



**NORTHEAST CHURCH ROCK AND KERR-MCGEE QUIVIRA MINE SITES  
COMMUNITY INVOLVEMENT PLAN**

# INTRODUCTION

The Navajo Nation was the site of widespread uranium mining from the 1940s to the 1980s. While uranium mining no longer occurs within the Navajo Nation, the legacy of uranium contamination remains. More than 500 Navajo abandoned uranium mine (AUM) claims as well as homes and drinking water sources with elevated levels of radiation are spread throughout the Navajo Nation.

Under the federal Superfund program, EPA is working with the Navajo Nation Environmental Protection Agency (NNEPA) to oversee uranium mine assessments and cleanup on the Navajo Nation.


Activities at the Northeast Church Rock Mine and Kerr-McGee Quivira Mines most impact people living in the communities closest to the mines – the Red Water Pond Road community, the Rio Lobo Canyon community along Pipeline Canyon Road and the community along Highway 566 south of the mines. In addition, the mines are located at the junction of five chapters – the

Church Rock, Coyote Canyon, Pinedale, Standing Rock and Nahodishgish chapters. Therefore, the CIP focuses on these groups of residents, chapter officials and other interested parties. While there are additional mines in these chapters that EPA and NNEPA may address in the future, EPA is currently focusing on the cleanup of the largest mines with the greatest impacts on residents. EPA and NNEPA have also completed other activities in the area, addressing homes that may have been constructed with contaminated materials from mine sites. For more information, please contact NNEPA's Superfund program at (928) 871-7692.

EPA Region 9 – headquartered in San Francisco, California – is responsible for working on Navajo abandoned uranium mine cleanup activities on the Navajo Nation. EPA Region 6 – based in Dallas, Texas – is responsible for cleanup activities on private lands in New Mexico, including activities at the nearby United Nuclear Corporation (UNC) Mill site. The UNC Mill site is listed on EPA's Superfund National Priorities List (NPL). Its CIP is available at <http://www.epa.gov/superfund/united-nuclear>.

This Northeast Church Rock and Kerr-McGee Quivira Mine Sites CIP outlines EPA Region 9 outreach activities to address community concerns and meet the following goals:



 Members of the Rio Lobo Community meet with EPA and NNEPA.

- Provide community members with accurate, timely and understandable information about EPA's AUM activities that reflects their communication preferences and culture.
- Coordinate with community members and tribal leaders to make sure EPA understands community concerns and considers community goals in its decision-making process.
- Work with consideration of Dine Fundamental Law and Navajo traditional ways of life.



**AUM: Abandoned uranium mine**

*Cover image: Iconic rock formations near the Northeast Church Rock and Quivira Mine sites.*

## The Community Involvement Plan (CIP)

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The Community Involvement Plan (CIP) is the foundation of the U.S. Environmental Protection Agency's (EPA's) Superfund community involvement and outreach program. This CIP is a living document to assist communication between community members and EPA. The document outlines opportunities for individual participation and meaningful information sharing regarding EPA's activities at the Northeast Church Rock Mine and Kerr-McGee Quivira Mines. The CIP is also a tool for the public to use to make sure EPA is responsive to their needs and concerns.

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To put this plan together, EPA and NNEPA interviewed community members, chapter officials and other stakeholders in the area from June 2015 to September 2015. Interview findings combined with information from EPA experiences in the community guided the development of the CIP.

EPA's Technical Assistance Services for Communities (TASC) program assisted EPA Region 9 during the interview process. EPA and the TASC program also earlier conducted a Technical Assistance Needs Assessment (TANA) with the Red Water Pond Road community. The TANA identified community needs related to understanding and participating in the cleanup process. EPA has been working with the Red Water Pond Road community to respond to many of their needs with support from the TASC program where appropriate.



 Pipeline Canyon Road.



 Red Water Pond Road.

# COMMUNITY INVOLVEMENT PLAN ORGANIZATION

## INTRODUCTION

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## THE COMMUNITY

This section provides a brief community profile and shares issues and concerns raised during the community interviews.

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## THE COMMUNITY INVOLVEMENT ACTION PLAN

This section explains EPA's plan for communicating and engaging with the communities and stakeholders. It also outlines opportunities for community members to provide input during EPA's decision-making process.

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The appendices include information about:

- Site Descriptions
- EPA's Superfund Process at the Navajo Nation
- Glossary
- List of Acronyms
- Uranium and Radiation Resource List

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# — THE — COMMUNITY

 Community members gather near NECR and Quivira sites for 36th Annual Spill Commemoration.

# THE COMMUNITY

## COMMUNITY PROFILE

The Church Rock, Coyote Canyon, Pinedale, Standing Rock and Nahodishgish chapters are located northeast of Gallup, New Mexico. These communities are part of the Eastern Agency of the Navajo Nation.

The Red Water Pond Road community and the Pipeline Canyon Road/Rio Lobo community are located closest to these mines. Many community members in the region own and graze sheep, cattle and horses near their homesites and the mines. Most of the land in the region is used for grazing, and on a limited basis for farming. Various plants in the region are also used for medicinal and traditional purposes. The region features an arid landscape that includes rolling hills, open dry flatlands, rocky canyons and mesas as well as sections of the Rio Puerco.

## Economics

According to the Navajo Nation Division of Economic Development, most jobs on the Navajo Nation are in the government and service sectors (including schools, hospitals, and hotels and motels). In this area, most of the jobs are in nearby Gallup, New Mexico, with many people

commuting into town for work. Additionally, many activities in the Navajo Nation economy are unreported, such as selling arts and crafts or food at food stalls. Regardless of whether unreported economic activities are considered in employment calculations, the actual unemployment rate for the Navajo Nation is substantially higher than the national average.<sup>1</sup>

<sup>1</sup> Navajo Nation Division of Economic Development. 2009-2010 *Comprehensive Economic Development Strategy of the Navajo Nation*.

## Demographics

About 250 to 500 predominantly Navajo people live within two miles of the Northeast Church Rock and Kerr-McGee Quivira Mine sites.

The languages spoken in the area are primarily English and Navajo. According to the 2009-2013 American Community Survey, more than half of community members (over 59 percent) in the area's five chapters speak a language other than English at home. More than three-quarters of community members in the area (over 80 percent) report speaking English "less than very well."<sup>2</sup>

<sup>2</sup> Navajo Nation Division of Economic Development. 2006-2010 *American Communities Survey*.



