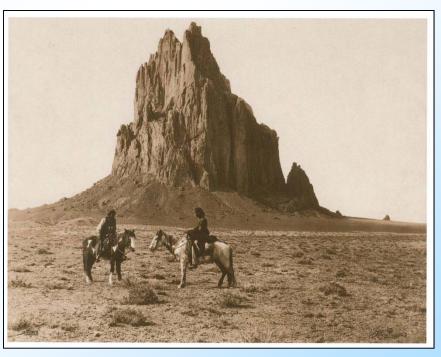




Legacy Management

Goal of Community Meeting Is Communication

- Request your recommendations and suggestions
- Listen to your questions
- Understand your concerns
- Provide information





Presentation Outline

- Milling history
- Cleanup history
- Protection of human health and the environment
- Groundwater remediation
- Sources for more information





U.S. Department of Energy Office of Legacy Management

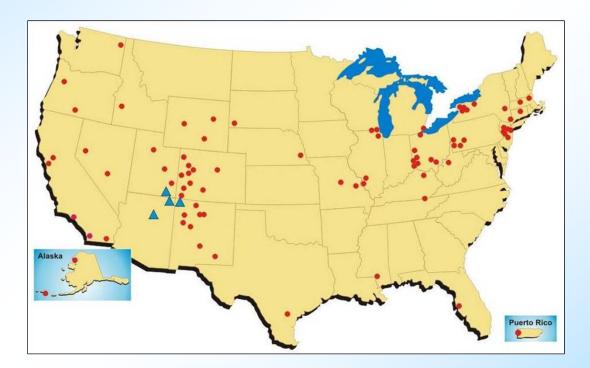
Mission

To fulfill the Department's post-closure responsibilities and ensure the future protection of human health and the environment.

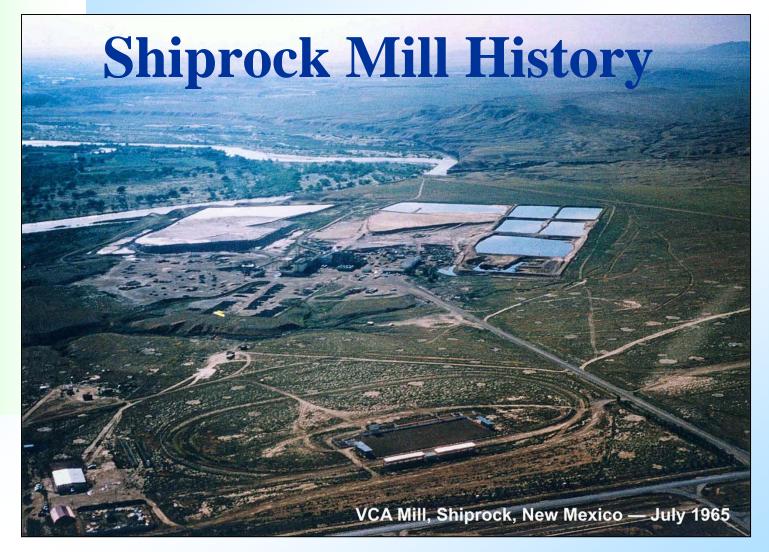


About the Office of Legacy Management

Manages post-closure responsibilities and ensures protection of human health and the environment at more than 80 sites, including 4 on the Navajo Nation









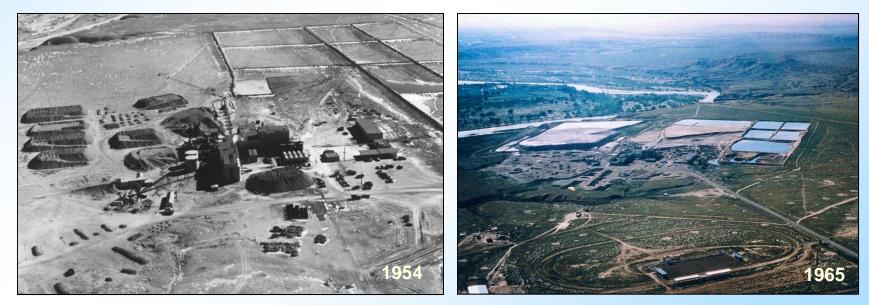
Shiprock Mill History

- Processed uranium and vanadium ores
- Leased from the Navajo Nation through 1973
- Ore was brought in from many local mines
- Processed about 1.5 million tons of ore



