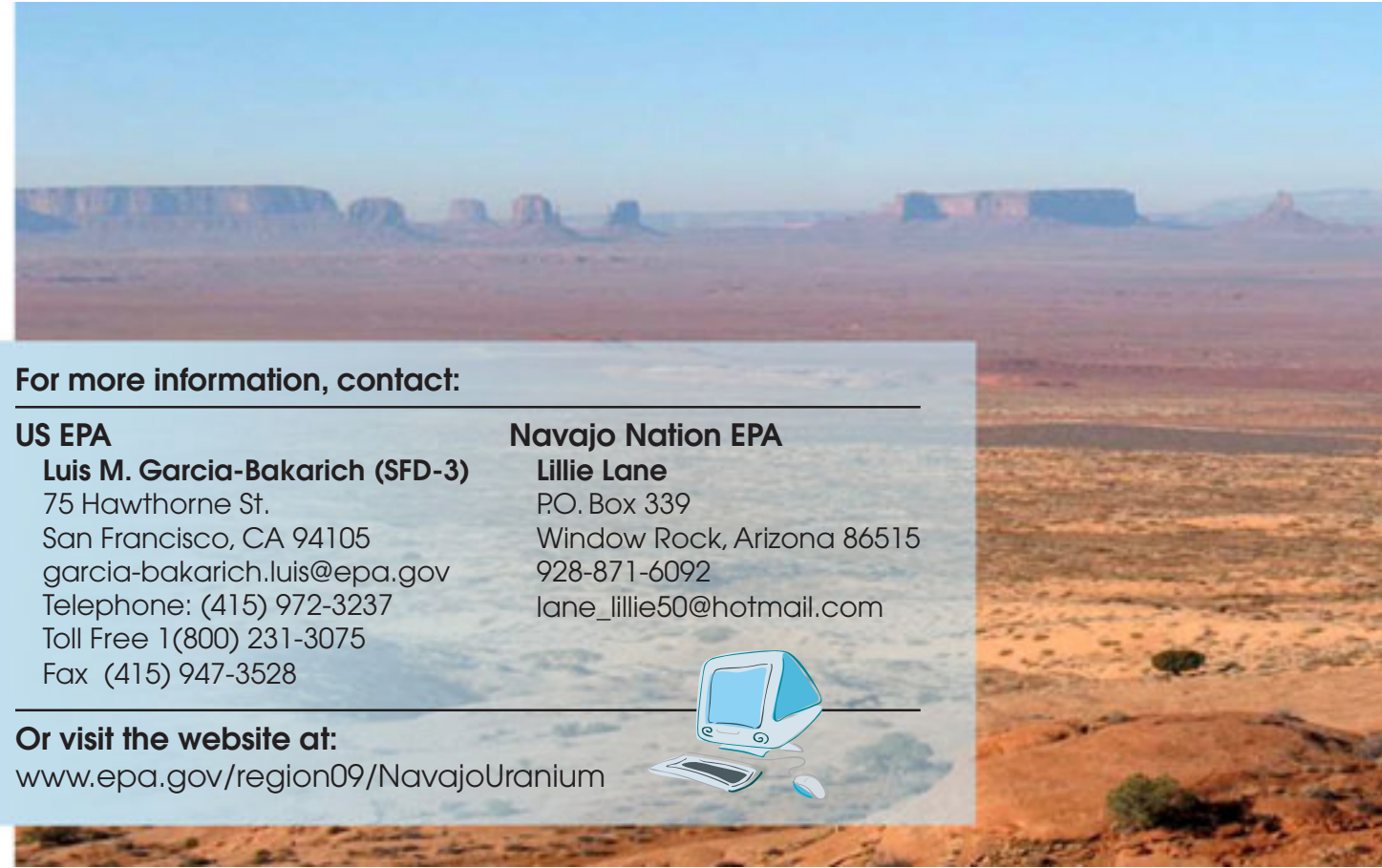




# Health and Environmental Impacts of Uranium Contamination in the Navajo Nation

## EPA Progress in Implementing a 5-Year Cleanup Plan



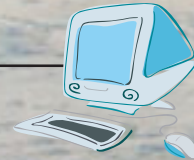
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U.S. Environmental Protection Agency, Department of Energy, Bureau of Indian Affairs, Indian Health Service, and Nuclear Regulatory Commission have worked together to develop a 5-year plan to address the health and environmental impacts of uranium contamination in the Navajo Nation.

US EPA, in consultation with the Navajo Nation, has developed a plan to specifically address uranium contamination at abandoned uranium mines, contaminated structures and water sources.

In the first year of the plan, US EPA will address the most urgent risks, such as residents living in potentially-contaminated structures, and those drinking from contaminated water sources.