 Red Water Pond Road community members at the 36th Annual Spill Commemoration.



## COMMUNITY CONCERNS AND PREFERENCES

To better understand the community, its culture and concerns, EPA and NNEPA interviewed community members, local officials and stakeholders in the area. All interviewees had knowledge of nearby abandoned uranium mines, the processing mill and the mill tailings disposal area. However, many were unfamiliar with EPA's role with removing contaminated soils and structures from the area. Many community members shared stories about family members that worked in the mines, grazed livestock nearby, and drank from and washed in local water sources. The community's livestock and area wildlife rely on these waters as well.

All interviewees emphasized that the mine cleanups should be thorough, protective, lasting and timely. While community members expressed frustration at the delay in federal government involvement in the cleanup, most welcomed EPA's current efforts in the area. Looking forward, interviewees emphasized the importance of economic development, job training and expanded employment opportunities. Interviewees also noted that infrastructure improvements during cleanup could benefit economic development in the area.

Some concerns described during the interviews are within the scope of EPA's work on abandoned uranium mines and can be addressed by EPA working with the community and tribal leaders directly. For concerns outside of EPA's scope, EPA will collaborate with other federal, tribal and community organizations.

Community concerns and preferences are grouped into the following categories:

1. Health Concerns
2. Abandoned Uranium Mine, Mill and Tailings Area Cleanup Concerns
3. Future Land Use
4. Air and Water Concerns
5. Communication and Information Preferences

### Health Concerns

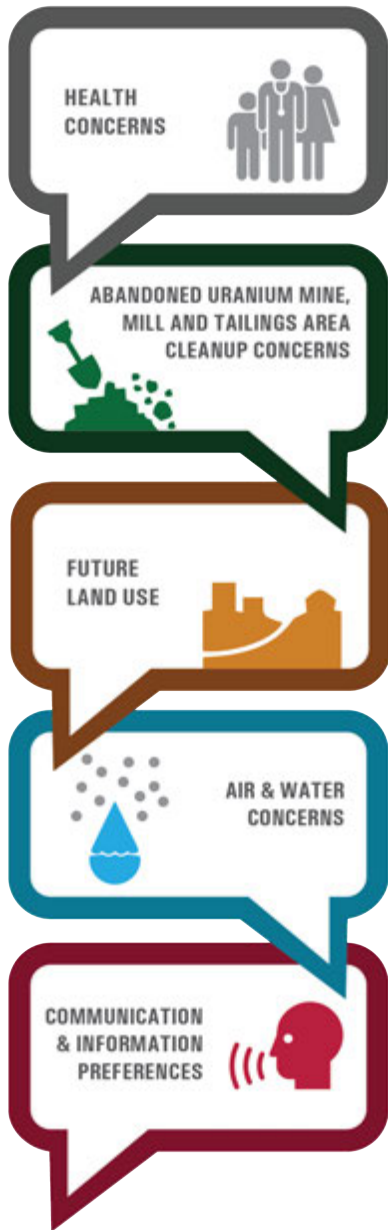
Many community members and local officials asked for information about how to reduce their contact with uranium and sought to better understand the risks of everyday activities. Many community members and local officials asked about the health effects of dust blowing from the mines and mill and tailings pile areas. They were also concerned about livestock



 A child watches the 2009 Interim Removal Action.

and wildlife grazing in mine areas and drinking from contaminated water sources. Many interviewees were concerned about the effects of drinking water or farming with uranium-contaminated water.

Many community members shared stories about their own illnesses or illnesses of their loved ones. Many community members and local officials indicated that recent factsheets on radiation and uranium and cleanup factsheets have been helpful. They requested additional information and more frequent updates on site-related health information. Interviewees discussed health effects such as cancers, stomach pain, asthma and heart problems. They expressed interest in understanding which health conditions may be related to uranium and radiation exposure, as well as learning about key findings from earlier



 Community concerns and preferences.

health studies in the area. For more information on who to contact for these and other topics, see the Uranium and Radiation Resource List in the Appendix.

### Abandoned Uranium Mine, Mill and Tailings Area Cleanup Concerns

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Many interviewees discussed their concerns about community involvement in the cleanup process. Community members and local officials requested that chapter officials and committees, the Red Water Pond Road Community Association, the Pipeline Canyon Road/Rio Lobo community, affected families and the general population receive timely updates. Many community members expressed concern about whether EPA would consider their input in the decision-making process. Community members and local officials also asked for clarification on the roles of various agencies and organizations, and noted the need for more outreach and education about EPA's cleanup process.

Community members and local officials worry about the extent of cleanup at both the mine areas and the planned permanent waste repository at the UNC mill tailings area. In addition, they are worried about community areas and homes, grazing land and wildlife habitat, and the need for clean air and water supplies. Community members expressed concern about possible

unintended consequences of earlier reclamation efforts, such as sinkholes and subsidence, as well as poor road conditions and traffic being made worse by future cleanup activities. Interviewees also noted that many areas include sacred sites and ceremonial locations, and indicated that cleanup should take these cultural and historical resources into account. Interviewees also shared concerns about long-term monitoring of the cleanup and the availability of funding.

Finally, community members and local officials indicated a need for mapping, signage and education so that people – and especially children – can understand and avoid the location of mines and mine wastes in the area.


### Future Land Use

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Many interviewees emphasized the need to ensure that the mines, mill and tailings area, and community areas are safe for people to live in, work and gather.

Community members and local officials also shared their thoughts about future land use of mine areas. Some questioned whether the land will ever be safe for humans, livestock or wildlife. Many expressed their preference that the land be returned safely to grazing use and wildlife habitat. Most agreed that the land should not be simply fenced off and restricted from use



 Looking down Pipeline Canyon Road at the adjacent United Nuclear Corporation site.

by current and future residents. Improving local infrastructure – including roads in poor condition, electricity and running water – is a priority for the five chapters. Increasing employment opportunities in the area is also a major interest.

### **Air and Water Concerns**

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Interviewees emphasized that air and water quality and access to clean water were among the most important environmental issues in their communities. Many community members and local officials believe that water sources and local wells have been contaminated by abandoned uranium mines. They are also concerned about

the mines' potential effects on groundwater and its future use as a drinking water source. Community members are also worried about health risks from rainwater that runs off from mines and toward homes and community areas.

