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Environment Department Confirms Radiochemical in Storm Water and Suspended Sediment in Los Alamos Watershed after Flooding

Elements Observed Do Not Pose Immediate Health Threats for Residents

(Santa Fe, N.M.) The New Mexico Environment Department's analysis of sediment and storm water within a Los Alamos National Laboratory watershed last year indicate plutonium²³⁸, plutonium^{239/240}, americium²⁴¹ and strontium⁹⁰ moved through the canyon with storm water during rain storms and other events.

Department investigators measured elevated radionuclides resulting from one large potable water spill as well as several storm events that occurred in Los Alamos/Pueblo Canyon during July and August. Although the flows were recorded leaving LANL property, it was not determined if radionuclides reached the Rio Grande.

A water line break last summer on July 5 at Los Alamos National Laboratory Technical Area 21 (TA 21) triggered the department's automated storm water sampling equipment in Los Alamos Canyon. Approximately 4 million gallons of potable water released over a 26 hour period eroded soil and carried contaminants from a Solid Waste Management Unit into Los Alamos Canyon and beyond laboratory boundaries.

The Department's Department of Energy Oversight Bureau collected five samples of water during the event and radiological analysis of those samples showed a high level of plutonium in the suspended sediment. Concentrations of plutonium^{239/240} (Pu^{239/240}) ranged from 89 to 160 picocuries per gram (pCi/g) and averaged 114 pCi/g. Analysis of five subsequent samples collected in the same location following a storm event on Aug. 9 indicated Pu^{239/240} concentrations in suspended sediments ranging from 10 to 18 pCi/g. Additional stormwater monitoring has shown that the concentrations continue to diminish. For comparison, 12 samples collected at that location during high-flow events spanning 2005 through 2007 showed an average Pu-239/240 concentration in suspended sediments of 1.0 pCi/g.

The department also collected a water sample on July 26 from the Rio Grande at Buckman Landing – the location of the Buckman Direct Diversion – following a rainstorm in northern New Mexico. The bureau collected that sample to reflect what might happen in the future during normal storm water flows in the Rio Grande. Plutonium was not detected in that sample although americium was found at levels that might reflect contributions from atmospheric fallout.

“The department’s scientists will continue to monitor the environment to ensure the health of New Mexico residents is protected,” said New Mexico Environment Department Secretary Ron Curry. “We will continue to require that LANL focus greater efforts on measures to protect the environment, particularly in the watershed, to reduce and prevent the movement of contaminants into the canyon and to protect the drinking water supplies of Northern New Mexico.”

Plutonium-239 is a manmade radioactive element produced since the 1940s as a result of nuclear weapons research. It has a radioactive half-life of 24,000 years and is particularly harmful to lung tissue and internal organs if inhaled.

Chemical analysis of a sample collected further down the Los Alamos Canyon on July 22 did not demonstrate unusual values relative to earlier measurements. Most radionuclides, except plutonium-239/240 and uranium, were not detected and while the measurement in suspended sediments was greater than regional reference levels for sediments they were not outside the range of values previously observed at that location.

The department continues to work with LANL, the City of Santa Fe, Buckman Direct Diversion Board and staff, and local communities to investigate and implement efforts to reduce the flow of contaminants washed with storm water from LANL property. In addition, the department is working with agencies to increase surface water monitoring efforts along the Rio Grande.

An earlier report (<http://www.nmenv.state.nm.us/OOTS/documents/PRBuckmanReport9-26-08revbyDE.pdf>) concluded that contaminant levels from legacy waste are low where construction will occur in the channel at the Buckman Direct Diversion site.

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