



July 18, 2011

Dear Neighbors and Property Owners near the Kewaunee Marsh
(Buzz Besadny Fish and Wildlife Area) in the Town of Pierce and City of Kewaunee


As you may have a view of this particular part of the Kewaunee Marsh, you're receiving this letter to let you know about a construction project that will be happening along the Ahnapee Trail in October and November 2011. The Department of Natural Resources received nearly a \$1 million settlement from the Wisconsin Central Ltd. Railroad to clean up an historic arsenic spill. Possibly you've walked by and read the sign about the **1940's Kewaunee Marsh Arsenic Spill** or seen some trucks and workers along the fenced area by the trail. The attached brochure gives you background information on the spill.

Groundwater and surface water has been sampled from 36 monitoring wells surrounding the spill site since 1996. **The data shows that there is no threat to drinking water wells in the area.** The high level of dissolved arsenic in water is present within a 7 foot layer of peat, which overlays a 7-12 foot layer of organic silts. The dissolved arsenic is tightly bound by the peat and organic silts. The spill site is surrounded by a tall fence and is covered by a dense vegetative cap constructed in 1996. We've measured a **~6% yearly decrease in arsenic contamination under the cap** since that time. However, over the decades the dissolved arsenic at the source under the ballast has remained relatively stagnant but highly concentrated. With the spring snow melts, the water level rises temporarily and some dissolved arsenic moves away from the source and spreads out within the fenced area of the marsh. A small volume of arsenic also temporarily discharges into the Kewaunee River.

Specifically the cleanup will occur at the **source of the spill, under a 70-foot length of the Ahnapee Trail and which extends about 120 feet northeasterly into the marsh.** The cleanup will consist of mechanically mixing hydrogen peroxide, ferric sulfate, limestone, and bentonite into the source area marsh material. The incorporation of the additives will permanently bind up the arsenic. Adding bentonite as a final component reduces the permeability of the peat and effectively stops the arsenic from further leaching into the marsh and the river. **We plan to continue sampling the monitoring wells after the clean up to evaluate its success.**

Sections of the Ahnapee Trail will be closed in the area surrounding the cleanup between October and November and signs will be posted. There will be trucks on the trail entering from River Road (CTH E), northwest of the bridge that crosses the Trail. The Ahnapee Trail will be restored and open to public use following completion of the cleanup in early December. If you have any questions about the details of this cleanup, please feel free to contact me at (920) 662-5165 or e-mail at Annette.weissbach@wisconsin.gov. If you would like updates on how things are progressing, please let me know and I'll send you periodic e-mail updates. You may also contact Bruce Urben, DNR Northeast Region Air & Waste Leader at 920-662-5160 for information.

The Department thanks you in advance for your patience during this cleanup project.

Sincerely,


Annette Weissbach, Project Manager
WDNR Remediation & Redevelopment-Green Bay

Attached brochure: *Kewaunee Marsh Cleanup Project*, locational map

WDNR Kewaunee Marsh Cleanup Historic Arsenic Spill



Cleanup Alternatives

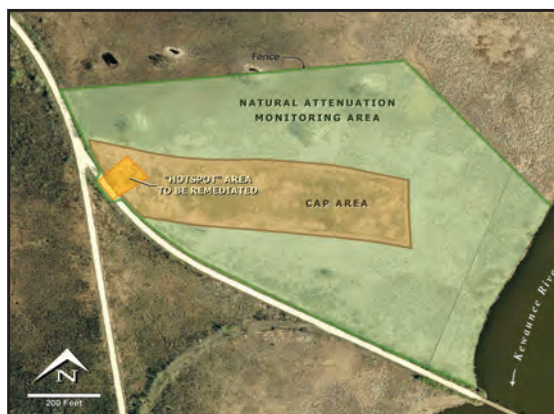


Field trials test plots.

Treatability studies were conducted to evaluate several alternative ways to clean up the site. The treatability studies looked at approaches for remediating both the highly contaminated sediments near the original spill under and next to the rail bed, and less-contaminated areas in the rest of the marsh. A site-specific remedy was developed for the highly contaminated sediment, allowing it to be left in place after treatment. Field tests were conducted on one of the alternative methods for treating the moderately contaminated sediment. However, further studies indicated that the sediment will naturally clean up over time and a more widespread remedy may not be necessary.

Where do we go from here?

The areas of highest arsenic contamination will be remediated by mixing and treating the sediment and water with additives. The process was developed during the treatability studies to make the arsenic stable and immobile and to further prevent arsenic migration away from the railroad bed. After treatment, the immobilized material will remain in the marsh and will be covered with a vegetative cap. The remediation is planned for the fall of 2011. The less contaminated area will be monitored to ensure that natural attenuation continues until the arsenic has been reduced to background levels.



Map of remediation areas.

For more information, contact:

Annette Weissbach
Project Manager
WDNR Remediation and Redevelopment Program
annette.weissbach@wisconsin.gov

All photos and publishing support courtesy RMT, Inc.