Interviewees noted that wind-blown contamination and dust are major concerns. They asked how and when air monitoring could take place, and where air monitors would be located.

### **Communication and Information Preferences**

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Many community members shared their preferences for communication and receiving

information. Most agreed that EPA should be transparent about its work and strive to include all community members. Community members want EPA to keep chapter officials updated on all work and also share information directly with community members. Many requested that EPA help the community coordinate information-sharing and education efforts across all of the sites, by establishing a community liaison and/or by forming a group that can assist in sharing information across all five chapters.

Most community members and local officials recommended that EPA share information primarily in written form, and include many pictures and maps indicating the location of abandoned uranium mines as well as

contaminated water sources. They stressed that information should be simple and easy to understand. Most recommended sharing written information with community members through regular mailings. Written materials should be provided in English, with Navajo interpretation services available for verbal communication.

Community members also emphasized the importance of in-person meetings. They requested that EPA host meetings on past sampling and remediation activities, current cleanup planning, and upcoming activities at the Northeast Church Rock Mine, the Kerr-McGee Quivira Mines and the UNC Mill sites. Suggestions included standalone meetings at chapter houses or other community locations, with the possibility of a larger meeting to host all five chapters at one time. People also expressed interest in longer meetings or workshops as needed to cover important information.

Additionally, community members and local officials were concerned about hard-to-reach groups, such as people in ill health, people living in remote locations and people without the time or resources to attend meetings. Most recommended regularly mailed updates for remote community members and in-person visits to reach people in ill health and people who are unable to attend meetings. Several interviewees emphasized the importance of in-person, door-to-door contact with community members.



 EPA site team members at the Red Water Pond Road Community Association Spill Commemoration.




 Sheep grazing near Pipeline Canyon Road.





# THE COMMUNITY INVOLVEMENT ACTION PLAN

 Homes near the Northeast Church Rock site, with Quivira site in the background.

# THE COMMUNITY INVOLVEMENT ACTION PLAN

This action plan outlines the tools that EPA will use to share information with the community. The action plan also outlines how EPA staff will be available to receive input from the community that will be considered in the decision-making process. Finally, the action plan details EPA's partnership with the Navajo Nation tribal government in the development and implementation of all activities at AUM sites.

Timing information is included with each outreach tool to help community members understand when EPA will conduct outreach activities and the type of activities to expect. Community members can also contact EPA's Community Involvement Coordinator with questions about future outreach activities.

EPA understands that many residents, and especially elders, are Navajo language speakers. To facilitate the inclusion and participation of all community members, EPA will have an interpreter or tribal representative present during information meetings, open houses and door-to-door outreach. EPA typically conducts outreach with a representative from NNEPA present

**Community members can discuss concerns with EPA whenever a representative is in the area, or contact the EPA Community Involvement Coordinator by phone, email, or mail at any time.**



as well. Interviewees recommended that EPA develop printed materials in English.

## TOOLS FOR SHARING INFORMATION AND OPPORTUNITIES FOR EPA TO LEARN FROM THE COMMUNITY


EPA will use the following tools to ensure that community members have opportunities to provide meaningful input and to make sure community concerns are considered during EPA's cleanup decision-making process. Community members can provide input at any time by contacting EPA's Community Involvement Coordinator.

### Written Communication

Most interviewees expressed a preference for receiving written communication from EPA. Additionally, community members and local officials noted that written communications are an effective tool for reaching remote residents. They stressed that written communication be short and simple and include as many graphics as possible.

EPA will provide written communications through factsheets and flyers, which will be distributed through the U.S. Postal Service and via email. The factsheets will address the community concerns identified during the interviews. EPA will make sure contact lists are up to date and include interested residents in the area. Community members on EPA's contact list will receive information such as EPA factsheets or postcard meeting invitations. To be added to EPA's contact list, please contact EPA Community Involvement Coordinator Priscilla Tom at (505) 240-0093.



 Red Water Pond Road community members at the 36th Annual Spill Commemoration.



## TOOLS FOR SHARING INFORMATION & FOR EPA TO LEARN FROM THE COMMUNITY










								
Fact sheets	Email updates	Door-to-door	Special events	Coordination with other agencies	Job training programs	EPA presentations	EPA informational gatherings	Community group meetings
▼	▼	▼	▼	▼	▼	▼	▼	▼
TO DESCRIBE NEW WORK, CONDITIONS OR AS REQUESTED	TWICE A YEAR OR MORE OFTEN AS NEEDED	WHEN FIELD ACTIVITIES MIGHT IMPACT SPECIFIC HOUSEHOLDS OR AS NEEDED	ONCE A YEAR	ONGOING	TO DESCRIBE NEW WORK, CONDITIONS OR AS REQUESTED	WHEN MAJOR WORK IS PLANNED, WHEN A NEW RESPONSIBLE COMPANY IS IDENTIFIED, AS NEEDED AND AS REQUESTED	TO DESCRIBE NEW WORK, CONDITIONS OR AS REQUESTED DEPENDING ON UPCOMING WORK AND COMMUNITY CONCERNS THAT NEED IN DEPTH DISCUSSION	TO DESCRIBE NEW WORK, CONDITIONS OR AS REQUESTED DEPENDING ON UPCOMING WORK AND COMMUNITY CONCERNS THAT NEED IN DEPTH DISCUSSION

 Table describing information-sharing tools between EPA and the community.

EPA currently uses email to update the Red Water Pond Road community on EPA activities and events hosted by other organizations. EPA will maintain a broader email list that encompasses additional interested parties to use for notification of significant actions or events such as public meetings, open houses, or cleanup decisions. EPA will include community partners – such as chapter and other elected officials, local organizations, and schools as requested – in this broader outreach.

EPA has shared the following materials with community members:

### *Health Factsheets*

EPA worked with the Agency for Toxic Substances and Disease Registry (ATSDR) and other partner agencies to create a series of factsheets on uranium and radiation in the Navajo Nation. These factsheets discuss uranium and radiation basics, health effects of uranium and radiation, and how to reduce contact with uranium and radiation.

### *Agencies to Contact with Questions Factsheet*

EPA worked with partner agencies to create a factsheet to help community members

determine which agency to contact for questions related to uranium or radiation on the Navajo Nation.

