



## State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor  
Scott Hassett, Secretary  
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January 22, 2004

Ms. Patarcity  
Beazer East, Inc.  
One Oxford Centre, Suite 3000  
Pittsburgh, PA 15219-6401

Subject: Comments on Progress of the Koppers Inc., Superior, Wisconsin Facility  
BRRTs: 02-16-000484

Dear Ms. Patarcity:

We would like to thank you for the meeting held November 21, 2003. We appreciate your expressed interest in moving forward in a timely fashion. This letter is to provide comments and direction for the contamination found in the ditch, unnamed tributary, and Crawford Creek.

On June 5, 2001 EPA- Region 5 approved a WDNR request that the NR 700 Wis. Admin. Code series be used as the basis 1) undertaking site investigations, 2) evaluating and selecting remedies, 3) establishing soil cleanup standards, and 3) closing out hazardous waste sites.

### Investigation

The requirements of an investigation are set forth in NR 716 Wis. Admin. Code. Investigation results have been provided to the Department in several iterations. A comprehensive document in compliance with NR 716.15 Wis. Admin. Code, should be provided to the Department. This document should summarize all the data and conclusions reached to date as they currently apply to the off site floodplain and sediment areas, including any preliminary assessments of human health and/or ecological risks. As part of your review and compilation of these results we would ask that you identify areas needing additional investigation in order to make decisions as to the risks posed to humans or biotic components of the terrestrial floodplain and aquatic system in the off site areas.

A variety of maps (topography and aerial photos) to document sample locations have been used. At least one "base" map should be prepared with all the sampling locations for the off-site contamination.

We request that isoconcentration maps be prepared where possible from the base map, with individual maps depicting the concentrations of 1) PAHs, 2) calculated 2,3,7,8 dioxin TCDD-EQs using the WHO TEF values, 3) pentachlorophenol and other phenolic compounds, and 4) DRO. In the event there are not enough data points to construct an isoconcentration map, then a map with the laboratory results on the map should be developed.

## **Preliminary Scoping Level Human Health Risk and Ecological Risk Assessment Considerations**

Based on the existing compiled data, a preliminary scoping level risk assessment should be done for all the contaminants of concern as listed above in the off site areas. Please evaluate the potential role of the contaminants of concern in any overall cleanup decisions for the drainage ditch and Creek portions of the site, including floodplains, needs to be refined and clarified beginning with providing more risk screening information.

The Department encourages you to discuss the following for all contaminants of concern within the off site floodplain and sediment depositional areas, with a congener specific discussion for dioxin/furan: The results of any surface water sampling results should also be included in the screening where appropriate.

- Differences in Toxicity Equivalency Factors and in behavior due to differences in physical and chemical characteristics of the substituted congeners versus 2,3,7,8-TCDD and relation to exposure risks to receptors.
- Human Pathways
  - Consumption of fish (e.g., AMEC study) or Wildlife (e.g, waterfowl)
  - Exposure to PCP, DRO, PAHs, and dioxins/furans, in soil and sediments (e.g., child accessing bank and floodplain soils and channel sediments; model various exposure scenarios, e.g., using average and RME intakes and different durations of exposure)
- Wildlife
  - Fish Health from Exposure or Bioaccumulation
  - Birds
    - Fish eating
    - Non-fish eating (e.g., food chain of mice or voles associated with floodplain soils to owls or hawks or from earthworms to robins)
  - Mammals
    - Fish eating (e.g., mink and otter)
    - Non-fish eating

In regard to the exposure considerations above for fish and piscivorous fish and mammals, please discuss the need and utility of collecting fish from the site for tissue analysis or using deployed lipid bags as a surrogate for this purpose.

- Benthic Macroinvertebrate and Fish Communities of Crawford Creek
  - Summary of previously conducted studies (July 2000 BB&L Report) in the context of screening and possible need for additional validation studies.
  - Potential off site transport of dioxins and furans or any other contaminants of concern down Crawford Creek to the Nemadji River

Applicable benchmark values should be used in the screening process where available and applicable for any media.

Based on the screening level information provided on the above, WDNR will discuss with Beazer the need for any additional studies that may include conducting more formal, structured screening level and baseline risk assessments for the off site areas.

We request that a copy of the preliminary screening level information as it relates to human health risk be provided to the Department and to Henry Nehls-Lowe, at Department of Health and Family Services.

### **Clean –Up Goals**

The residual contaminant levels (RCLs) for soil and sediment quality goals (SQGs) must be protective of human and environmental receptors. The NR 700 Wis. Admin. Code Series allows flexibility in developing site-specific cleanup goals for contaminated sites. This flexibility allows for the use of site specific background values, generic values developed in Administrative Code or Department guidance, site specific risk calculations, or screening levels found in recent scientific literature or developed for other jurisdictions that are appropriate to the site.

