



# Tuba City, Arizona, Disposal Site **COMMUNITY INVOLVEMENT PLAN**



U.S. DEPARTMENT OF ENERGY OFFICE OF LEGACY MANAGEMENT



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## SECTION 1: OVERVIEW

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) developed this *Community Involvement Plan* (CIP) to facilitate communication and encourage community involvement within Navajo Nation and Hopi communities surrounding the Tuba City, Arizona, Disposal Site. LM will use the community involvement activities outlined in this plan to ensure that community members are informed and provided opportunities to be involved.

LM plans to support public awareness of the Tuba City site by:

- Informing the public about current and planned activities related to the site.
- Educating the public about site activities.
- Presenting information to correct misperceptions about the site.
- Providing public access to site information, reports, and other documents.
- Promoting use of the LM website as a source of information.
- Participating in Navajo Nation Fairs, STEM events and community events.

LM will foster communication with Tuba City site stakeholders by:

- Participating in regular meetings with stakeholders.
- Sharing information.
- Remaining open to all input and suggestions.

Multiple information sources were used to develop this plan, including community interviews, activities currently being performed at the site, site files, and community meeting records.



Office of Legacy Management Presentation to Dine' Uranium Remediation Advisory Council, May 2019



## SECTION 2: SITE OVERVIEW

### 2.1: HISTORY

Rare Metals Corporation of America and its successor, El Paso Natural Gas Company, operated a uranium mill at the Tuba City site between 1956 and 1966. During 10 years of operation, the mill processed approximately 800,000 tons of uranium ore. Milling operations created low-level radioactive mill tailings. The tailings were conveyed in slurry from the mill to a nearby tailings impoundment. The mill’s tailings impoundment and evaporation ponds covered a 55-acre area, and windblown tailings affected an additional 250 acres northeast of the mill site.

DOE began site surface remedial action in 1988. All uranium mill tailings from the on-site piles, debris from demolished mill buildings, and windblown tailings were moved and stabilized in an on-site engineered disposal cell. The primary reason for stabilizing and covering the tailings and other mill-related debris was to reduce the radon exposure risk. DOE completed surface remediation in 1990.

Handling waste created during mill operations resulted in contaminated groundwater in the Navajo aquifer. The primary source of contamination is water that drained from the unlined tailings impoundment and process ponds and infiltrated into the subsurface. Groundwater contaminants with concentrations that exceed standards in Title 40 *Code of Federal Regulations*, Part 192 (40 CFR 192), “Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings,” are molybdenum, nitrate, selenium, and uranium. High levels of sulfate, total dissolved solids, and chloride are also present in the groundwater. Although these constituents are not regulated in 40 CFR 192, their concentrations in groundwater are high enough to cause concern, and restoration goals were established (in collaboration with cooperating tribal agencies) for comparison to monitoring results.



Surface remediation was completed by DOE in 1990 at the former Rare Metals Corporation mill site (photo taken circa 1960)

## 2.2: SITE DESCRIPTION AND LOCATION



*Location of the Tuba City Disposal Site*

The Tuba City site is within the Navajo Nation and in close proximity to the Hopi Reservation. The site is approximately 5 miles east of Tuba City and 85 miles northeast of Flagstaff, Arizona. Land near the site is used for grazing; adjacent land was used for dry and irrigated farming, and historically, rural residential purposes. There is no known domestic, industrial, or agricultural groundwater use from the contaminated region of the aquifer within the site. Nearby residences receive water from the Navajo Tribal Utility Authority. This water comes from a well in the bedrock aquifer approximately 1.5 miles northwest (hydraulically upgradient) of the site.

The nearest surface water is located approximately 4,000 feet south of the site, where seeps are present along cliff bands that border Moenkopi Wash. Surface water flow in Moenkopi Wash is seasonal. Water from the wash may be used for stock watering and agricultural diversions by Navajo and Hopi residents. Early site characterization efforts and ongoing annual monitoring have found no contamination from former milling operations in the seeps in this area.



## SECTION 3: COMMUNITY BACKGROUND

### 3.1: COMMUNITY PROFILE

The community of Tuba City is located within the Navajo Nation and is governed by a local Navajo Nation government Chapter House. The Hopi village of Moenkopi is located southeast of Tuba City. According to the 2015 U.S. Census Bureau, Tuba City is the largest tribal community within the Navajo Nation with a population of 9,722 people in 2,360 households. Of these households:

- 52.9% include children under the age of 18.
- 49.0% are married couples living together.
- 26.0% have a single female head of household.
- 17.7% are not families.
- 15.1% are individuals living together.
- 2.3% are individuals living alone who are 65 years or older.
- The average household size is 4.0.
- The average family size is 4.5.

Racial makeup is:

- 79% Native American.
- 14.5% Hispanic or Latino.
- 4% Caucasian.
- 1% two or more races.
- 0.7% Asian or Pacific Islander.
- 0.5% other races.
- 0.3% Black or African American.

Age distribution of the population shows:

- 42.8% under the age of 18.
- 27.5% from 25 to 44.
- 15.7% from 45 to 64.
- 9.8% from 18 to 24.
- 4.3% are 65 or older.
- The median age is 23 years.

For every 100 females, there are 94 males. For every 100 females age 18 and over, there are 87 males.<sup>1</sup>

<sup>1</sup> American FactFinder. United States Census Bureau.