### *Site-specific Factsheets*

EPA has created multiple factsheets for the Northeast Church Rock Mine, the Kerr-McGee Quivira Mines and the UNC Mill sites over the years. The factsheets have included brief summaries of site histories, background information, upcoming site activities and summaries of completed work.

These materials are available on the EPA web pages listed on page 16.



Contact the EPA Community Involvement Coordinator to be added to the mailing list.

### EPA Websites

Regular updates on EPA’s website will provide cleanup information and important documents. Information for the Northeast Church Rock Mine and Kerr-McGee Quivira Mines will be available online at:

<https://www.epa.gov/navajo-nation-uranium-cleanup/eastern-region-abandoned-uranium-mines>

Information for the UNC Mill Site will be available at:

<http://www.epa.gov/superfund/united-nuclear>

### Information Repositories

Several interviewees noted that information should be made available locally for all community members.

As a part of the Superfund process, EPA is required to maintain a set of documents and information locally, where the public can easily access printed or digital copies. This is called the “Information Repository.” Information repositories contain copies of technical or planning documents, factsheets, results of previous meetings and other similar types of information. EPA currently has information repositories at the two libraries listed below:

#### University of New Mexico Gallup Zollinger Library

705 Gurley Avenue  
Gallup, NM 87301

#### Navajo Nation Public Library

Highway 264 Loop Road  
Window Rock, AZ 86515

EPA could also work with local chapters to provide information at chapter houses. Community members may request copies of documents by contacting EPA’s Community Involvement Coordinator.

### Door-to-door Outreach

Many community members and local officials requested that EPA share information with families that live or have grazing permits near the mines. EPA will share information and discuss concerns with these residents who are unable to attend meetings through door-to-door outreach. EPA will coordinate with local officials to contact grazing permit holders, homesite leaseholders and homebound residents near these mine areas. Interested individuals can contact EPA’s Community Involvement Coordinator to request an in-person meeting with EPA.



Community members discuss site information with U.S. EPA during a Superfund 101 workshop.



 Community members speak with EPA and NNEPA during a tour of the site.

## Newspaper and Radio Communication

EPA will use the following media channels for outreach in the Church Rock, Coyote Canyon, Pinedale and Standing Rock chapters:

### Newspaper Communication

Navajo Times  
Gallup Independent

### Radio Communication

KTNN 660 AM: The Voice of the Navajo Nation  
KGAK 1130 AM  
KGLP 91.7 FM  
KYVA 1230 AM

## Uranium Awareness Outreach Campaign

EPA has been working with ATSDR to increase awareness among Navajo people about uranium issues on the Navajo Nation.

EPA, ATSDR and the Indian Health Service (IHS) developed a series of posters for 10 geographic regions of the Navajo Nation. These posters feature a map showing locations of abandoned uranium mines, contaminated water sources, regulated watering points and other landmarks. The posters also include information about warning signs, reducing contact with uranium on the Navajo Nation and maintaining good health. Some of these materials were provided to area residents during CIP interviews.

IHS and Community Health Representatives (CHRs) distributed these posters to IHS Health Clinics and chapters across the Navajo Nation. To prepare for this outreach, EPA, ATSDR and IHS trained the CHRs on the information provided in the posters. EPA will continue to distribute the posters during future meetings and by request. EPA will also continue to coordinate with ATSDR, IHS and the CHRs on uranium awareness outreach.

## Information repositories

- Check out the repository or visit the website
- Contact the EPA Community Involvement Coordinator if your school or group would like to host an additional repository location


## Presentations

Many interviewees suggested that EPA present information about local uranium issues at the chapter houses. Other community locations mentioned include Fire Rock Casino, the Rural Development Office, the Gallup senior center and Red Rock State Park. Interviewees said previous presentations by EPA at large meetings were an effective way to reach many in the Northeast Church Rock community.

Many interviewees recommended that EPA also host informational gatherings, especially when more time is needed for deep engagement with community members. Examples for these types of meetings include discussions about signs and fences, cleanup options for mines, the mill and tailings area, large amounts of work planned for an area, or particular community concerns that need to be discussed in depth.

Depending on the topics to be discussed, EPA will use the following formats for these gatherings:



 Navajo Peace Maker facilitates U.S. EPA meeting at Church Rock Chapter house.



Your input is important. Please provide input at any time by contacting the EPA Community Involvement Coordinator.

## Key Contacts

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### U.S. Environmental Protection Agency

#### Region 9

**Mark Ripperda**  
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#### Region 6

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### Navajo Nation Environmental Protection Agency

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Navajo Superfund Program  
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(928) 871-6859  
[viviancraig@navajo-nsn.gov](mailto:viviancraig@navajo-nsn.gov)

*Meetings and Open Houses* – larger community meetings that may include EPA presentations, poster sessions, and time for community members to ask questions and share feedback. EPA has previously hosted several such meetings, including, for example, forums about groundwater, revegetation, the CERCLA law and a health and risk workshop. Community members may request additional such in-depth technical forums or trainings from either EPA or through the TASC program.

*Small Venue Meetings and Focus Groups* – smaller, more informal gatherings focused on a particular geographic region, interested group or extended family, providing opportunities for community members to share their thoughts and concerns with EPA representatives.

*Workshops and Facilitated Discussions* – facilitated meetings designed to answer specific questions or address specific community concerns.

EPA will send out meeting notices at least one week prior to any gatherings via the email list and by contacting community partners and other outlets as appropriate.

Typically, EPA staff will make presentations at chapter houses when major work is planned in an area or to increase awareness about upcoming EPA activities. Public meetings have been held at the Pinedale Chapter House, the Church Rock Chapter House and the Gallup Library.

EPA will reach out to local officials and coordinate presentations with the local community at chapter houses, community

association meetings and other events. Organizations interested in a particular presentation can contact EPA's Community Involvement Coordinator.

## Community Group Meetings

EPA staff meet regularly with members of the Red Water Pond Road community, including taking part in monthly conference calls to discuss community concerns and site activities. EPA also makes periodic presentations at the monthly Red Water Pond Road Community Association meetings. These short presentations provide time for community members to ask questions and share feedback.

Several representatives from the Pipeline Canyon Road/Rio Lobo community recommended creating a community group to help facilitate EPA communication across the five chapters. EPA will work with the Rio Lobo community to explore this option. Additionally, EPA can provide technical assistance to help community groups understand technical documents and the cleanup process through EPA's Technical Assistance

## Technical Assistance Services for Communities

Contact the EPA Community Involvement Coordinator if you are interested in learning more about technical assistance services that EPA can provide to community groups.