### **Soil**

Chapter NR 720 Wis. Admin. Code provides flexibility in determining RCLs for soil contaminants of concern. For soil, we can accept as cleanup levels, 1) background data from representative unimpacted areas, 2) risk-based levels, and 3) generic levels found in NR 720 Wis. Admin. Code and Department guidance. For individual compounds, the excess cancer risk cannot exceed  $1 \times 10^{-6}$ . In addition, the cumulative excess cancer risk for all contaminants cannot exceed  $1 \times 10^{-5}$  at the site.

The Department has developed guidance for polynuclear aromatic hydrocarbons, which is located the following Department Internet website:

<http://www.dnr.state.wi.us/org/aw/rr/archives/pubs/RR519.pdf>

For other contaminants, RCLs can be calculated using Wisconsin 'default exposure assumptions' as inputs into EPA's Soil Screening Guidance model, which is found at the following Internet web site:

[http://risk.lsd.ornl.gov/calc\\_start.shtml](http://risk.lsd.ornl.gov/calc_start.shtml)

Wisconsin default values are required input values for the model and are found in s. NR 720.19 (5)(c), Wis. Admin. Code. Guidance for this process can be found at the following Department Internet website:

<http://www.dnr.state.wi.us/org/aw/rr/archives/pubs/RR682.pdf>

In regards to dioxin/furans, the use of EPA's 1 part per billion (1,000 pg TCDD-EQ/g) as a cleanup level in residential soils is deemed too high to be protective of human health, based on the derivation method contained in NR 720 Admin. Code. EPA has called it a policy-based level, which correctly distinguishes it from a risk or health-based cleanup standard, which is required by NR 720 Wis. Admin. Code. EPA apparently adopted the use of a 1 part per billion dioxin/furans RCL, in part, because when cleanup decisions were previously made about dioxin sites in other states, there was also significant area-wide levels of dioxin/furans. Wisconsin's has not encountered a similar area-wide, background level of dioxin/furans in the state. Yet, should similar circumstances be encountered, guidance under NR 720 Wis. Admin Code enables taking into account area-wide background levels when determining a site-specific RCL for contaminants of concern.

## **Sediments**

The Department has recently published Sediment Quality Guidelines, which are primarily meant to protect the benthic macroinvertebrate communities in surface waters. These Guidelines are available at the following Department Internet website:

[http://dnr.wi.gov/org/aw/rr/technical/cbsqg\\_interim\\_final.pdf](http://dnr.wi.gov/org/aw/rr/technical/cbsqg_interim_final.pdf)

The guideline values do not apply to non-polar organic compounds that bioaccumulate and bioconcentrate up the food chain. The guidance includes values for pentachlorophenol, dioxin/furans, and PAHs. The effect concentrations in the guidelines are expressed on a 1% TOC basis. For comparison purposes, site concentrations also need to be expressed on this basis. The TOC content in the Crawford Creek sediments may be elevated due to the anthropogenic sources such as creosotes and fuel oils and not natural sources and the use of these TOC values are not appropriate for adjusting site contaminant concentrations. The partitioning characteristics of contaminants from these TOC sources would be different from that of natural sources. In these circumstances, the appropriate TOC concentrations to use are those at the background site or a default value of 1% if background data is not available.

We would also consider site-specific data in regards to developing a background level for a cleanup goal. This would involve collecting three or more samples from non-affected sites within the Crawford Creek system. To derive a more representational mean value, the number of samples should be greater than three. The other option is that if Beazer agrees, the screening guideline values can be used to derive the sediment cleanup goals.

## **Remedy Selection**

Chapter NR 722 Wis. Adm. Code identifies the process by which remedial actions are selected. Specifically, ss. NR 722.07 and NR 722.09 Wis. Adm. Code deal with the identification and selection of remedial actions.

## **CAMU**

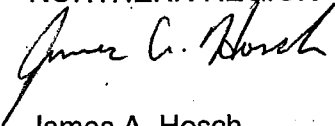
Section NR 636.40 Wis. Adm. Code allows the Department to establish specific closure requirements for CAMUs to be protective of human health and the environment. We have flexibility to approve various designs provided appropriate justification is given. In order to avoid needless justification, we would like to suggest that NR 504.04(4) Wis. Adm. Code requirements that apply to landfills could be used as a reference to siting criteria and performance standards that we consider protective.

We are requesting that a conceptual CAMU design be provided. This should include the design characteristics of the cap, liner, and any leachate collection system. An estimate of waste volume based upon the aforementioned Preliminary Screening Level Human Health Risk and Ecological Risk Assessment Considerations. An estimate of the degree of saturation of the sediments and a conceptual plan to deal with any wastewater that may be generated from wastes should be provided as well. A proposal for monitoring the proposed location prior to construction should also be provided.

