



May 16, 2017

Darsi Foss, Director
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SENT BY ELECTRONIC MAIL

RE: Path Forward for Clean Groundwater at Badger Army Ammunition Plant

Dear Ms. Foss,

The April 7, 2017 Department of Army letter to U.S. Senator Tammy Baldwin states that the military recently initiated communications with the Wisconsin Department of Natural Resources (WDNR) and that a “path forward” has been developed concerning the protection of human health and the environment at the former Badger Army Ammunition Plant. The Army also indicates that a meeting is planned with Senator Baldwin, and later the public.

Given the current consideration of groundwater remedial actions at Badger, irrespective of the construction or not of a municipal water system, we are writing to encourage the following: (1) immediate and full compliance with approved permit conditions which require a comprehensive investigation of contaminant source area soils, including sampling for all six forms of the explosive dinitrotoluene (DNT) found at Badger, and (2) the addition of permit conditions that stipulate existing and new Health Advisory Levels for Drinking Water as remediation goals for groundwater.

MONITORED NATURAL ATTENUATION - DNTs

On June 28, 2012, the WDNR made a determination of the final remedy for the groundwater contamination located on and emanating from the Badger. The approved remedy included the installation of a public water supply system (in lieu of ongoing testing of private and public drinking water wells), the phased shut-down of groundwater pump-and-treat systems, and **monitored natural attenuation** of groundwater contamination.

Among the most significant conditions of approval, the WDNR required an investigation of the contaminants retained in **source area soil** associated with the three (now four) identified contaminant groundwater plumes. Condition #9 specifies that the Army shall conduct “adequate saturated and unsaturated soil sampling, for all appropriate parameters, within the PBG, the DBG and central plumes to determine the nature and extent of site contaminants adsorbed onto the soil.”

This study was deemed essential in the WDNR’s 2012 approval because “back-diffusion of adsorbed waste constituents appears to be a major contributor to the groundwater plumes’ stability, fully characterizing the adsorbed waste mass is necessary to evaluate **natural attenuation** as a possible remedial alternative.”

HEALTH ADVISORY LEVELS – Degradation Products of DNT

The selected remedy for the groundwater contaminant plumes is monitored natural attenuation, and degradation is a primary mechanism for achieving cleanup goals for DNT in groundwater.

On April 4, 2017, Wisconsin Department of Health Services issued interim Health Advisory Levels (HALs) that are the first federal or state drinking water guidelines in the U.S. for four (4) currently unregulated degradation products of the explosive DNT. The new HALs, requested by CSWAB in a formal petition in 2015, may now be used by state regulators as remediation goals for the protection of Wisconsin's groundwater and drinking water resources.

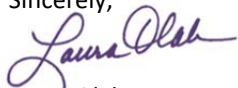
Of the four new HALs, the lowest is for 2,4-Diaminotoluene at 0.01 parts per billion (ppb) based on cancer risk. By comparison, Wisconsin's drinking water standard for DNT is five times higher at 0.05 ppb, indicating that the degradation product (2,4-Diaminotoluene) is more toxic than the original parent compound (DNT).

Moreover, depending on site conditions, certain forms of DNT may be completely transformed by bacteria to 2,4-diaminotoluene. At Badger, 2,4-diaminotoluene has been detected in groundwater at concentrations as high as 21,000 ppb (April 2003). Its presence is likely resulting from the microbial degradation of residual DNT in soils and groundwater, health officials noted.

The three other DNT degradation products have the following HALs: 100 ppb (2-Nitroaniline), 2 ppb (3- and 4-Nitroaniline, combined), and 300 ppb (2,6-Diaminotoluene).

Thank you for your time and consideration of these important issues.

Sincerely,



Laura Olah

CC:

U.S. Senator Tammy Baldwin
Ho-Chunk Nation President Wilfrid Cleveland
Ho-Chunk Nation Aquatic Biologist Randy Poelma
U.S. Congressman Mark Pocan
State Senator Jon Erpenbach
State Representative Dave Considine
Town of Merrimac Chairman Steve Peetz
Town of Sumpter Chairman Tim Colby
Town of Prairie du Sac Chairwoman Janine Godfriaux-Leystra
Sauk County Supervisor Bill Wenzel
Sauk County Supervisor Judy Ashford
Badger Restoration Advisory Board Chairman Ron Lins