CSWAB Comments on the Groundwater Cleanup System Shutdown at Badger Army Ammunition Plant

Citizens for Safe Water Around Badger (CSWAB) has asked state regulators to require additional analysis and data collection in response the recent shutdown of a groundwater treatment system at Badger Army Ammunition Plant. The recommendations to the Wisconsin Department of Natural Resources (WDNR) are intended to ensure better protection of human health and the environment.

A technical review of the Army's site activities has concluded that the military has not defined the degree and extent of soil or groundwater contamination and has not incorporated adequate groundwater monitoring to effectively assess risks posed by contamination in the vicinity of the former military base.

In December 2012, the WDNR approved the Army's proposal to shut down the Interim Remedial Measures (IRM) groundwater treatment system. The IRM was installed in 1990 and had been maintained to control migration of explosives-contaminated groundwater at the source area inside Badger. The two IRM extraction wells act as a sink where the groundwater is captured before migrating south, according to the Army. The IRM was designed to reduce contaminant concentrations within the dissolved groundwater plume directly downgradient of the source area. Contaminants are removed from the water through carbon adsorption. Treated groundwater is then discharged to surface water via a diffuser structure on the bed of Lake Wisconsin near Gruber's Grove Bay.

The source of this contaminant plume is subsurface soils at the former Propellant Burning Grounds waste pits, located in the southwest portion of Badger. The contaminated waste area was approximately 3 acres in size and contained three disposal pits and a large open area used to burn propellant and organic solvents from the 1950s through the 1970s. Contaminants within the waste materials are released through the soil column into the groundwater.

In 2008, the waste pits at the Propellant Burning Grounds were capped with a geosynthetic barrier and compacted clay. The area was then covered with topsoil, graded, and seeded. However, the remedial cap over the contaminated source area is not sufficient in completely reducing residual contamination beneath the Propellant Burning Ground from reaching groundwater, according to Lori Huntoon, a professional geologist hired by CSWAB to monitor the groundwater cleanup.

Concentrations of the explosive DNT in groundwater at Badger have consistently exceeded the state's health-based standard of 0.05 parts per billion (ppb). Total DNT in one monitoring well near the Propellant Burning Grounds increased to over 1,000 ppb from 2009-2011 and was detected at 500 ppb in 2012. This level of DNT indicates that a source is continuing to impact groundwater.

Remedial caps are commonly installed for contamination located near the surface in order to minimize the potential for precipitation to leach contaminants into the groundwater. However, at the former Propellant Burning Grounds, the installed barrier (cap) is eighty feet above the contaminated zone and is not capable of negating the regional groundwater flow from the Baraboo Bluffs to the southeast. As a result, the cap is not protecting these soils from leaching contaminants into the aquifer.

Unless and until soil contamination within the source area is addressed, groundwater at Badger will continue to be impacted. Because contamination remaining within the soil column is sometimes below the water table, subsurface soils will continue to contribute to groundwater contamination into the future unless the contamination is removed or other remedial measures are implemented, Huntoon confirmed.