Attached is a memorandum, prepared by Department Attorney Deb Johnson, providing guidance on the applicability of setbacks.

Once this information is submitted, the Department will provide further comments in writing. Should you have any questions regarding this letter, please feel free to contact me at 715-392-0802.

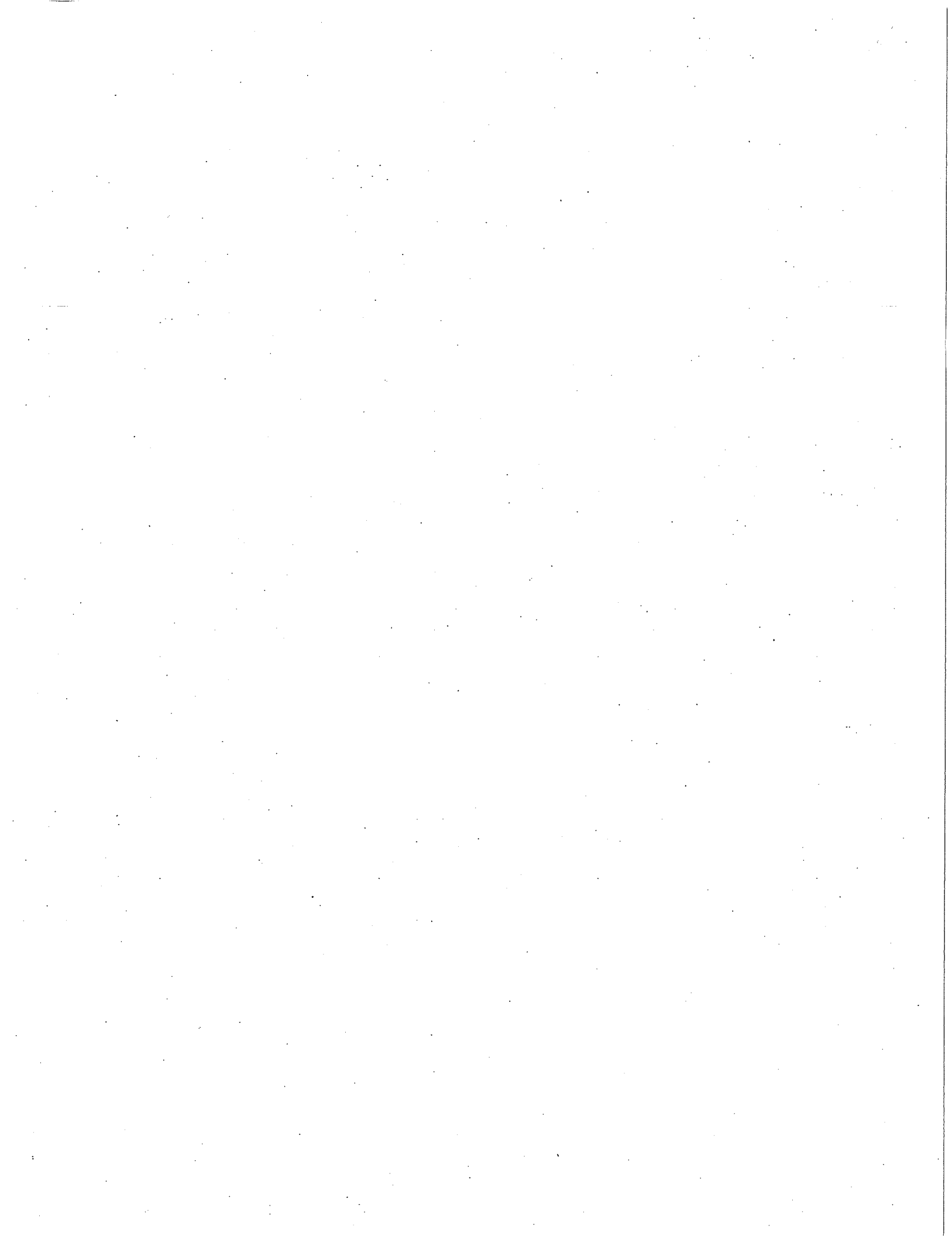
Sincerely,  
NORTHERN REGION



James A. Hosch  
Hydrogeologist

Attachments: Memorandum on Setbacks

Cc: John Robinson – Rhinelander  
Tom Janisch – RR/3  
Mark Gordon – RR/3  
Henry Nehls-Lowe-DHFSS, 1 West Wilson Street, Madison, WI 53702  
Jeff Holden – BBL, P.O. Box 66, Syracuse, NY 13214-0066  
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Linda Paul, - KII, 436 7th Avenue, Pittsburgh, PA 15219  
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## CORRESPONDENCE/MEMORANDUM

DATE: February 6, 2003

FILE REF:

TO: Mark Gordon RR/3

FROM: Deborah Johnson LS/5

SUBJECT: Applicability of Ch. NR 812 Separation Distances to a Ch. NR 636 Corrective Action Management Unit

Question: Is a Corrective Action Management Unit, constructed under Ch. NR 636, a landfill subject to the separation distance of 1200 feet in Ch. NR 812?

