalized. The methodology will need to incorporate information on data gathering, evaluation of data and the incorporation of these activities into the site investigation. The approach may be based in part on the recommendations in the ASTM standard for Groundwater Remediation by Natural Attenuation (RNA).

An expanding plume occurs when the margin of the contaminant plume moves outward or downward. As a result, key factors of the methodology will need to include completing data gathering and analysis of the plume during the site investigation and comparing contaminant concentrations over time in monitoring wells located downgradient of the release and oriented along the direction of groundwater flow.

- 4. Section Comm 46.05 (1) provides that jointly created risk assessment protocols will be used to measure risk associated with petroleum contamination and to determine appropriate responses to that contamination. When will the protocols be created and will they be promulgated as administrative rules?*

Answer:

Section Comm 46.05(2), Risk Criteria, contains the risk-based protocols referenced here. Both Commerce and DNR have adopted Comm 46 as an emergency rule and are proceeding towards permanent rule adoption.

- 5. Section Comm 46.05 (2) (b) describes environmental risk factors. What is meant by the terms "identified" and "addressed" with regard to COMM 47 environmental factors? Will risk-based procedures be applied to "address" environmental factors?*

Answer:

The term "identified" merely means that a Comm 47 environmental factor has been found to be present at a site, based upon site-specific data. The term "addressed" means an action needs to be taken to deal with the environmental factor and eliminate it or minimize its impact.

Risk-based procedures are not a remedial response that can address an environmental factor. They are criteria applied to site conditions to assist in evaluating whether or not a remedial response is necessary at the site or whether the site can be closed.

6. *Section Comm 46.05 (2) (c), (h), (i) provides risk criteria in regard to groundwater. Do these risk criteria refer just to "developable" groundwater or to any groundwater? How is an ES exceedance in non-developable groundwater a risk factor? If there is an ES exceedance in non-developable groundwater 999 ft from a public water supply well, does this represent a risk to public health? How would this affect ch. 160?*

Answer:

Comm 46.05 (2)(c), (h) and (i) apply to both developable and non-developable groundwater. In the case of Comm 46.05 (2)(c), this means that an ES exceedance in the roadway or right of way, regardless of whether it is in the developable or non-developable groundwater, is not going to prevent the decision to close a site.

An ES exceedance in non-developable or developable groundwater within 1,000 feet of a public well or 100 feet of a private well is considered to represent higher levels of risk and needs to be considered in the context of site conditions and how the wells are constructed. The absolute number of feet between the contamination and the well is not the ultimate deciding factor on what action may need to be taken. The distance is used simply to create a point at which additional analysis is needed to determine whether site specific conditions indicate that a risk to a water supply well exists.

As indicated in question #1, we believe the application of these administrative rules is consistent with the provisions of ch. 160, Stats.

7. *Section Comm 46.05 (2) (d) provides that decisions regarding the remediation and closure of sites will be based on the application of various risk criteria including whether no contamination occurs above stated values in Table 1 within 4 feet of the ground surface. How were the figures in Table 1 determined? Are the figures higher than standards set by the Environmental Protection Agency (nationally or in region 5), ASTM standards or standards used in Michigan. If so, why?*

Answer:

The direct contact numbers in Comm 46 were taken from the table of US EPA Region 9 Preliminary Remediation Goals (PRG) dated May 1, 1998. These PRGs were derived from standard equations that combine the risk to human health from

ingestion, dermal contact and inhalation, simultaneously, with the highest possible PRG being a compound's soil saturation limit, or the level just below where we can expect free-phase contamination (free-product) to be found in the soil.

Table 1, below, compares the values in Comm 46 to: 1.) a Wisconsin residual contaminant level (RCL) calculated using the formula and default values in NR 720; 2.) the US EPA Region 3 soil screening levels (SSL) for determining when a remedial action should be considered at a Superfund site; and 3.) Michigan's risk-based screening levels (RBSL). While the numbers in Comm 46 are similar to the other numbers in Table 1, below, none are directly comparable because of the different exposure assumptions were used and the numbers were created for differing purposes. It should be noted that all the values in Comm 46 are reasonably close (within a factor of three) to values arrived at in the other models. Typically numbers within an order of magnitude (within a factor of ten) are considered equivalent in risk evaluation.

Table 1.
Direct Contact Levels for Volatile Contaminants in Soil

	Inhalation of Volatiles (* indicates Soil Saturation Limit)			Comm 46 #s
	WI RCL	EPA SSL	MI RBSL	EPA Reg. 9 PRG
	(mg/kg)	(mg/kg)		(mg/kg)
Benzene	0.74	0.79	1.6	0.62
1,2-DCA	0.43	0.36	2.1	0.34
Ethylbenzene	92. *	395. *	140. *	230. *
Toluene	188. *	654. *	250. *	520. *
Xylene (m+o+p)	295. *	1,290. *	150. *	860. *

8. Section Comm 46.05 (2) (g) describes another risk factor in terms of the impact or potential impact to a receptor of concern as defined by the departments. Please define the phrase "receptor of concern." What other "receptors of concern" need to be evaluated that are not already addressed by risk criteria?

Answer:

Receptors of concern are pathways by which contamination may migrate from the source area and potentially impact other areas or properties. Receptors include but are not limited to: basements where explosive or toxic vapors are present or potentially present; water and sewer lines and other utility corridors along which vapors, free product or highly contaminated water may flow, and interbedded permeable soil layers.

9. Section Comm 46.06 (1) (b) describes use of groundwater use restriction or GIS registry. Does a requirement for groundwater use restriction or GIS registry apply only to developable groundwater or any groundwater?