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National Environmental Policy Act Process

- The National Environmental Policy Act (NEPA) process begins with a proposed federal action. If the agency is unsure if there will be a significant environmental effect, the determination is made to prepare an Environmental Assessment (EA).

- An EA is a concise public document for which a federal agency is responsible. It provides an evaluation/analysis that can be used to determine if an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI) is appropriate. The EA and FONSI support DOE compliance when no EIS is required, includes brief discussions of the purpose and need for the proposal, of alternatives evaluated, and the environmental impacts of the proposed action and alternatives. The EA process is outlined below.

  1. Prepare a Draft EA: this pre-decisional document evaluated the purpose and need for a proposed action, the alternatives evaluated (including a "No Action Alternative"), the potential environmental impacts, and a list of stakeholders and agencies consulted during the preparation of the Draft EA.

  2. Comment Period: The public and stakeholders have a recommended 14-30 days following the release of the Draft EA to comment on the documents. Comments are received through mail, e-mail, fax, and phone. These comments are compiled and considered during the preparation of the final EA.

  3. Are there significant potential effects? DOE determines if there are significant potential effects based on the Draft EA and stakeholder and public comments.

The National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code [U.S.C.] 4321 et seq.), requires Federal agencies to evaluate the environmental consequences associated with a proposed action before making a decision. DOE Environmental Management (EM) follows the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500-1508) and DOE's NEPA implementing procedures (10 CFR 1021). In accordance with these requirements and implementing procedures, this environmental assessment (EA) provides DOE with sufficient evidence and analysis to determine whether to issue a finding of no significant impact or to prepare an environmental impact statement.

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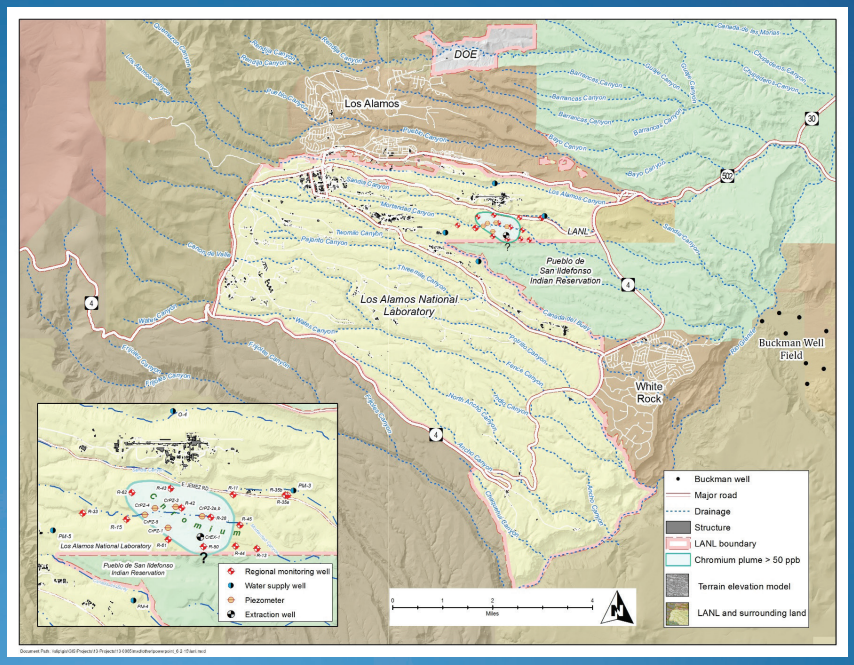
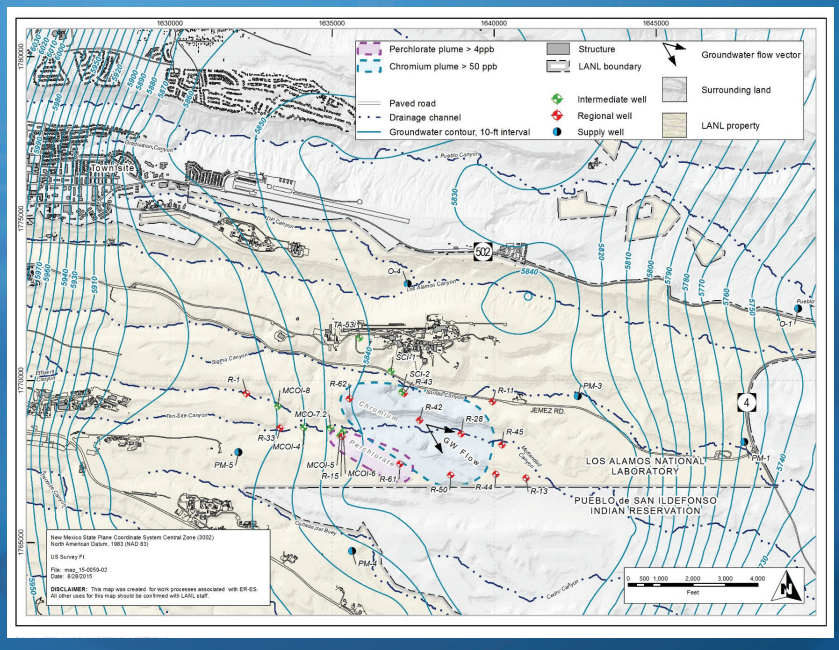
Why Is There a Need for the Chromium Project?

