U.S. DEPARTMENT of ENERGY

Sampling and Monitoring

Newport News Nuclear BWXT-Los Alamos LLC, (N3B) is the legacy cleanup contractor for the U.S. Department of Energy Office of Environmental Management Los Alamos Field Office (EM-LA).

The N3B Sampling and Monitoring Program is a systematic data-collection effort to evaluate, monitor and address environmental contamination at Los Alamos National Laboratory (LANL).

Background

Over 7,000 water, soil, sediment and vapor samples are collected each year. Since 2018, N3B has continued LANL's monitoring and sampling program that began decades before. The program has expanded significantly over the years, in part to document cleanup progress.

Sampling along the Rio Grande

Types of Sampling

N3B collects water, soil, sediment, and vapor samples from monitoring locations on and off LANL property, including:

- Groundwater monitoring wells at LANL, Pueblo de San Ildefonso, and Los Alamos and Santa Fe counties. Wells are most commonly sampled on a quarterly, semi-annual or annual schedule. The specific timing is dictated by local, state or federal environmental regulatory agencies.
- Surface water and stormwater sites, including sections of the Rio Grande and other waterways.
- Vapor monitoring at LANL Cold War era waste disposal sites helps identify Volatile Organic Compounds (VOCs) and tritium, evaluating potential threats to groundwater.
- Soil and sediment sampling in canyons, watersheds, Solid Waste Management Units and Areas of Concern.
- Under routine sampling, Los Alamos County water supply wells are monitored for metals, radionuclides, VOCs, general inorganics, various analytes and high explosives.

Contaminant migration control

Vapor monitoring at Material Disposal Area L

Data Management and Transparency

- Data validation by independent, government-certified laboratories confirm accuracy and completeness for radiological and chemical analyses.
- Analytical results are submitted to the New Mexico Environment Department and Los Alamos County.
- Analytical methods support detection of low-activity radionuclides and inform cleanup decisions.

Impact and Results

- Extensive sampling and monitoring informs cleanup activities and confirms corrective actions are effective.
- The program verifies the effectiveness of interim measures, such as the pump-and-treat system for the hexavalent chromium plume, to protect human health and the environment.

The N3B sampling and monitoring program is a vital part of LANL's legacy cleanup, involving extensive field sampling, advanced data validation, regulatory adherence and transparent public reporting to address historical contamination. The sampling and monitoring process identifies risk and triggers corrective action when appropriate.

FROM DETECTION TO CORRECTIVE ACTION

Corrective Action Example: Chaquehui Canyon

Enhanced controls were implemented at Chaquehui Canyon, including installation of coir logs after exceedances for copper and Polychlorinated Biphenyls (PCBs) were detected. The controls were confirmed effective.

Corrective Action Example: Ancho Canyon

An earthen berm and rock spillways were installed as enhanced controls after exceedances of copper and PCBs were detected at Ancho Canyon. Adjustments will continue until compliance is confirmed.

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