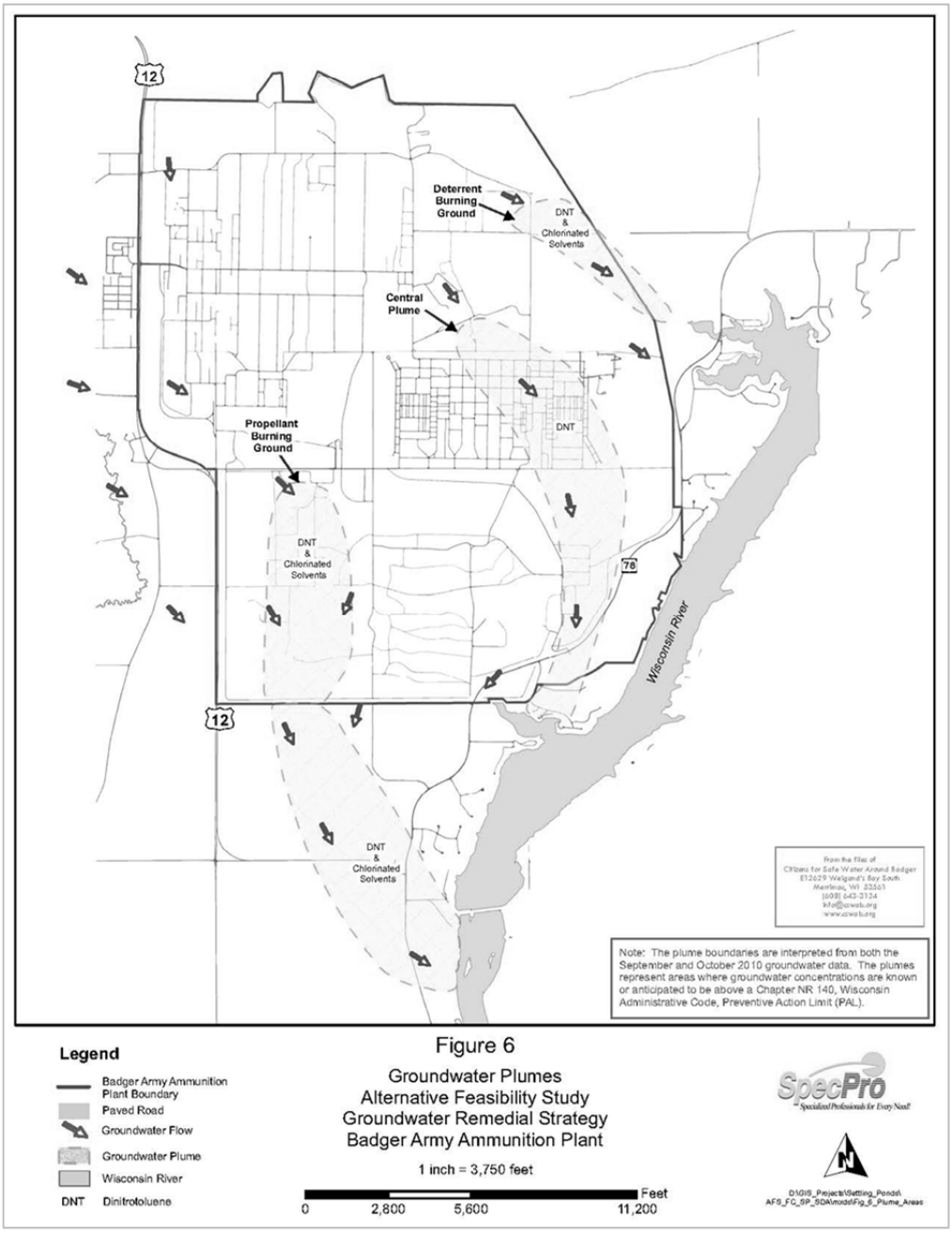
The proposed first phase of the shutdown is focused on the IRM treatment system, which influences only the source area of the Propellant Burning Grounds plume. In additional to the IRM system, groundwater capture along the southern boundary was begun in 1996 with the construction of the Modified Interim Remedial Measure (MIRM). In 2005 and 2006, additional capture wells were installed within the plume; these groundwater extraction wells associated with the MIRM system are still operating.

The WDNR has stated that the approved shutdown of the IRM is consistent with its intent to eventually end all active cleanup of groundwater. However, the WDNR has directed Army to not dismantle the IRM system until the Department gives authorization to do so. The Army is also to make reasonable efforts to ensure that the system does not degrade during the current period of inactivity. For now, the WDNR has not approved permanent shutdown of the IRM system.

As part of its recommendations, CSWAB has asked the WDNR to require the Army to consider the potential impact that irrigation and other high capacity wells have on groundwater flow. This evaluation is necessary to assess any potential risk to the Prairie du Sac's Municipal water supply wells. Additional monitoring should be conducted to the southeast of Badger along both the west and east sides of the Wisconsin River as there are significant voids in groundwater data in these areas.

CSWAB is also recommending that the Army be required to define the total mass of contamination discharging to surface water. This includes contributions of contaminated groundwater to Weigand's Bay, Gruber's Grove Bay, and directly into the Wisconsin River. CSWAB is recommending sampling of soils, surface water, and seeps occurring along both sides of the river at locations both below and at the dam in order to measure the current contribution of contaminants into the waters of the Wisconsin River.

Other recommendations include soil analysis for the full list of DNT isomers, installation of additional monitoring wells to assess transport of contaminants from the Badger site, a more complete identification of the hydrogeologic impacts of high capacity wells in the area, and continued sampling of Prairie du Sac municipal water supply wells.



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Citizens for Safe Water Around Badger (CSWAB) is working to mobilize and empower rural communities near Wisconsin's Badger Army Ammunition Plant and other contaminated U.S. military sites in support of a sustainable future that will protect and restore the integrity of soil, water, air and biological diversity.

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