**May 2008 Progress Report**

## Abandoned Uranium Mines (AUMs)

### Background

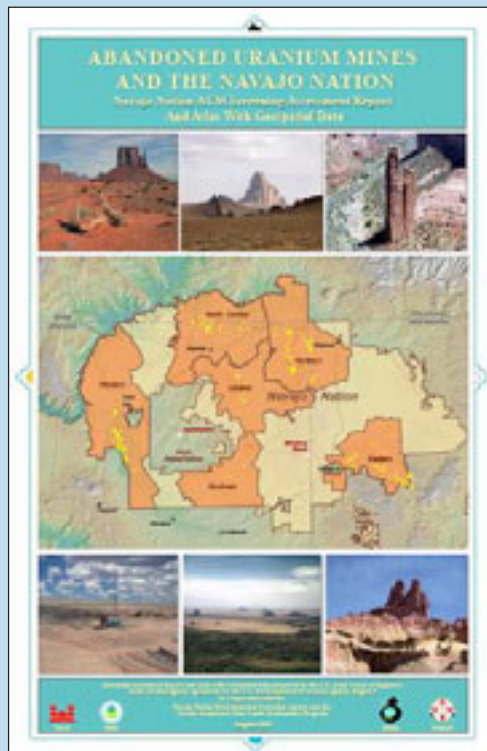
Mine operators extracted nearly four million tons of uranium ore from 1944 to 1986 under lease agreements with the Navajo Nation. As a result, uranium mining has left the Navajo Nation with a legacy of 520 abandoned uranium mines (AUMs).

### Accomplishments

- Developed Comprehensive Database and Atlas
- Completed desktop risk ranking for all 520 mines
- Identified the top 250 sites for further evaluation

### Next Steps

- Conduct screening-level review of the top 200-250 sites
- Conduct more detailed assessments of up to 35 of those sites by 2012



## Contaminated Water Sources

### Background

US EPA is working with the Navajo Nation, federal agencies, and the DiNEH Project to ensure that Navajo families do not drink water that is contaminated with uranium. All regulated community water sources on the reservation are regularly tested and meet the drinking water standard for uranium. Due to lack of suitable water infrastructure on the Navajo Nation many families haul their water from unregulated sources such as livestock wells. Navajo Nation policy prohibits the use of livestock wells for human consumption, nevertheless, the practice continues. The use of unregulated water sources represent the greatest public health risk associated with drinking water for the Navajo Nation.

### Accomplishments

- US EPA tested 50 unregulated water sources and US CDC sampled over 100 additional sources
- All together, we found 22 sources that exceed standards for radionuclides
  - 21 of these are being used for human consumption
- Issued a joint Health Advisory with Navajo EPA, posted advisories at wells, and initiated an outreach campaign
- Funded a circuit rider for five years to provide door-to-door information and assistance to water users

### Next Steps

- Place permanent advisory signs at water sources (May 2008)
- Evaluate options to address contaminated wells such as replacement water supplies
- Work with partner agencies to conduct additional outreach, including radio announcements in English and Navajo language



## Contaminated Structures

### Background

US EPA is concerned that structures, including homes, hogans and storage buildings may have been constructed of contaminated materials from nearby mines. Building material sources may include rocks from the mine and aggregate from mine spoils which may have been used in concrete mixing. Structures may also be contaminated by the presence of radiological materials in outdoor soils and dust that may have been brought into the homes on shoes and clothing.

### Accomplishments

- Spring 2008 - Completed field surveys at over 100 structures and surrounding soils
  - Identified elevated radiological contamination and determined the need to remediate at least 13 contaminated structures as a precautionary measure



### Next Steps

- Determine action levels for contaminated soil removals (May – June 2008)
- Meet with affected families to discuss results and cleanup options (May – June 2008)
- US EPA will conduct remediation activities on at least 13 structures and residential yards in Summer 08
- Conduct outreach to identify other potentially contaminated structures



## Northeast Church Rock Mine (NECR)

### Background

NECR is the highest priority on the AUM ranking list. The mine adjoins the United Nuclear Corporation uranium mill site, a National Priorities List Site. The mine was closed and mine tailings were removed from the surface; however, significant radium contamination remains, posing a public health threat.

### Accomplishments

- Completed a Removal Site Evaluation (identifying a large volume of radium contaminated soils)
- Surveyed ten home sites and residences
- Conducted an Emergency Removal at 4 residences
  - 6,500 cubic yards of contaminated soil were removed (as well as a small portion of concrete from a Hogan floor)
- Developed an Engineering Evaluation and Cost Analysis (EE/CA) of cleanup alternatives

### Next Steps

- US EPA will release the EE/CA and seek public comment in coordination with Navajo EPA
- Select a remedy
- Issue a cleanup order to the responsible party



Courtesy GE/UNC