

# UNCLASSIFIED

## FACSIMILE TRANSMITTAL SHEET

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### U. S. DEPARTMENT OF ENERGY LOS ALAMOS AREA OFFICE

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From: LINDA ANDERMAN

#### Remarks:

We wanted you to be aware that this press release has been issued by the Laboratory.

The information is accurate as we currently know it and we expect to share new information with you as it becomes available.

As related in the press release, the amounts of tritium found in the two aquifers is well below EPA standards for drinking water.

We believe the Albuquerque Journal may run an article on this topic soon.

If you require additional information, please feel free to contact Linda Anderman with DOE/LAAO at 665-5025



**Los Alamos**  
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## public information group news release

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### LABORATORY PERSONNEL FIND TRITIUM IN PERCHED AQUIFERS

LOS ALAMOS, N.M., Dec. 10, 1997 — Personnel from Los Alamos National Laboratory's Environmental Restoration Project have found preliminary indications of low levels of tritium in two perched groundwater zones — saturated areas that are segregated from the main aquifer by impermeable geologic formations — in Los Alamos Canyon.

The tritium — an isotope of hydrogen that can be produced naturally in the atmosphere when cosmic rays strike atoms and molecules — was detected in samples taken as part of an ongoing program to characterize and monitor groundwater resources near the Laboratory.

“The water in which the tritium contamination was detected lies several hundred feet above the groundwater aquifer that Los Alamos uses for its water supply,” said David Broxton of Los Alamos' Geology and Geochemistry Group. “Moreover, the tritium levels we have found are well below safe drinking water standards established by the Environmental Protection Agency. Nevertheless, these findings show that small amounts of tritium from earlier Laboratory operations have percolated downward into the perched zones.”

The Laboratory previously has reported that extremely low levels of tritium have been found in the deep aquifer at several existing test wells.

The perched-water tritium was detected as part of the Environmental Restoration Project's effort to better understand the hydrology and geology of areas near the Laboratory in order to protect groundwater resources. Personnel encountered the perched-water zones while drilling bore hole R-9, located in lower Los Alamos Canyon near the intersection of N.M. 501 and N.M. 4.

Bore hole R-9 is the first of a number of deep wells that will be installed in the Los Alamos area by the ER Project and the Laboratory's Environmental Surveillance Group. When they reach the deep aquifer, which is at an estimated depth of 650 feet below ground at the R-9 location, personnel will take water samples for analysis. Crews have drilled 539 feet so far.

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## TRITIUM IN PERCHED AQUIFERS

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Personnel encountered two intermediate-depth water zones in the course of drilling, and work was halted while Laboratory personnel arranged for the water to be analyzed by an outside laboratory and by Los Alamos scientists.

The upper perched zone is one of the largest intermediate perched-water zones that has been found below the Laboratory. The nearly 45-foot-thick water-bearing zone first was encountered at 180 feet below the surface. The perched zone itself is saturated clay rubble sandwiched between two basalt formations, the lower of which appears to be an impermeable rock layer.

Preliminary analysis by Los Alamos researchers indicates that tritium concentrations in the upper intermediate perched layer were 347 picocuries per liter.

A curie is a measure of radioactivity; pico means one-trillionth of a unit. A standard, self-illuminating exit sign contains about six and a half curies of tritium.

The safe drinking water standard established by the EPA for tritium concentrations is 20,000 picocuries per liter. Earlier studies of alluvial groundwater upslope of Laboratory operations indicate that the background level of tritium is about 50 picocuries per liter.

Drilling crews encountered the second perched zone at 275 feet below ground. This layer is saturated clay rubble about seven feet thick.

Preliminary water-sample analysis by Los Alamos researchers indicate that tritium concentrations in the lower perched layer were 2,639 picocuries per liter. Samples also are being analyzed by an independent laboratory to ensure that the results are not in error.

"The higher concentrations of tritium in the lower perched zone probably reflect older recharge from the canyon floor during a time when Laboratory releases were generally greater than they are today," Broxton said. "Water appears to move slower in this zone, so tritium would move slower through this area as well."

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**TRITIUM IN PERCHLORATE AQUIFERS****PAGE 2:**

Broxton said that it's important to note that none of the water analyses to date indicate that there is any danger to the Los Alamos County or San Ildefonso drinking water supplies. Frequent and continuing tests of the Los Alamos drinking water supply indicate that the water meets all federal and state drinking water standards for chemicals and radioactivity, he said.

Los Alamos National Laboratory is operated by the University of California for the U.S. Department of Energy.