Services for Communities (TASC) program. Interested community members should contact the EPA Community Involvement Coordinator.

## Special Events

Several local events provide an opportunity to meet informally with local residents:

- 1979 spill commemoration
- Community field day
- Annual Eastern Navajo Agency Fair
- Other events as requested/available

## Job Training and Opportunities

EPA provided a week-long job training program in Gallup in 2013. Additional job training will be provided prior to the beginning of the final cleanup actions. EPA will work with Navajo Nation Department of Economic Development to announce potential job opportunities to the local communities prior to the commencement of work.

## Working with Navajo Nation Tribal Government

The Navajo Nation is a federally recognized tribe with its own governmental system. EPA policy is to consult on a government-to-government basis with federally recognized tribal governments when EPA actions and decisions may affect tribal interests.

## Summary

EPA and NNEPA interviewed community members, local officials and other stakeholders in the Church Rock, Coyote Canyon, Pinedale and Standing Rock chapters from March 2015 to September 2015. EPA used information from these interviews to learn about community concerns and prepare this CIP. EPA would like to thank interviewees and the communities for their time, patience and willingness to share their stories and concerns.

EPA recognizes that input and feedback from community members is crucial to the success of uranium cleanup on the Navajo Nation. EPA will continue to work closely with community members and elected officials in the cleanup process, as outlined in this CIP. Additionally, community members are always welcome to provide input by contacting EPA's Community Involvement Coordinator.

EPA interacts with Navajo Nation government on several levels as a part of AUM assessment and cleanup on the Navajo Nation. EPA consults directly with the Navajo Nation President for significant developments, consistent with EPA's tribal policies and guidance. Examples of formal consultation include major decisions and new federal Five-Year Plans for addressing uranium contamination on the Navajo Nation. EPA collaborates with NNEPA's Superfund program and the Navajo Nation Department of Justice on all AUM assessment and cleanup activities. Finally, EPA communicates periodically with officials such as local Navajo Nation Council Delegates and chapter officials at key times during the Superfund process.

### Coordination with Other Agencies and Organizations

As part of the new Five-Year Plan (2014-2018), federal agencies are creating a community outreach network to coordinate federal efforts across the Navajo Nation. In addition, EPA is working to strengthen ties with other federal, tribal and community organizations in the Navajo Eastern Agency. EPA will continue to provide information to community members about the roles of different organizations and events hosted by various groups in the area.

EPA will continue to strengthen relationships with:

- NNEPA
- The Navajo Nation Abandoned Mine Lands (NNAML) program
- The Indian Health Service Community Uranium Exposure-Journey to Healing (CUE-JTH) program
- The Indian Health Service Radiation Exposure Screening and Education program (RESEP)
- Navajo Birth Cohort Study staff, especially the Clinical Cohort Liaisons (CCLs) and Community Health Environmental Research Staff (CHERS)
- Navajo Nation Department of Health Community CHRs
- Federal Five-Year Plan partners, including the Bureau of Indian Affairs (BIA), IHS, ATSDR, the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE)
- Research universities, including the University of New Mexico (UNM) and Northern Arizona University (NAU)
- Community Land Use Planning Committees
- Chapter officials and other elected representatives
- The Red Water Pond Road Community Association
- The Pipeline Canyon Road/Rio Lobo community
- Others as suggested by community members and local officials