- There is a hexavalent chromium plume in the regional aquifer beneath Sandia Canyon and Mortandad Canyon.
- The plume's size is approximately 1 mile x ½ mile x <100 feet thick.
- The aquifer is 900–1,000 feet below canyon bottom.
- Plume edge is approximately ½ mile from the closest drinking water well.
- Evidence of plume expansion near the Laboratory boundary.
- The near-term goal of the Chromium Project is to prevent migration of the chromium plume while the Laboratory assesses the best possible cleanup method.
- The Laboratory is taking action as part of its commitment to protect groundwater and the health and safety of New Mexico residents and the environment.



Regional setting of chromium plume.



Location of chromium plume.

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A History of the Chromium Issue

- From 1956 to 1972, a non-nuclear power plant at Los Alamos National Laboratory periodically flushed water out of its cooling towers into Sandia Canyon. At that time, chromium was commonly used in the industry as a corrosion inhibitor in cooling tower systems.

- The water with chromium flowed down Sandia Canyon as surface water, penetrated the underlying rock layers, and ultimately infiltrated the regional aquifer beneath Sandia Canyon and Mortandad Canyon, the present location of the plume.

- The Laboratory discovered chromium in the regional aquifer during the installation of a groundwater monitoring well in late 2005 and has conducted detailed scientific characterization of the nature and extent of the plume since then. This detailed characterization provides the foundation for development of a sound remediation strategy.

View of Mortandad Canyon from a mesa top near extraction well CrEx-1.

Drilling of a corehole in Mortandad Canyon.

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Plume-Control Interim Measure

- The Laboratory has identified the need to conduct an interim measure to hydraulically control the downgradient migration of the chromium plume. The interim measure is needed to address the increasing concentration of chromium at the Laboratory boundary.

- The interim measure will include continuous pumping at extraction well CrEx-1, possible installation of a second extraction well, and installation of up to six injection wells for both plume control and management of treated groundwater.

- The proposed plume-control interim measure will take place over the next several years until a remedy has been identified and implemented.

- Our goal is to achieve and maintain less than 50 parts per billion of chromium contamination at the plume edge within the Laboratory boundary.

- Treated water will either be land applied or returned to the aquifer through injection wells.

Drilling of a corehole in Mortandad Canyon.

Column experiments.