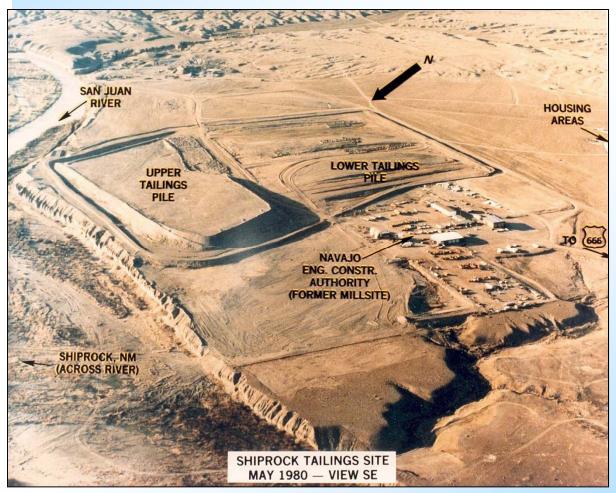
Shiprock Mill History (continued)

- 1954: Kerr-McGee Oil Industries, Inc. built Shiprock mill (also known as Navajo mill); operated until 1963
- 1963: Mill sold to Vanadium Corporation of America (VCA); operated until August 1967
- 1967: VCA merged with Foote Mineral Company, which continued milling operations until 1968 when it closed





Site Cleanup History





Legacy Management

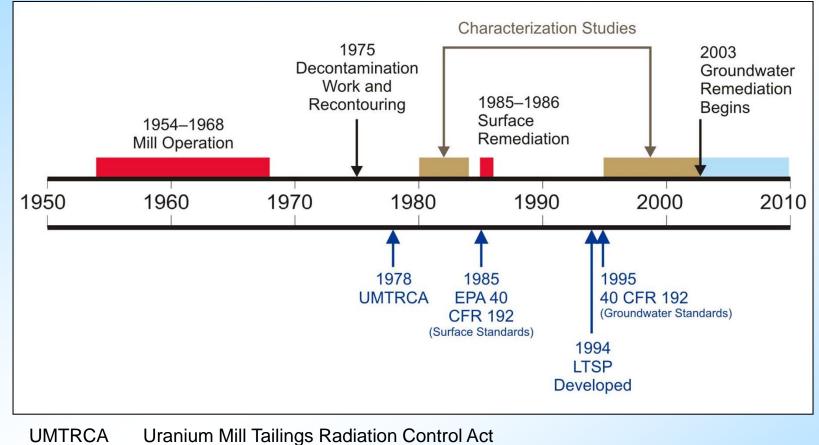
Site Cleanup History





1987: Completed Disposal Cell

Site Cleanup History Summary



	•
EPA	U.S. Environmental Protection Agency

- LTSP Long-Term Surveillance Plan
- CFR Code of Federal Regulations



Protection of Human Health and the Environment





Legacy Management

Protection

Risk reduction for people, livestock, and wildlife

- **2000**
 - Fencing on floodplain
 - Many Devils Wash and Bob Lee Wash
 - Construction of surrounding fences limiting access
 - Placement of protective rock fill
- 2000 to present: Grazing agreement put in place on floodplain
- 2004: Engineered structures to capture seep drainage on floodplain

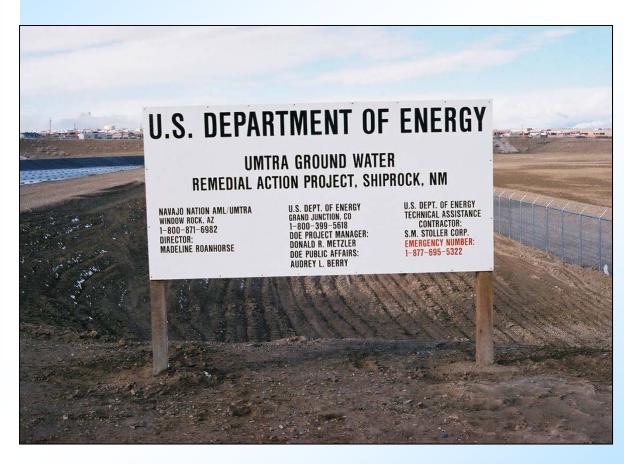


Protection (continued)

- Recent, ongoing, and proposed
 - Reduce potential for people or animals to have contact with contaminated water
 - Ongoing extraction of contaminated groundwater
 - Continued lowering of the groundwater table, making contact with groundwater and seeps less likely
 - Drying-up seeps along Bob Lee Wash, western edge of terrace, and the floodplain
 - Monitoring and sampling wells show less water
 - Coordinating with Navajo Nation Water Administration Code to limit drilling of wells in site vicinity
 - Installed more wells along the floodplain near river's edge to evaluate contaminant movement and removal