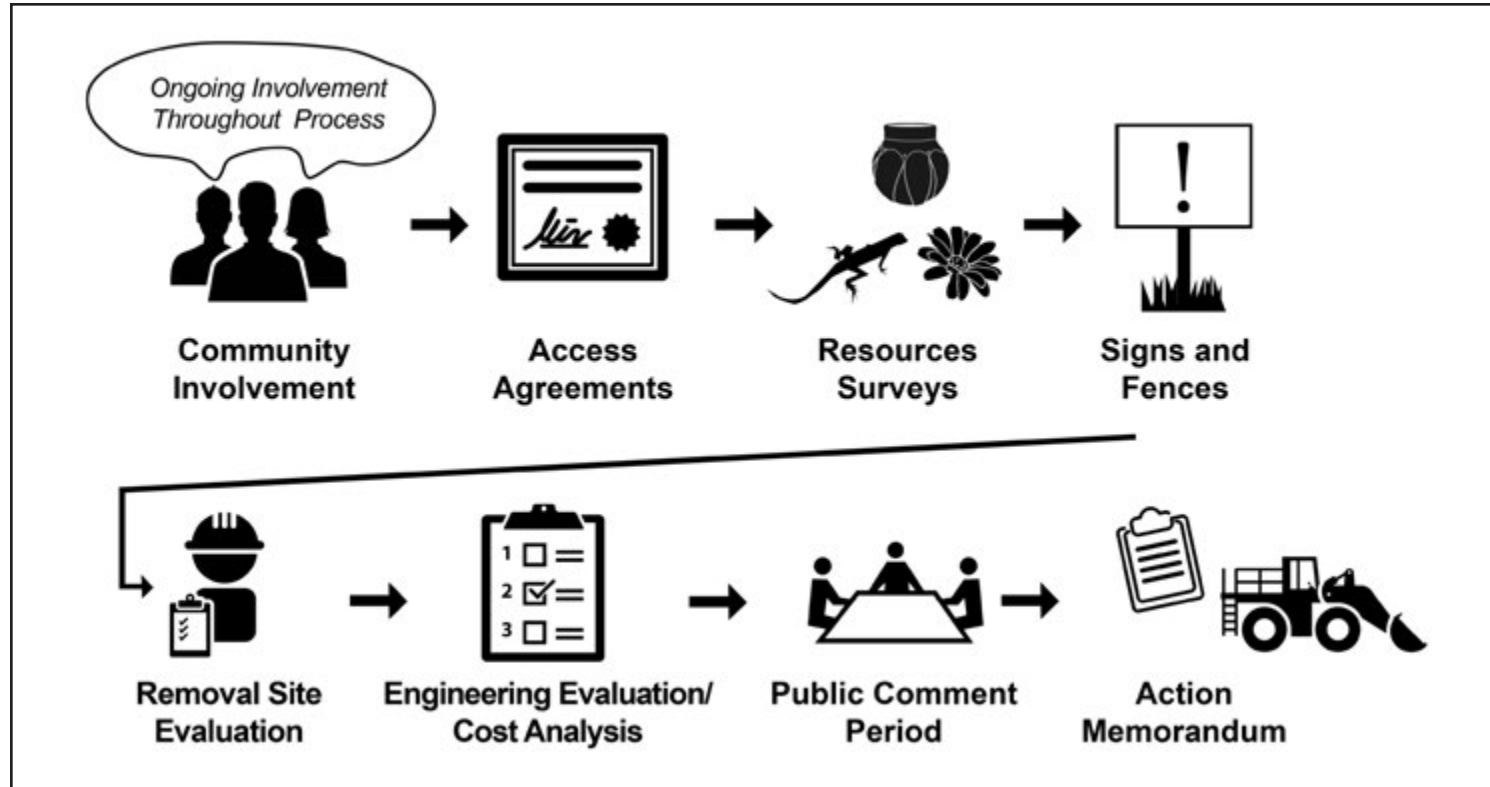
# APPENDICES

## SITE DESCRIPTIONS

- The Northeast Church Rock (NECR) Mine is a former uranium mine at the northern end of State Highway 566, about 17 miles northeast of Gallup, New Mexico, in the Pinedale chapter of the Navajo Nation. United Nuclear

Corporation (UNC) operated the NECR Mine from 1967 to 1982. During mining, about 3.5 million tons of ore was extracted, making it one of the highest-producing uranium mines on the Navajo Nation. EPA has

cleaned up over 200,000 tons of contaminated materials in the residential “Step-Out” Areas shown in the site map on page 22. The mine waste pile has been covered and stabilized until it is moved to the UNC Mill site.



 Superfund process on Navajo Nation.

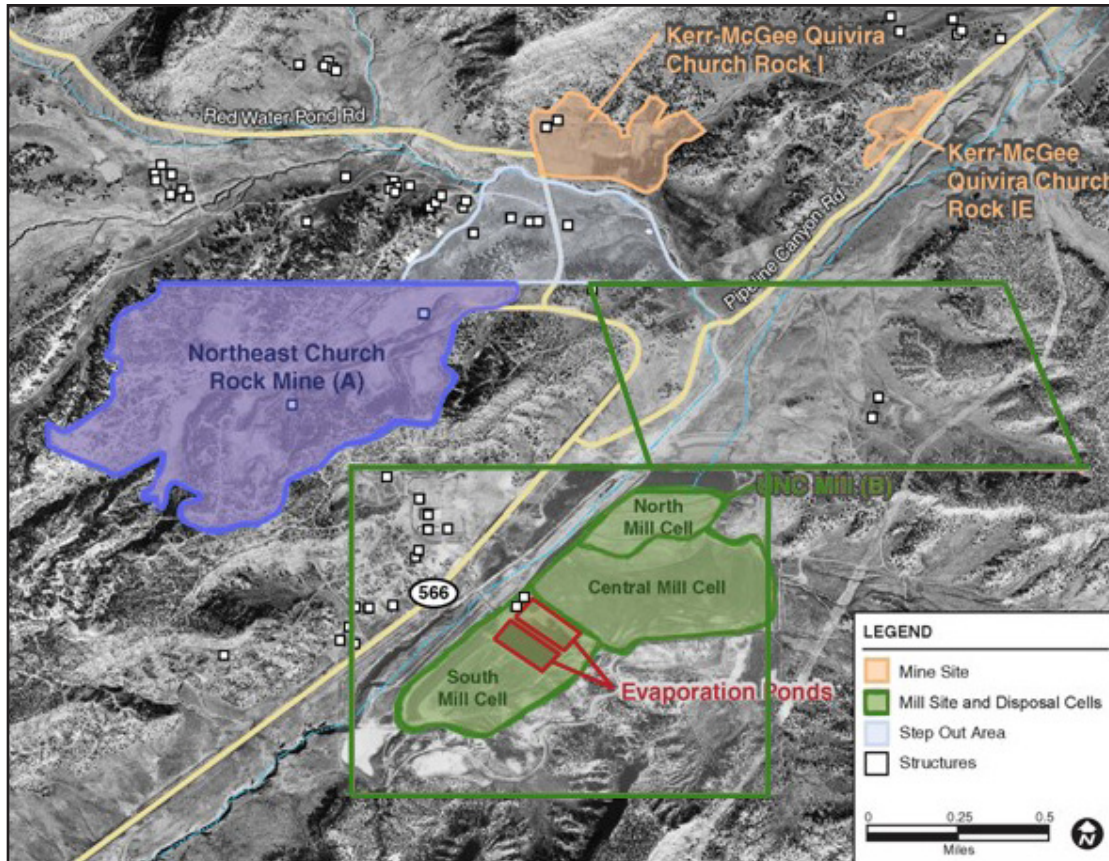
## The Church Rock Uranium Spill

On July 16, 1979, UNC's Church Rock uranium mill tailings disposal pond breached its dam.

Over 1,000 tons of solid radioactive mill waste and 93 million gallons of acidic, radioactive tailings solution flowed into the Puerco River. Contaminants traveled 80 miles downstream.

The accident was the largest release of radioactive material in U.S. history. EPA listed the site on the Superfund program's National Priorities List in 1983.

- The two Kerr-McGee Quivira Mines – Church Rock #1 and Church Rock #1 East (or CR-1 and CR-1E) – are former uranium mines just northeast of the NECR Mine, also at the northern end of State Highway 566, in the Coyote Canyon chapter of Navajo Nation. Kerr-McGee operated the mines from 1974 to 1985. During this time, about 1.2 million tons of ore was extracted and sent to the Rio Algom Mill in Ambrosia Lake. These mines also rank among the highest producing mines on the Navajo Nation. Rio Algom Mining Company, a successor to Kerr-McGee, stabilized the main waste pile and removed about 20,000 tons of contaminated soils along Red Water



 Northeast Church Rock Mine and United Nuclear Corporation site map.



## EPA'S SUPERFUND PROCESS ON THE NAVAJO NATION

Pond Road. The Quivira Mines are now being addressed with funding from the Tronox settlement.

- To process uranium ore from the UNC mines and dispose of mill tailings, UNC also operated a mill (25 acres) and a disposal area (100 acres) nearby. This area is now known as the UNC Mill Superfund site. The site is located across Highway 566 from the NECR Mine site.

