

Results of 2009 Sediment Monitoring in the Pajarito Canyon Watershed

Introduction

This report presents analytical data obtained from sediment samples in the Pajarito Canyon watershed in 2009 as part of the Los Alamos National Laboratory (LANL or the Laboratory) Environmental Surveillance Program, following a September 2009 sampling and analysis plan (SAP) (LANL 2009, 107340). The New Mexico Environment Department (NMED) issued an Approval with Modifications for the SAP (NMED 2009, 108123) that included the requirement to provide these results in a report to NMED by March 31, 2010. This report satisfies that requirement. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED in accordance with U.S. Department of Energy policy.

Samples Collected

The SAP indicated that seven active stream channel samples will be collected in 2009 in the Pajarito Canyon watershed, and up to an additional eight fine-grained sediment samples were identified as “contingency” samples, to be collected in the event large floods occurred (LANL 2009, 107340). No large floods occurred in 2009 in this watershed; therefore, the fine-grained contingency samples were not collected. In addition, 2009 was the first year since the E250 stream gage was installed in Pajarito Canyon above NM 4 that no flow was recorded at E250. Therefore, the two active stream channel locations planned below E250 were not sampled in 2009 because no change occurred since sampling was conducted in 2008.

The NMED’s approval with modifications letter for the SAP specified that semivolatile organic compounds, dioxins, and furans should be added to the analytical suite for each sample (NMED 2009, 108123). However, the samples for 2009 had already been collected and submitted before the Laboratory received NMED’s letter on November 17, 2009; hence, these analyses were not done. These analyses will be conducted in 2010, as appropriate.

Results

Analytical results for the five sediment samples from the Pajarito Canyon watershed are included electronically as Attachment 1 (on CD). Tables in Attachment 2 (on CD) summarize the frequencies of detected results and identify sampling results above the sediment background values (BVs) for inorganic chemicals and radionuclides or detected results for organic chemicals. Attachment 3 (on CD) presents particle-size data obtained from these samples. These results will also be presented in the 2009 Environmental Surveillance Report, scheduled to be published in September 2010.

Five inorganic chemicals (antimony, chromium, copper, silver, and zinc) were detected above the BVs in a fine-grained, silt-rich sample collected from the lower retention pond in drainage G-6 at Material Disposal Area (MDA) G, and two of these chemicals (antimony and zinc) were also detected above their BVs in a coarse-grained sample from drainage G-7. Two organic chemicals (Aroclor-1254 and Aroclor-1260) were detected in the sample from the lower retention pond in drainage G-6. Four radionuclides (americium-241, plutonium-238, plutonium-239/240, and tritium) were detected above the BVs in two samples each, including drainage G-4, the lower retention pond in drainage G-6, and drainage G-7. These results are similar to previous years (e.g., LANL 2009, 108621).

REFERENCES

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

LANL (Los Alamos National Laboratory), September 2009. "Sampling and Analysis Plan for Sediment Monitoring in the Pajarito Canyon Watershed," Los Alamos National Laboratory document LA-UR-09-5858, Los Alamos, New Mexico. (LANL 2009, 107340)

LANL (Los Alamos National Laboratory), September 2009. "Environmental Surveillance at Los Alamos during 2008," Los Alamos National Laboratory report LA-14407-ENV, Los Alamos, New Mexico. (LANL 2009, 108621)

NMED (New Mexico Environment Department), November 13, 2009. "Notice of Approval with Modifications; Sampling and Analysis Plan for Sediment Monitoring in the Pajarito Canyon Watershed," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2009, 108123)