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C. D. "Buzz" Besadny Fish & Wildlife Area

Kewaunee Marsh Cleanup Project

Responding to an Historic Arsenic Spill



PUB-RR-910

July 2011

dnr.wi.gov/org/aw/rr

History

In the early 1990s the Wisconsin Department of Natural Resources (WDNR) was notified by a hunter that an area within the C.D. "Buzz" Besadny Fish & Wildlife Area contained stressed and dead vegetation (see photo below). Agency staff collected soil and water samples from the area and found high concentrations of arsenic in and around the stressed area.



Stressed vegetation in the marsh, 1993.

Where did the arsenic come from?

The impacted area is adjacent to and below a former railroad track once owned and operated by the Green Bay and Western Railroad. Investigation by both the WDNR and the Railroad suggest that the high arsenic concentrations may have been the result of a railroad spill or release of calcium arsenate during a train derailment sometime around the 1940s. Arsenic was commonly used as a pesticide during that time period.



An aerial view of the site.

Immediate Response

The WDNR and the Railroad have worked together since 1996 to determine the extent of the problem and to develop remedial actions. Initially, a fence was installed to limit public access, and a cap was placed over the most contaminated sediment to limit arsenic exposure to wildlife in the area. After the immediate threat was removed, investigations were conducted to determine the extent of arsenic contamination, its impact on the environment, and evaluate alternatives for cleaning up the site.



Crews install a cap over contamination at the site.

Soil, Water & Ecological Evaluation

The WDNR has determined the extent of arsenic contamination in both the sediment and water at the site. Studies have shown that the arsenic in the C.D. "Buzz" Besadny Fish & Wildlife Area is not a drinking water concern, and – after the cap installation – there has been minimal impact on wildlife in the area. High levels of arsenic were found under the rail bed and in sediments within the fenced area near the trail, with moderately contaminated sediment in the rest of the impacted area. Arsenic levels in the moderately contaminated sediment are decreasing about 6% per year due to natural loss of the arsenic over time.



Soil samples are tested in the marsh.



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Chairman Brian Paplham, Town of Pierce
Mayor John Blaha, City of Kewaunee
Administrator Ed Dorner, Kewaunee County
Chairman Bob Weidner, Kewaunee County Board
Promotion and Recreation Director Matt Payette, Kewaunee County

SUBJECT: DNR cleanup action at the historic arsenic spill: Ahnapee Trail in Kewaunee County

Dear Gentlemen,

The attached letter is being sent to 45 neighbors and property owners near a portion of the CD "Buzz" Besadny Fish and Wildlife Area, also known as the Kewaunee Marsh.

The letter and brochure is intended to give folks a "heads up" that we are planning a remedial action this fall and there will be construction activities occurring within eyesight or earshot of some of the property owners. The letter and brochure provides information about the history of the arsenic spill and the cleanup we will be conducting.

Over the last year, I have been in communication with Matt Payette, Gary Hansen (DNR Trails Coordinator), and Aaron Buchholz (DNR Buzz Besadny Property Manager) planning this project and making sure that the construction has minimal impact on the use of the Ahnapee Trail. The fall time period was chosen to be least disruptive for the many varied uses of the Trail.

Mr. Maynard Kuehl has graciously offered to allow us to use a portion of his property for an access road off CTH E. Between October 1st and December 15th 2011 at the latest, a portion of the Ahnapee Trail will be closed and there will be intermittent heavy traffic on the Trail and in the vicinity of CTH E. The Trail will reopen in time for the snowmobile season. In 2012, any needed repairs on the Ahnapee Trail will be taken care of as part of the construction contract.

Please feel free to contact me if you any questions or comments about this project. If there are any specific concerns you would like the Department of Natural Resources to address please let me know. I can be reached at 920-662-5165 or e-mail at Annette.weissbach@Wisconsin.gov. You may also contact Bruce Urben, DNR Northeast Region Air & Waste Leader at 920-662-5160 for information.

Sincerely,

Annette Weissbach, Project Manager
Remediation & Redevelopment Program

Attachment: Letter to Residents, Brochure, Locational Map

Maynard Kuehl – N4137 CTH E, Kewaunee WI 54216
Bruce Urben – Air and Waste Leader, Northeast Region
Jean Romback-Bartels – Acting Regional Director Northeast Region
Aaron Buchholz, Gary Hanson, Dave Allen, Darren Kuhn – NER
Mark Giesfeldt – RR/5

WDNR Kewaunee Marsh Cleanup Historic Arsenic Spill



Cleanup Alternatives

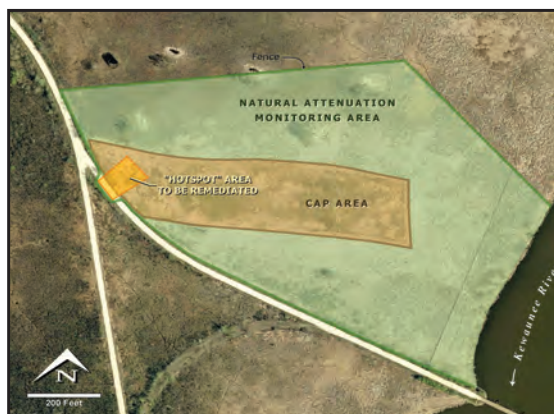


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