# New Mexico Environment Department



## Indian Affairs Interim Committee
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# LANL's Hexavalent Chromium

From 1956 to 1972, LANL periodically flushed hexavalent chromium-contaminated water into Sandia Canyon and Mortandad Canyon.



# LANL's Pump-and-Treat Operation

- The Department's Hazardous Waste Bureau (HWB) regulates LANL's extraction and treatment under the NM Hazardous Waste Act and its rules
  - Executed through the Compliance Order on Consent
- The Department's Ground Water Quality Bureau (GWQB) regulates the injections of treated water under the NM Water Quality Act and its rules
  - LANL's selected remediation strategy to inject treated water requires a GWQB discharge permit

# LANL's Theory of Containment

- LANL proposed a pump-and-treat system
  - LANL said system would keep hexavalent chromium contamination levels within facility property
  - Prevent spread of the plume through a "hydraulic barrier"
- For multiple years, the Ground Water Quality Bureau expressed concern that the ground water samples showed increasing contaminant levels and geographic spread of the plume
- LANL pushed back and asserted that its system was containing the hexavalent chromium plume
- Sampling data showed otherwise

# Resumption of Injections Urged by LANL in between the 2022 and 2026 Cease Injection Directives

Beginning in 2022, the Ground Water Quality Bureau ceased authorization for injection based on concerning data trends

LANL repeatedly argued for immediate resumption of injections after the 2022 Ground Water Quality Bureau cease injection directive

- The Ground Water Quality Bureau conditioned the resumption of injections on these requirements:
  - LANL shall evaluate and propose additional, alternative injection sites
    - To ensure that injection does not increase migration of hexavalent chromium
  - LANL shall use data from Monitoring Well SIMR-3 to evaluate if injections should continue in the southern boundary
  - LANL shall install Monitoring Well R-80 to determine if injection should be allowed in the east

# LANL Pushed Back on System Modifications




- The Ground Water Quality Bureau allowed injections again in 2024 provided that LANL agree that:
  - Monitoring Well SIMR-3 (on Pueblo de San Ildefonso lands) would inform future actions
  - An Independent Review Team would study options and its recommendations would inform the path forward

# Independent Technical Review

- New Mexico Environment Department and LANL agreed to have the facts reviewed by an Independent Technical Review Team
  - Jointly developed the scope of analysis
  - Purpose: resolve differences of opinion between the New Mexico Environment Department and LANL on:
    - Hexavalent chromium migration
    - Containment of the hexavalent chromium plume
    - Remediation of the hexavalent chromium contamination in groundwater
  - Result: recommendations aligned with the path forward required by New Mexico Environment Department

# Failure to Contain Chromium Plume

- Proven hexavalent chromium contamination in groundwater samples from Pueblo de San Ildefonso lands
  - Monitoring Well SIMR-3 is in the northern part of Pueblo de San Ildefonso (just south of LANL)
  - SIMR-3 samples showed the hexavalent chromium plume had spread beyond LANL and into Pueblo de San Ildefonso
    - Screening level sampling for SIMR-3:
      - 72.9 ppb October 2025
      - 90 ppb March 2026
    - Hexavalent chromium concentrations during initial regulatory sampling for SIMR-3:
      - Lower screen: 98.6 ppb in May 2026
      - Upper screen: 40.1 ppb in June 2026

# LANL Violated Regulatory Requirements




Monitoring Well SIMR-3 samples prove the plume is not contained within LANL property

Violated primary goal of Interim Measures: Exceeded NM 50-ppb contamination standards outside the LANL boundary

(SIMR-3 Samples also violate Pueblo de San Ildefonso water quality standards)

# October 2025 – Present: SIMR-3 Results After the Independent Technical Review Team Report

Knowledge of contaminated water from monitoring well SIMR-3 on Pueblo de San Ildefonso land:

- Came after the Independent Review Team Report
  - Supported the Department's proposed adjustment of operations based on SIMR-3 results
- Highlighted the necessity for immediate action and adaptive management to improve remediation

# Regulatory Response – Ground Water Quality Bureau

- In response to contamination levels at SIMR-3 showing the hexavalent chromium plume had spread beyond LANL, the Ground Water Quality Bureau required LANL to stop injecting treated extractions back into ground water
  - Contamination trends highlighted serious data gaps, the failure of the hydraulic barrier to contain the hexavalent chromium plume, and the questionable practice of injections into known areas of contamination
- On February 11, 2026, the Ground Water Quality Bureau served LANL with an Administrative Compliance Order that listed violations and penalties
  - Violation 1. Failure to meet regulatory water quality standards in NMAC 20.6.2.3103
  - Violation 2. Failure to meet the requirements of Discharge Permit 1835, Permit Condition 19

# Regulatory Response – Hazardous Waste Bureau

- On February 11, 2026, the Hazardous Waste Bureau served LANL with an Administrative Compliance Order that listed regulatory violations, penalties, and correction action plan requirements
  - Violation 1. Failure to submit revised interim measures work plan
  - Violation 2. Failure to implement corrective measures beyond the facility property boundary where necessary
- Hazardous Waste Bureau's Corrective Action Plan for LANL is in the Administrative Compliance Order
- The Corrective Action Plan aligns with recommendations by the Independent Review Team
  - Supports follow through with the actions Hazardous Waste Bureau has been requiring, with push back from LANL, since 2022

# LANL Hesitation to Implement Recommendations

We are still waiting for LANL to make meaningful efforts to implement Independent Review Team recommendations from its December 2024 Report



# LANL Halted Progress on Hexavalent Chromium Plume Workshops

- LANL canceled Hexavalent Chromium Plume Workshops after NMED served Administrative Compliance Orders in February 2026
- NMED urged the resumption of collaborative workshops
  - The following participants have met since May 2026 to work towards implementation of the Independent Review Team recommendations and conclusions:
    - Pueblo de San Ildefonso
    - New Mexico Indian Affairs Department
    - New Mexico Office of the State Engineer
    - New Mexico Environment Department
    - Los Alamos County
  - LANL rejected the invitation to join the resumed workshops

# Questions?

