

Idaho aquifer decline could hinder radioactive monitoring

June 29 2015, by Keith Ridler

A continued drop in underground water levels could make it more difficult to monitor the movement of radioactive contamination in an aquifer below an eastern Idaho nuclear facility, scientists say.

Researchers with the U.S. Geological Survey in a 36-page report released Monday said the Eastern Snake River Plain Aquifer level has dropped below two wells and about a dozen others are in danger due to ongoing drought.

"We're starting to have some concern that some of them could go dry," said Geological Survey scientist Roy Bartholomay.

Practices in past decades at the 890-square-mile U.S. Department of Energy facility that opened in 1949 and is now called the Idaho National Laboratory included pumping radioactive waste underground. Workers in the Cold War era also put radioactive waste in ponds that seeped into the ground.

The Department of Energy in an emailed response to inquiries by The Associated Press said the agency in 1972 discontinued pumping radioactive waste underground from the Test Area North and Test Reactor Area, and in 1984 at the Idaho Nuclear Technology and Engineering Center. The agency said it has also discontinued putting [radioactive waste](#) in ponds.

The agency said it completed publicly-reviewed evaluations and, with

the agreement of the Idaho Department of Environmental Quality and the U.S. Environmental Protection Agency, had taken appropriate actions to protect human health and the environment.

"These published evaluations determined that no active treatment is required to remove [radioactive contamination](#) from the aquifer," the agency said in the email sent by spokesman Tim Jackson to the AP. "Natural attenuation and institutional controls were determined to be protective for the radionuclides in the aquifer."

The U.S. Geological Survey monitors 177 wells, most within the boundaries of the federal site but some on the down-gradient side. Water in the aquifer flows from the northeast to the southwest.

The down-gradient wells can tell scientists "when and where the contamination plume starts to move off the INL and into another part of the aquifer," said Geological Survey spokesman Tim Merrick.

Bartholomay said scientists track tritium, strontium-90, cesium-137, plutonium-238 and other radioactive elements. A study that looked at well monitoring information from 1981 to 2012 found that tritium and strontium-90 were decreasing or showing no trends.

Bartholomay said radioactivity appears to be staying in some places and overall the aquifer is improving. It's also believed some of the radioactivity has traveled much deeper in the aquifer.

It takes from 50 to 700 years for water to travel through the aquifer and emerge in springs near Twin Falls. The Geological Survey monitored water in the area until budget cuts in the 2000s, Bartholomay said, and never observed any radioactivity above normal background levels.

He said any radioactivity emanating from the INL would be too diluted

to be of danger by the time it reached the Twin Falls area.

The aquifer, the report notes, has dropped some 20 feet in northern portions. One well in about the center of the aquifer and that Bartholomay said offers an overall picture of the aquifer hit an all-time low in October at 594 feet below the surface. That's down about 12 feet in 20 years.

"We have natural cycles of wet and dry periods," he said.

"Unfortunately, in the last 14 years we haven't really seen that wet period again."

And in the last three years there's been drought.

Should more monitoring wells go dry, decisions will have to be made on whether to spend the money to deepen wells or continue monitoring the [aquifer](#) with less information.

© 2015 The Associated Press. All rights reserved.

Citation: Idaho aquifer decline could hinder radioactive monitoring (2015, June 29) retrieved 6 May 2024 from <https://phys.org/news/2015-06-idaho-aquifer-decline-hinder-radioactive.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--