

Bay State water supply rule on perchlorate leads nation

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Massachusetts became the first state in the nation yesterday to adopt a safe drinking water standard for the chemical perchlorate.

There are several plumes of the toxic chemical flowing in the aquifer under the Massachusetts Military Reservation. The aquifer is the Upper Cape's main source of drinking water.

The new safety standard of 2 parts per billion - equal to a teaspoon in an Olympic-sized swimming pool - regulates the level to which the military must clean up perchlorate-tainted water flowing under the base.

"Massachusetts' new standards ensure that the water is safe to drink, and the monitoring requirement protects water supplies into the future," state Department of Environmental Protection Commissioner Robert Gollidge said yesterday in a news release.

The Defense Department and the Environmental Protection Agency have set clean up goals of 24 parts per billion, but the EPA has yet to set a federal drinking water standard. Even if the agency adopts the weaker standard, pollution clean up in Massachusetts will have to meet the 2 parts per billion regulation.

The new state standard comes as the Army prepares to flip the switch on a \$5 million treatment plant to remove perchlorate from the aquifer.

On a recent afternoon, the wind blew hot air across the dirt and gravel road that cuts a swath through the former artillery impact area at Camp Edwards. Below the road, deep in the earth, plumes of perchlorate contamination flow through the aquifer.

Perchlorate, used in military munitions, explosives and fireworks, can disturb the function of the thyroid gland, which regulates metabolism and development in children.

State environmental officials, who promoted the strictest standard in the nation, argued that 2 parts per billion is necessary to protect children from over exposure.

There are more than a half dozen plumes of perchlorate that are heading toward the base boundary. Perchlorate, a component of rocket propellant, was carried into the aquifer by rain and melting snow as it flowed through tainted soil.

Two new treatment systems at the base were built with the Massachusetts standard in mind, said Ben Gregson of the Army's groundwater studies program. "We want to make sure we get it done."

The clean up systems will treat two plumes with the highest concentration of perchlorate. The

plumes contain as much as 770 parts per billion of the chemical.

One is located in former contractor ranges at the eastern border with Sandwich.

The other plume, the so-called J-2 plume, flows in the direction of the Upper Cape water supply wells on the northeastern portion of Camp Edwards in Sandwich. It also contains high levels of explosive residues.

The new clean up systems include three extraction wells that plunge deep into the earth to collect contaminated water from the aquifer.

The wells pump the tainted water to three above-ground, garage-like stations.

Inside the stations, water surges at a rate of 125-175 gallons per minute through a series of six cylindrical containers that hold resin and carbon, which strips all contaminants from the water so they are no longer detectable.

The treated water then travels back to the ground through a series of underground infiltration beds.

The treatment systems could clean the contamination in 10 to 15 years in their current configuration, Gregson said. But the systems could be expanded if more perchlorate contamination is found as the Department of Environmental Protection and the EPA continue groundwater monitoring at the base.

The clean up is scheduled to begin by the end of the summer.

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