

Technical Focus Group Meeting Notes
Tuesday, August 14, 2007

1. Closure Protocol Study

Terry Evanson, DNR, reviewed the closure protocol study that DNR, Commerce, EPA and the University of Wisconsin are undertaking. The purpose of the study is to evaluate the procedures the state uses to approve cleanups when petroleum contamination remains above state standards and natural attenuation is relied on to complete the cleanup. The next steps in the study will include more data analysis, report writing and peer review. Terry's summary included this information:

- All database analysis and field work is complete. Temporary monitoring wells installed for this study have been abandoned.
- We are working on the first draft of the report. This draft will go to UW & Commerce, and after their reviews the second draft will be sent to the peer reviewers, including EPA. The peer review draft may be available on RR web site.
- Basic database findings include:
 - The 133 categorized sites in the database include "clay" (53 sites, or 40%); "non-clay" (60, or 45%) and bedrock (20, or 15%).
 - Median depth to groundwater was 6.5 feet.
 - There was a median of 7 water table monitoring wells per site. Horizontal groundwater flow, gradient and variation in groundwater direction were assessed at the majority of the sites.
 - The median change in groundwater flow direction was more than 40 degrees over the monitoring history.
 - Vertical characterization was less common – only 25% of sites had one or more piezometers and very few clay sites had any piezometers.
 - The median time between the historical maximum groundwater contaminant concentration and the maximum recorded at closure approval was less than 3 years.
 - At sites where active remediation took place, the median monitoring time was 3.5 years.
 - At sites where monitored natural attenuation (MNA) was the only remedy, the median monitoring time was only 1.1 year.
 - For this study, active remedies were applied to 72% of the sites; 28% were MNA only.
 - Sites with an active remedy had a larger decline in contaminant concentrations at closure than the MNA-only sites. Clay sites had the least improvement in groundwater quality, particularly MNA-only clay sites. Clay sites were also twice as likely to not be actively remediated as the other types of sites.
 - Statistical tests (Mann-Kendall or Mann-Whitney) were applied to 79 sites that had enough benzene data to assess. Trends could be detected at 50% or fewer of the sites with 6 to 8 rounds of groundwater data, depending on the test used. Four rounds of data gave inconsistent trend results. The coefficient of variation (part of the Mann-Kendall test) did not reliably determine plume stability.
- Basic fieldwork findings include:
 - Sites were categorized by use history – 4 were commercial gas stations and 6 were non-commercial petroleum tank sites.

- At all 10 sites, groundwater contamination levels near the source of the contamination had higher concentrations of total benzene, toluene, ethylbenzene and xylene (BTEX) than the concentrations that were measured at the time of closure.
 - For 7 sites, the groundwater plume length was the same or longer than it had been at closure. Only one site, with contamination in bedrock, appears to have had a *significant* plume expansion since closure.
 - Benzene was no longer at the leading edge of the plumes and benzene plumes became smaller after closure. Benzene was found less frequently in the study monitoring wells than it had been at the time of closure.
 - Naphthalene was detected more frequently than benzene and was detected further downgradient than benzene. It was also detected more frequently in piezometers installed after case closure than had been seen at the time of closure. Naphthalene plumes seem to have expanded, but there was also less monitoring of naphthalene during site investigations.
 - Contaminant concentrations are significantly correlated to changes in water table elevations. This confounds the use of simple tools for assessing MNA.
- Assessment of MNA; Achieving Groundwater Standards:
 - Contaminant concentration data ranged over 5 to 6 orders of magnitude, making a “one size fits all” evaluation of MNA quite difficult.
 - There is a short time frame of monitoring and limited data available to assess MNA.
 - Significant shifts in groundwater flow direction limit the usefulness of standard MNA models.
 - The impacts of a fluctuating water table and continuing releases of contaminants to groundwater confound the assessment of MNA trends.
 - It is not possible, given current data, to determine when groundwater quality is likely to meet NR 140 standards.

Group members asked how these findings will impact the closure review process, but DNR has not made any decisions prior to peer review of the draft report. The graduate students’ master’s theses are on the web at dnr.wi.gov/org/aw/rr/technical/index.htm#cps.

2. Vapor Intrusion

DNR’s guidance is still being discussed internally. It will focus on how to obtain case closure at sites where volatile contaminants have the potential to move into structures. DNR is working with the Dept. of Health & Family Services, and checking into procedures used in other states. A fundamental issue is determining the risk level that represents a potential human health threat.

3. Rule Updates

DNR is still working on rule proposals that will eventually go to the Natural Resources Board for approval to hold public hearings. These include:

- Adding post-closure responsibilities, such as allowing DNR access for inspection of land use controls and notifying DNR if a structure that inhibited cleanup has been removed. We will also need to update our case closure request form and the contents of the GIS Registry packet of information.
- Removing the tables of soil standards from NR 720 in favor of algorithms to calculate site-specific standards, based on DNR’s default exposure risks. Deleting standards for gasoline-

range organics (GRO) and diesel-range organics (DRO) while still allowing these parameters to be used for assessment. Clarifying that the risk of direct contact with contaminants includes both the inhalation and dermal exposure pathways. The group agreed that these changes are consistent with previous discussions on these topics.

DNR also mentioned that consideration was being given to amending the fees in NR 749, which have not changed in 10 years. "Flat lining" and reductions of federal grants along with increased costs has already led to staff reductions. Currently, 7 to 9 FTEs are supported by fees. Once approval from DNR administration to proceed is received, the RR Program will work with this group and the Brownfields Study Group on potential changes to the fees. DNR clarified that review fees paid to the Remediation and Redevelopment Program are used for cleanup related purposes.

The group generally agreed that this approach to rule development was reasonable. One member asked if DNR was concerned about the potential for inconsistent review of the new methodology for developing soil standards. Mark Gordon said DNR would need to watch for this and noted that the most uncertainty could be addressed by identifying the default exposure assumptions and other input parameters up front.

4. Wisconsin Brownfields Insurance Program

Michael Prager reminded the group that brownfields insurance can add be an asset in property transactions. Benefits include the fact that this program is designed for smaller properties where other brownfield insurance packages may not be practical. Other benefits include streamlined underwriting, pre-negotiated endorsements (with fewer legal fees), and lower costs. This insurance can be applied at any stage of the investigation or cleanup, starting after Phase I and II assessments. Fundamentally, this is very similar to coverage obtained through Wisconsin's Voluntary Party Liability Exemption. Although no policies are known to be in place at this time, the insurance broker has provided some price quotes.

5. All Appropriate Inquiry

Laurie Egre asked if the clients of the environmental consultants at the meeting were requesting the new Phase I environmental site assessment procedure developed by EPA and ASTM. The general answer was yes. Some clients "customize" the assessment process based on what they already know about the property in order to save consulting costs. Overall, the consultants estimate that the new procedure increases the cost of a Phase I by 20% to 30%.

Lenders also sometimes "streamline" the process to save time and limit expenses. Larger lenders are becoming accustomed to the idea of considering potential contamination on properties that are or were used commercially. They generally look to an environmental consultant to advise them, and are happiest when there are no recognized environmental concerns identified in the Phase I.

6. Upcoming changes to the RR Sites Map and BRRTS on the Web

Laurie advised the group of upcoming changes to the RR Sites Map, and to the database (BRRTS on the Web). The RR Sites Map improvements will be completed by November. One comment received is that it takes DNR quite a while to locate properties on the RR Sites Map. DNR acknowledged that this is a concern and that the management team was working toward greater consistency and timeliness.