For a detailed review of EPA's cleanup process, please see "EPA Superfund Process on the Navajo Nation."

For more information on the NECR Mine and the Kerr-McGee Quivira Mines please visit:


<https://www.epa.gov/navajo-nation-uranium-cleanup/eastern-region-abandoned-uranium-mines>

For information on the UNC Mill Site please visit:

<http://www.epa.gov/superfund/united-nuclear>

EPA is addressing abandoned uranium mines on the Navajo Nation through EPA's Superfund program, in partnership with NNEPA's Superfund program. This section provides an outline of the Superfund process on the Navajo Nation. This outline specifically covers cleanup actions requiring more than six months' planning time; these are the most common actions on the Navajo Nation. A similar process is used for cleanup actions requiring less planning time.



 Navajo Nation President Russell Begaye speaking at 36th Annual Spill Commemoration.



 Removal action work taking place on the Quivira site.

EPA is initially focusing on priority mines. These mines have high levels of radiation and are located near homes or water resources.

Priority mines are identified in the AUM Five-Year Plan, available online at <https://www.epa.gov/navajo-nation-uranium-cleanup/current-and-previous-five-year-plans>.

EPA can move forward with mine assessment and cleanup by identifying a responsible company to fund the cleanup or by using federal funding. Once EPA identifies a responsible company, EPA can negotiate a legal agreement or order the company to assess mines and evaluate cleanup options. Any work completed by responsible

companies requires EPA approval and oversight in coordination with NNEPA.

EPA or the responsible company must get access approvals from the Navajo Nation and other parties such as homesite lease holders, grazing permit holders and allottees as appropriate before beginning work. After gaining access approvals, EPA or the responsible company completes a cultural resources survey, and EPA must consult with the Navajo Historic Preservation Department Director on cultural resources that might be affected by assessment or cleanup work. Additionally, a biological survey may be needed, and EPA may need to consult with the Navajo Nation Department of Fish and Wildlife and

possibly the U.S. Fish and Wildlife Service on potential impacts to fish and wildlife.

After getting the necessary approvals, EPA or the responsible company may begin placing signs and/or fences at mines, depending on community input as well as the mine's location and level of radiation. A detailed assessment of contamination follows. The assessment is outlined in a document called a Removal Site Evaluation (RSE). Next, an evaluation of cleanup options takes place. Evaluation findings are summarized in an Engineering Evaluation/Cost Analysis (EE/CA).

EPA uses the information in the EE/CA, along with community input EPA has been receiving throughout the assessment process, to select a preferred cleanup option. EPA presents the EE/CA and preferred cleanup option to the community during a public meeting, which is followed by a public comment period.

EPA uses this additional feedback from the community to select a cleanup option and issues an Action Memorandum on the decision. The Action Memorandum includes a response to the public comments received at the public meeting or submitted in writing during the comment period. At this point, EPA or the responsible company can begin the design and construction of cleanup on the mine site. At the NECR Mine site, there is an additional step in the cleanup process because the waste is going to a mill site regulated by the U.S. Nuclear Regulatory Commission (NRC). After the design

of a permanent repository for NECR mine waste at the UNC Mill site, the responsible company (UNC/GE) will submit a request (a license amendment) to NRC to build the repository. NRC approval of the request is required before construction can begin. In addition to NRC, the Navajo Nation, and the local community, EPA is also coordinating with the U.S. Department of Energy (DOE) and the State of New Mexico. DOE will be responsible for the long-term maintenance of the mill site and repository. The State of New Mexico has authority at the UNC Mill site because the mill is located on privately owned land.

## GLOSSARY

**Abandoned Uranium Mine (AUM) Claim** – An AUM claim is generally associated with a patented or unpatented mining claim or a lease of federal, state, tribal or private lands. A claim may represent a single feature such as a surface or underground excavation, or it may include an area containing a complex of multiple interrelated excavations. As a result, one claim may represent multiple “mines” listed in other databases.

**Action Memorandum** – EPA’s primary decision document that determines the need for a removal action, authorizes the removal action, identifies the action and cleanup levels (if applicable), and explains the rationale for the removal response.

**Contamination** – Introduction into water, air, and soil of microorganisms, chemicals, toxic substances, wastes, or wastewater in a concentration that makes the medium unfit for its next intended use.

**Engineering Evaluation/Cost Analysis (EE/CA)** – An analysis of cleanup alternatives for removal actions requiring more than six months’ planning time. EPA selects one of the alternatives outlined in the EE/CA in the Action Memorandum.

**Groundwater** – The supply of fresh water found beneath the Earth’s surface, usually in aquifers, which supply wells and springs. Because groundwater is a major source of drinking and irrigation water, there is growing concern over contamination from leaching agricultural or industrial pollutants.

**Information Repository** – An information repository is a record storage area at or near a Superfund site that contains reports, documents, and factsheets pertaining to the site.

**Radiation** – Energy that travels in the form of waves or high-speed particles. One way that radiation can be released to the environment is during the decay of radioactive elements such as uranium.

**Removal Action** – Short-term immediate actions that address releases of hazardous substances that require expedited responses.

**Superfund** – The program operated under the legislative authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) that funds and carries out EPA’s emergency and long-term removal and remedial activities

**Uranium** – A heavy, naturally radioactive, metallic element that is used to produce nuclear power and weapons.

## ACRONYMS AND ABBREVIATIONS

<b>ATSDR</b>	Agency for Toxic Substances and Disease Registry
<b>AUM</b>	Abandoned Uranium Mine
<b>BCS</b>	Birth Cohort Study
<b>BIA</b>	Bureau of Indian Affairs
<b>CDC</b>	Centers for Disease Control and Prevention
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act
<b>CHERS</b>	Community Health Environmental Research Staff
<b>CHR</b>	Community Health Representative
<b>CIP</b>	Community Involvement Plan
<b>CUE-JTH</b>	Community Uranium Exposure-Journey to Healing Program
<b>DOE (USDOE)</b>	United States Department of Energy