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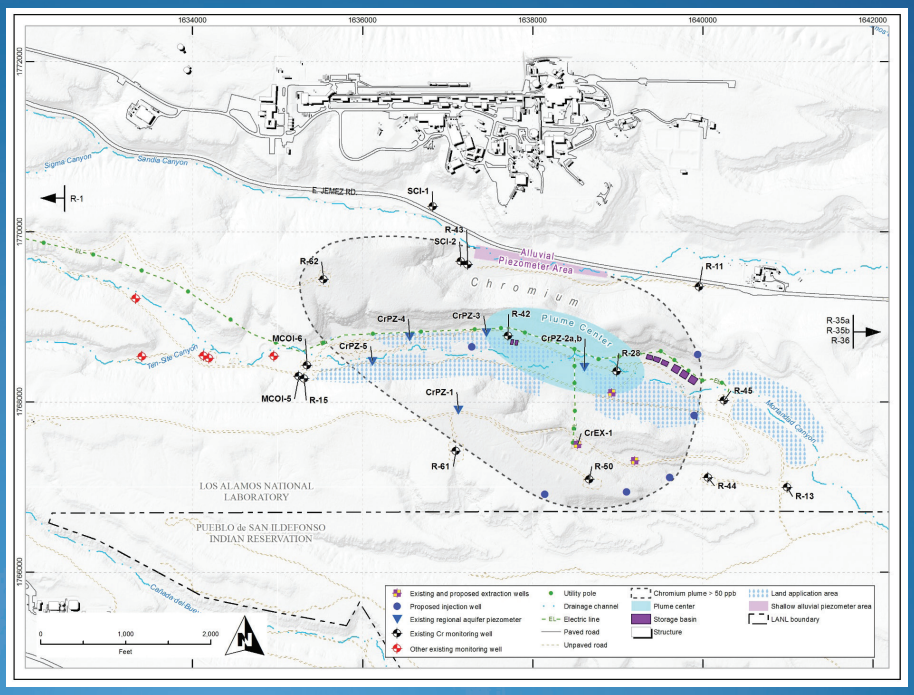
Plume-Center Characterization

- In addition to the interim measure, the Laboratory is proposing chromium plume-center characterization. Information obtained from the additional characterization will be used in identifying remediation alternatives for chromium contamination in groundwater.



Plume footprint and existing and generalized proposed locations of project infrastructure.

- Through the plume-center characterization activities, the Laboratory will continue exploring additional technologies for application toward a final remediation approach. This includes installation of a pilot extraction well near the center of the plume to test feasibility and operational efficiency for source removal.

- In addition, the Laboratory will conduct benchscale and field-scale studies to identify additional technologies that may be applied to remediation, actively engage with external subject matter experts on the studies, and pursue other potential remedies.

- A two-year test will involve pumping of the extraction well and monitoring wells to evaluate trends.

- Contaminated groundwater will be treated at the surface and largely returned to the aquifer via injection wells.

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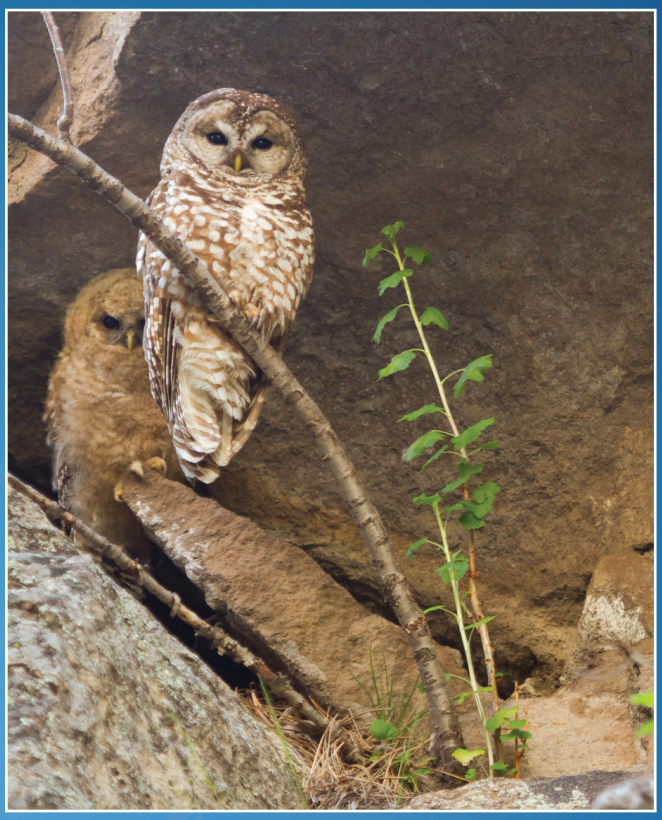
Potential Impacts Assessed