Short Answer: A CAMU is not a landfill as defined in s. NR 812.07(56) of the well construction code.

Background : A Corrective Action Management Unit ("CAMU") is a unit constructed within the boundaries of a hazardous waste facility to manage remediation waste generated during a clean up at the facility. A CAMU is defined in s. NR 600.03(49).

**600.03(49)** "Corrective action management unit" or "CAMU" means an area within a facility that is designated by the department under ch. NR 636 for the purpose of implementing corrective action requirements under s. NR 635.17 and s. 291.37, Stats. A CAMU shall only be used for the management of remediation wastes pursuant to the implementation of such corrective action requirements at the facility.

A CAMU is proposed for a hazardous waste facility where a residence with a private well is located less than 1200 feet from the nearest boundary of the proposed CAMU. The proposed CAMU would be used to consolidate and manage remediation wastes generated during the clean up and the waste would remain after closure of the unit. Because s. NR 812.08, Table A, requires a 1200 foot separation distance between a well and a landfill, the question of whether a CAMU is a "landfill" under Ch. NR 812, is significant at this site.

Discussion: Under s. NR 812.07(56), a "landfill" is defined as follows:

**812.07(56)** "Landfill" means a solid waste disposal site or facility . . . where solid waste is disposed on land. This term includes existing, proposed and abandoned landfills, . . . and hazardous waste disposal facilities as defined in chs. NR 600 to 685. (emphasis supplied)

In this ch. NR 812 definition, a hazardous waste disposal facility is specifically distinguished from a solid waste disposal facility. Then, looking to chs. NR 600 to 685, a CAMU is not a landfill, because it is not a "hazardous waste disposal facility" as defined in s. NR 600.03(62), which states:

**600.03(62)** "Disposal facility" means a facility or part of a facility at which hazardous waste is intentionally placed into or on the land or water, and at which hazardous waste

will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation wastes are placed. (emphasis supplied)

Likewise, placement of remediation waste in a CAMU is not "land disposal" as defined in the NR 600 series. Section NR 600.05(62), defines land disposal as:

**600.05(62)** "Land disposal means placement in or on the land, except in a corrective action management unit . . . (emphasis supplied)

Based on the ch. NR 812 definition of a "landfill", a CAMU is not a landfill and is not subject to the 1200 foot separation distance from a well.

I have also looked at whether a separation distance, other than the separation between a well and a landfill, might be applicable to a CAMU. Section NR 812.08(4)(g)3., prescribes a 1200 foot separation distance between a well and a hazardous waste treatment facility regulated by the department. Section 812.07(50), states that a hazardous waste treatment facility has the meaning designated in s. 291.01(22), Wis. Stats. A CAMU that is used solely for the disposal of remediation waste, and not for treatment, does not meet this definition.

Additionally, because a hazardous waste is, by definition, a solid waste, I looked at several other potentially applicable "solid waste" listings in s. NR 812.08, Table A. Specifically, the separation distances for a solid waste processing facility, solid waste transfer facility and solid waste site. Both "solid waste transfer facility" and "solid waste processing facility" are defined in s. NR 812.07. A CAMU for disposal of remediation waste is neither. The term "Solid waste site" is not defined, but includes the following parenthetical reference:

"Solid waste site (Distance to Nearest Fill Area or Proposed Fill Area if Known; Otherwise to the Property Boundary)" (see Table A)

This reference to "fill area" suggests that a "solid waste site" is, in fact, a "solid waste disposal site." I have therefore concluded that the reference to a "solid waste site" in Table A is simply another way to refer to a land fill or land disposal site. Because a CAMU for disposal of remediation waste is not a landfill (because it is not a hazardous waste disposal facility as defined in Ch. NR 600), I have concluded that it is also not a "solid waste site" as listed in Table A. Therefore, the 1200 foot separation distance between a "solid waste site" and a well is also not applicable to a hazardous waste CAMU.

Conclusion: A corrective action management unit is not a "landfill" under ch. NR 812, Wis. Admin Code. In addition, Table A in ch. NR 812, Wis. Admin. Code contains no other separation distance that would be applicable to a corrective action management unit.