Groundwater Remediation





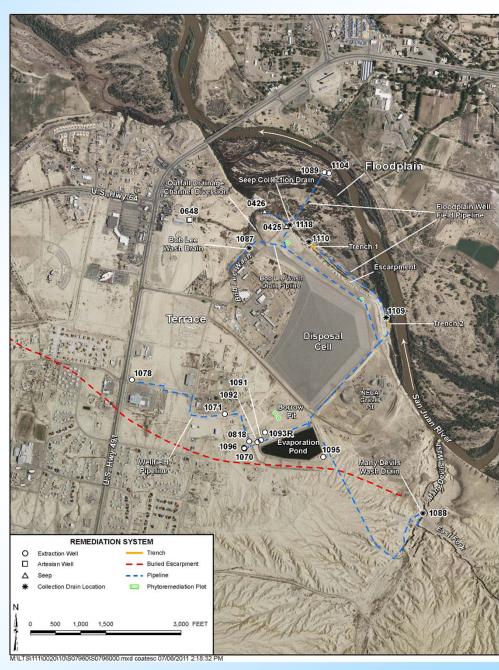
Groundwater Remediation

1999: DOE and the Navajo Nation entered into a Cooperative Agreement (emphasizing groundwater remediation)

- Ensures a cooperative decision-making process
- Commits a sharing of the direction, control, and performance of the project between DOE and the Navajo Nation
- Defines the work to be performed, schedule, and budget for activities on Navajo Nation land
- Provides funding for five Navajo Nation employees

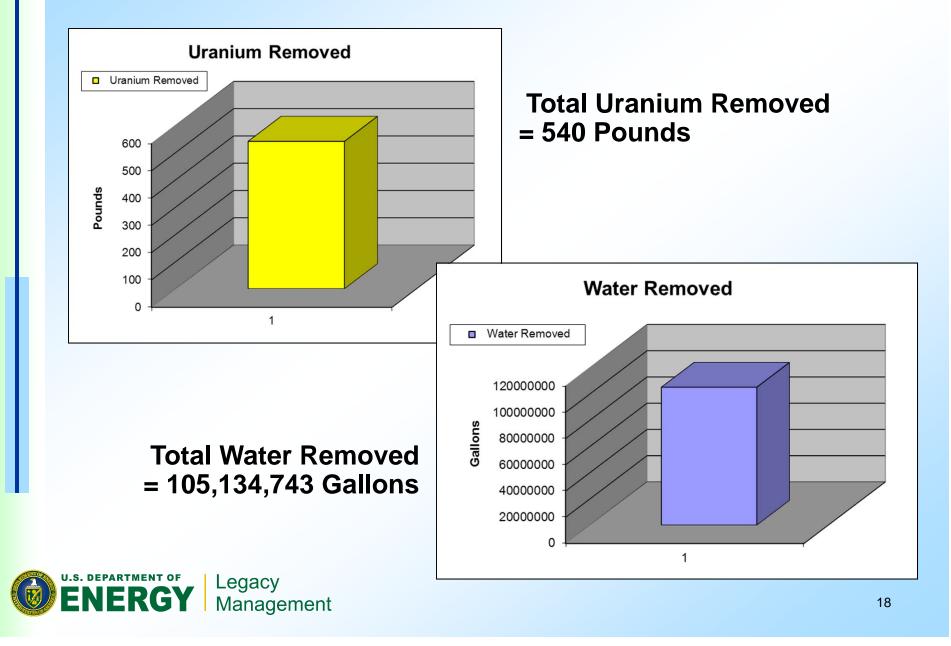


Shiprock Groundwater Remediation System





Estimated Uranium Mass Removed Since 2003



Status of Remediation

- Monitoring continues for manganese, nitrate, selenium, sulfate, uranium, ammonium, and strontium
- Collection drains installed at base of escarpment (Trench 1 and Trench 2) improving floodplain remediation
- Terrace groundwater levels are being reduced, and seeps have dried up
- Contaminant reduction is being achieved





More Information

- Shiprock documents are available to the public at both the Navajo Nation Shiprock Chapter House and the Diné College library
- Navajo Nation UMTRA/AML office
- Posted on the LM webpage http://www.lm.doe.gov/shiprock/Sites.aspx
- Examples of reports and data that are available
 - Early site characterization and risk assessment reports
 - Monitoring results (data validation reports)
 - Remediation status (annual performance reports)
 - All site data available for viewing and access (Geospatial Environmental Mapping System)
 - Regularly updated fact sheet



Points of Contact

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