<b>EE/CA</b>	Engineering Evaluation/Cost Analysis
<b>EPA (USEPA)</b>	United States Environmental Protection Agency
<b>IHS (NAIHS)</b>	Navajo Area Indian Health Service
<b>NAU</b>	Northern Arizona University
<b>NDOH</b>	Navajo Department of Health
<b>NDWR</b>	Navajo Department of Water Resources
<b>NNAML</b>	Navajo Nation Abandoned Mine Lands
<b>NNEPA</b>	Navajo Nation Environmental Protection Agency
<b>NRC (USNRC)</b>	United States Nuclear Regulatory Commission
<b>NTUA</b>	Navajo Tribal Utility Authority
<b>RECA</b>	Radiation Exposure Compensation Act
<b>RESEP</b>	Radiation Exposure Screening and Education Program
<b>SARA</b>	Superfund Amendments and Reauthorization Act
<b>TANA</b>	Technical Assistance Needs Assessment
<b>TASC</b>	Technical Assistance Services for Communities
<b>UMTRA</b>	Uranium Mill Tailings Remedial Action Program
<b>UNM</b>	University of New Mexico

## URANIUM AND RADIATION RESOURCE LIST



### Uranium and Radiation on the Navajo Nation

# Resource List 2016

## Agencies to Contact with Questions

Topic	Program and Agency	Telephone Number
<b>Mines and Structures</b>		
Cleanup of chemical and radiological hazards at abandoned uranium mines	Region 9 Superfund Program, USEPA, San Francisco, CA  Eastern Region Central Region Northern Region Western Region	(800) 231-3075 (toll free)  (505) 240-0093 (480) 250-0990 (928) 215-9402 (415) 972-3068
	Navajo Superfund Program, NNEPA, Window Rock	(800) 314-1846
Contaminated structures	Navajo Superfund Program, NNEPA, Window Rock	(800) 314-1846
Actions to reduce physical hazards at abandoned mines	NNAML/Uranium Mill Tailings Remedial Action (UMTRA)  Window Rock Office Shiprock Office Tuba City Office	(928) 871-6982 (505) 368-1220 (928) 283-3188
Radon in your home, Radon test kits	Radon Program, NNEPA, Window Rock	(928) 871-6790
<b>Uranium Mill Sites</b>		
Disposal sites – Long term care and maintenance	Office of Legacy Management, USDOE, Grand Junction, CO  Manager for Mexican Hat Manager for Shiprock Manager for Tuba City	(970) 248-6621 (970) 248-6018 (970) 248-6073
Former processing site – Long term care and maintenance	Office of Legacy Management, USDOE, Grand Junction, CO  Manager for Monument Valley	(970) 248-6621
Technical oversight, community outreach	NNAML/Uranium Mill Tailings Remedial Action Program (UMTRA), Window Rock	(505) 860-7279
Disposal sites – General licensing and oversight	US Nuclear Regulatory Commission, Washington DC	(301) 415-6749
Former processing site - Oversight	US Nuclear Regulatory Commission, Washington DC	(301) 415-6749

Topic	Program and Agency	Telephone Number
<b>Health</b>		
Preventive health information, uranium awareness posters	Community Health Representative / Outreach Program, NDOH, Window Rock	(928) 871-6786
Uranium medical screening and monitoring program	Community Uranium Exposure – Journey to Healing, NAIHS, Northern Navajo Medical Center, Shiprock	(505) 368-7391 or (505) 368-7402
Navajo Birth Cohort Study	University of New Mexico, Albuquerque, NM ATSDR Division of Toxicology and Human Health Effects, Atlanta, GA	(877) 545-6775 (770) 488-1347
Downwinders radiation exposure compensation claim	Radiation Exposure Screening and Education Program (RESEP), NAIHS, Northern Navajo Medical Center, Shiprock	(505) 368-7054
	Office of Navajo Uranium Workers, NDOH, Shiprock	(505) 368-1260
Uranium workers radiation exposure compensation claim	Radiation Exposure Screening and Education Program (RESEP), NAIHS, Northern Navajo Medical Center, Shiprock	(505) 368-7054
	Office of Navajo Uranium Workers, NDOH, Shiprock	(505) 368-1260
<b>Water</b>		
Water hauling practices from safe drinking water sources	Public Water Systems Supervision Program, NNEPA, Window Rock	(928) 871-7755 <a href="http://www.navajopublicwater.org/">http://www.navajopublicwater.org/</a>
Locations of regulated watering points	Navajo Tribal Utility Authority, Fort Defiance	(800) 528-5011
Water quality of NTUA piped water in your home, or from an NTUA public water system	Navajo Tribal Utility Authority, Fort Defiance	(928) 729-6207 Ask for "consumer confidence report". Also available online at: <a href="http://www.ntua.com/ccr14.html">http://www.ntua.com/ccr14.html</a>
Surface water and groundwater quality	Water Quality Program, NNEPA Fort Defiance, Chinle Northern, Eastern Western	(928) 871-7185 (505) 368-1037 (928) 890-7599
Operation and maintenance of livestock water sources Locations of unregulated sources, livestock wells, windmills, earthen dams	Technical, Construction, and Operations Branch, NDWR, Fort Defiance Contact a district office:	To'hajilee: (505) 908-2740 Chinle: (928) 674-2210 Crownpoint: (505) 786-2396 Dilkon: (928) 657-8094 Fort Defiance: (928) 729-4003 Ganado: (928) 755-5971 Leupp: (928) 686-3289 Pueblo Pintada: (505) 655-5402 Shiprock: (505) 368-1146, 1062 Teec Nos Pos: (928) 656-3674 Tuba City: (928) 283-3170 Vanderwagon: (505) 778-5337
<b>Tuba City Dumpsite</b>		
Project lead	Western Regional Office, BIA, Phoenix, AZ	(602) 379-3723
BIA coordination	Division of Environmental and Cultural Resources, BIA, Central Office	(703) 390-6482
BIA community outreach	Navajo Regional Office, BIA, Gallup, NM	(505) 863-8285
Hopi Tribal water	Water Resources Program, Kykotsmovi, AZ	(928) 734-3712
Remedial investigation and feasibility study oversight	Region 9 Superfund Program, USEPA, San Francisco, CA	(800) 231-3075 (toll free)
Navajo Nation Solid Waste Act	Resource Conservation and Recovery Program, NNEPA, Window Rock	(928) 871-7816



 Red Water Pond Road Community Association sign, near the NECR site.

Northeast Church Rock and Kerr-McGee  
Quivira Mine Sites

Community Involvement Plan  
2016

