



U.S. DEPARTMENT OF
ENERGY

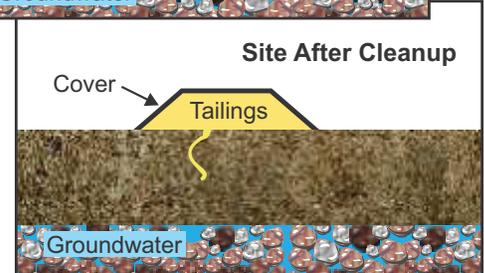
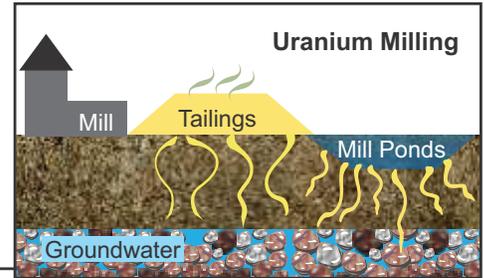
Legacy
Management

Shiprock, New Mexico, Disposal Site

COMMUNITY INFORMATION

Shiprock Site Background

- 1951 Uranium found on Navajo Nation lands near Shiprock.
- 1952 Uranium-ore buying station is established in Shiprock.
- 1954 Mill is built in Shiprock.
- 1954–1968 Various companies operate the mill, processing uranium and vanadium ore. During milling operations, chemicals from mill tailings piles and ponds drain into the soil and groundwater.
- 1968–1973 Mill buildings and equipment are torn down.
- 1975–1980 Initial cleanup of materials from former milling operations.
- 1986 Mill tailings are put in a disposal cell and a cover is constructed over the materials. The disposal cell cover is a barrier that prevents radon gas from escaping and reduces the amount of water drainage through the cell.
- 1991–Now U.S. Department of Energy (DOE) performs long-term care at the Shiprock site.



Drawings not to scale.

DOE Activities at the Shiprock Site

Site Inspections

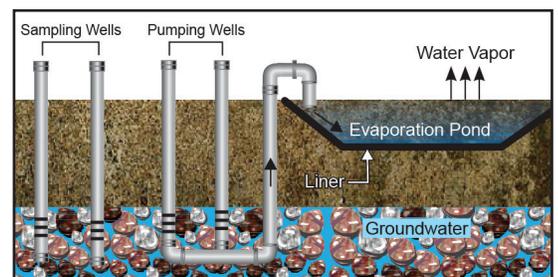
DOE inspects the site every year. Inspectors look at the disposal cell to make sure it is protective of human health. During the inspection, items that need maintenance are identified and repaired. DOE also works with the Navajo Nation to inspect the groundwater cleanup system and to watch the site between annual inspections.

Groundwater Cleanup

Groundwater is pumped into a lined pond from multiple wells that surround the disposal cell. A well is a pipe inserted through the ground and into the groundwater. A section at the bottom of the pipe, called the “screen”, has small holes. The groundwater enters the well through the screen. Samples are taken twice a year to measure chemical levels in the groundwater. Chemicals include ammonium, manganese, nitrate, selenium, strontium, sulfate, and uranium. Over time, water sampling results have shown that removing the groundwater by pumping it into the pond and allowing it to evaporate causes the chemical levels in the groundwater to decrease.



Shiprock, New Mexico, Disposal Site Pond



Drawing not to scale.

Phytoremediation

Phytoremediation is the use of plants to prevent the movement of contaminants. Black greasewood and fourwing saltbush were planted near the Shiprock disposal cell to test if they can help control the movement of contaminated groundwater; they were planted and irrigated with the help of Diné College students. The plants can sustain themselves without irrigation if their roots are able to grow down to the groundwater. If the tests are successful, it would mean that plants can help prevent contaminated groundwater from moving away from the cell and into the floodplain near the San Juan River.



Diné College Students Sampling Fourwing Saltbush Plants at the Phytoremediation Test Plots Next to the Shiprock Disposal Site

Contacts

DOE is responsible for caring for the disposal cell and cleaning up groundwater at the Shiprock site to protect human health and the environment. The Navajo Nation provides oversight for DOE activities.

If you have questions about the site, please visit DOE's website at <http://www.lm.doe.gov/shiprock/Sites.aspx> or contact:

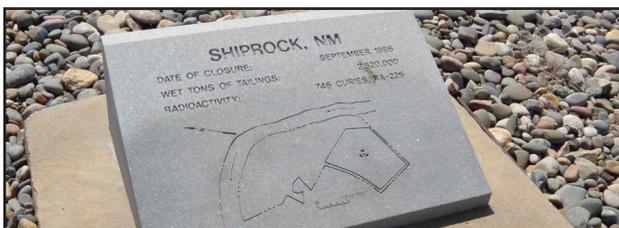
Mark Kautsky, Site Manager
 U.S. Department of Energy
 Office of Legacy Management
 Phone: (970) 248-6018
 Email: mark.kautsky@lm.doe.gov

Madeline Roanhorse
 Program Manager
 Navajo AML/UMTRA Department
 Phone: (928) 871-6982
 Email: mroanhorse@frontiernet.net

Other Navajo Nation, Uranium-Related Programs

This table includes programs and people you may contact to learn more about the services available to you if you have questions about uranium exposure and your health.

Agency and Contact Information	Program
<p>Navajo Area Indian Health Service Contact: Dolores Gruber Phone: (505) 368-7402 or 1-800-549-5644, ext. 7402 Email: dolores.gruber@ihs.gov</p>	<p>Community Uranium Exposure Journey to Healing Program: This program provides health monitoring, health promotion, and health education to people across the Navajo Nation. It focuses on people exposed to uranium by living in the community rather than by working at uranium mines or mills.</p>
<p>Navajo Area Indian Health Service Contact: Johnna Rogers Phone: (505) 368-7397 or 1-800-549-5644, ext. 7397 Email: johnna.rogers@ihs.gov</p>	<p>Navajo Birth Cohort Study: The primary goal of this study is to determine whether exposure to uranium waste affects birth outcomes and childhood development on the Navajo Nation.</p>
<p>Navajo Area Indian Health Service</p>	
<p>Contact: Rena Gould Phone: (505) 368-7054 Email: rena.gould@ihs.gov</p>	<p>Contact: Dr. Linda Knedler Phone: (505) 368-7392 Email: lindaknedler@ihs.gov</p> <p>Radiation Exposure Screening and Education Program (RESEP): This program offers assistance to miners and millers, including applying for compensation and healthcare services.</p>



Shiprock, New Mexico, Disposal Site Marker



Shiprock, New Mexico, Disposal Site Cell