- **Geology and soils:** There are minimal effects to soil profiles from grading as part of the proposed action.
- **Groundwater (quality):** Water injected into the aquifer or land applied would meet permit standards; no increase in the flow of contaminants into groundwater as part of the proposed action.
- **Groundwater (drawdown):** Temporary increases in drawdown potentially caused by pumping for this project is unlikely to affect the economic or physical characteristics of Los Alamos County wells as part of the proposed action.
- **Surface water:** Stormwater runoff controlled through best management practices; minimal effects on surface water as part of the proposed action.
- **Biological Resources:** Potential effects to the nearby Mexican spotted owl population will be avoided as part of the proposed action through compliance with the Habitat Management Plan for LANL, which restricts some project activities during certain times of the year.



Mortandad Canyon is home to the federally protected Mexican spotted owl. Laboratory experts collaborate to ensure that work does not impact the owls' habitat during restricted times under the Laboratory's Habitat Management Plan.

Chromium project area in Mortandad Canyon.

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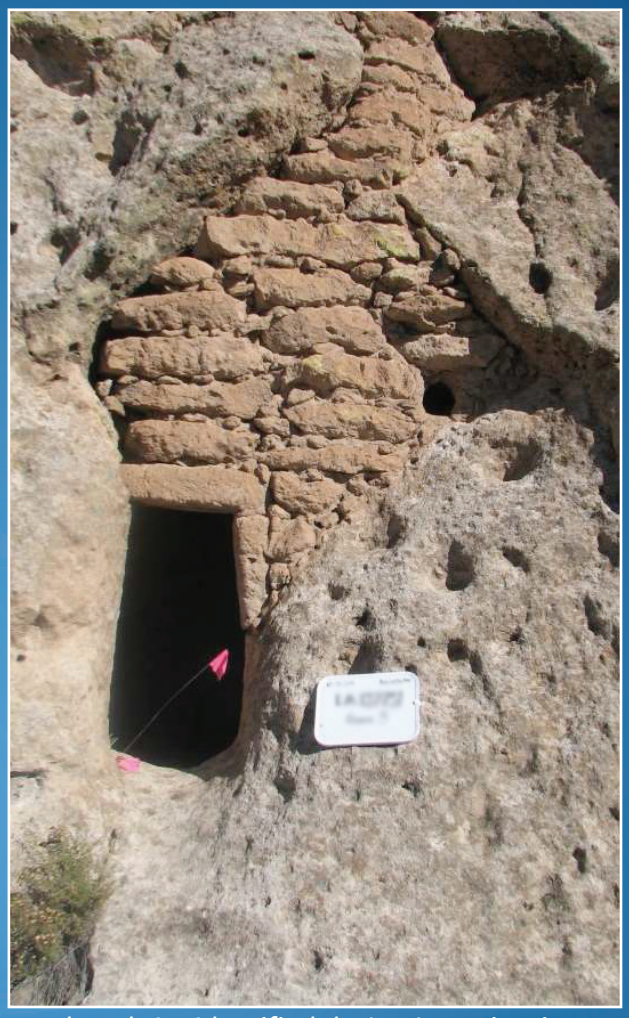
Potential Impacts Assessed

- **Visual resources:** No substantial dominant visual change, no substantial change in visibility, and no conflict with visual standards as part of the proposed action.

- **Traffic and transportation:** Negligible effects from small amounts of additional traffic as part of the proposed action.

- **Human health:** The project would reduce risks to human health and welfare in the region by removing contaminants from the environment and containing the migration of groundwater contamination as part of the proposed action.

- **Cultural resources:** The DOE has undertaken cultural resource investigations to develop the information needed to assess the potential impacts of the Chromium Project on area cultural resources. Protective measure will be undertaken to ensure potential impacts are avoided or minimized. These measures include:
  - stormwater runoff and erosion controls
  - archaeological monitoring of ground-disturbing activities
  - continued communication with the Pueblo de San Ildefonso, aligned with the established protocols between the Pueblo and DOE



A cultural site identified during investigations.

- **Environmental Justice:** The proposed action would reduce risks to human health and welfare in the region by removing contaminants from the environment and containing the migration of groundwater contamination. There are no disproportionate impacts to low income and minority populations anticipated from the proposed action.

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Questions?

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