Tuba City's median household income is \$47,091, and the median income for a family is \$37,813. Males have a median income of \$29,280 versus \$26,855 for females. The per-capita income for the census-designated area is \$14,140. Approximately 23.1% of families and 28.2% of the population are below the poverty line, including 33.0% of those under age 18 and 44.8% of those aged 65 or over.<sup>2</sup>

Educational institutions in Tuba City include:<sup>3</sup>

- Tuba City High School.
- Greyhills Academy High School.
- Tuba City Boarding School.
- Tuba City Primary School.
- Tuba City Junior High School.
- Eagles Nest Intermediate School.
- Nizhoni Accelerated Academy.
- Diné College.

Education attainment (for a total population of 5,385, ages ranging from 25 and over):

- 231 are less than grade nine.
- 410 are grades nine to 12 (no diploma).
- 1,820 are high school graduates (includes equivalency).
- 1,122 have some college or associate's degree.
- 836 have an associate's degree.
- 496 have a bachelor's degree or higher.
- 470 have a graduate or professional degree.

The community of Moenkopi, Arizona, is located within Coconino County, adjacent to the southeast side of Tuba City, off U.S. Route 160. Founded in 1870, it is divided into the villages of Upper and Lower Moenkopi. According to the 2010 U.S. Census Bureau, Moenkopi has a population of 964 people in 253 households. Of these households:

- 24.9% include children under the age of 18.
- 37.2% are married couples living together.
- 33.2% have a single female head of household.
- 17.8% are not families.
- 14.2% are individuals living together.
- 5.6% are individuals living alone who are 65 years or older.
- The average household size is 3.81.
- The average family size is 4.24.

<sup>2</sup> American FactFinder. United States Census Bureau.

<sup>3</sup> Navajo Nation Division of Community Development, Navajo Chapter Profiles.



Racial makeup is:

- 98.5% Native American.
- 1.3% Hispanic or Latino.
- 0.8% Caucasian.
- 0.5% two or more races.
- 0.1% other races.

Age distribution of the population shows:

- 33.6% under the age of 18.
- 25.9% from 45 to 64.
- 19.9% from 25 to 44.
- 13.1% are 65 or older.
- 7.8% from 18 to 24.
- The median age is 31.7 years.

Moenkopi's median household income is \$49,762, and the median income for a family is \$65,083. Males have a median income of \$48,472 versus \$32,393 for females. The per-capita income for the census-designated area is \$16,364. Approximately 8.8% of families and 19.9% of the population were below the poverty line, including 8.4% of those under the age of 18 and 10.3% of those 65 and older.<sup>4</sup>

Educational institutions in Moenkopi include:

- Tuba City High School.
- Greyhills Academy High School.
- Tuba City Boarding School.
- Tuba City Primary School.
- Tuba City Junior High School.
- Eagles Nest Intermediate School.
- Nizhoni Accelerated Academy.
- Dine' College.

Education attainment (for a total population of 544, ages ranging from 25 to 64 years)

- 29 are less than a high school graduates.
- 301 are high school graduates (includes equivalency).
- 186 have some college or associate's degree.
- 28 have a bachelor's degree or higher.

<sup>4</sup> U.S. Census Bureau, 2011-2015 Community Survey 5-Year Estimates



### 3.2: COMMUNITY INVOLVEMENT

By 1990, all surface remediation, including disposal of residual radioactive material and debris, had been completed in compliance with U.S. Environmental Protection Agency (EPA) cleanup standards and regulations. DOE's involvement with the communities continues today with participation in technical meetings, open houses, and other outreach events. It is mission critical for LM to work and collaborate with affected communities to keep them informed of DOE activities, ensure their health and the environment are protected. In-person meetings are opportunities for LM to discuss and address stakeholder concerns relating to ongoing groundwater remediation activities, technical studies conducted on behalf of tribal agencies, and any potential community impacts.

Under a cooperative agreement, LM works with the Navajo Abandoned Mine Lands Reclamation/Uranium Mill Tailings Remedial Action (AML/UMTRA) Department to conduct long-term surveillance and maintenance at the four Navajo Nation sites in Mexican Hat, Utah; Shiprock, New Mexico; and Monument Valley and Tuba City, Arizona, to ensure community and environmental safety. LM also works with a variety of departments within the Navajo Nation government to help identify and protect cultural resources.

In 2007, Congress directed DOE and other federal agencies including EPA, Bureau of Indian Affairs, U.S. Department of Health and Human Services, U.S. Nuclear Regulatory Commission (NRC), and the Center for Disease Control (CDC) to work collaboratively with the Navajo Nation to address uranium issues on the Navajo Nation through a Five-Year Plan Community Outreach Network. Currently that plan is being reviewed and updated. It will be called the 10-Year Plan and is scheduled to be completed late 2020.

Along with the Five-Year Plan Community Outreach Network, a Tribal Intergovernmental Relations group, composed of LM, Hopi, and Navajo counterparts was created to elevate community outreach and engagement with the Hopi and Navajo communities. The group was designed to provide tribal information sharing and to understand the lines of communication between all tribal and government entities. Representatives from the Hopi Department of Natural Resources also attend the Navajo-Hopi-DOE Quarterly meetings and make routine visits to the Tuba City Disposal Cell.

In June 2016, LM and its contractor, opened an outreach office in Window Rock, Arizona. The Window Rock outreach office provides a place for the public to learn about LM and the sites on the Navajo Nation, the Navajo Nation Five-Year Plan, and the work being conducted to address uranium issues within the Navajo Nation. It provides community outreach and coordination assistance to LM, Navajo Nation leadership, Hopi Leadership, and coordinating tribal programs, and offers public affairs services throughout the Navajo Nation.

### 3.3: OUTREACH EVENTS

In recent years, LM has attended, participated, and/or led the following outreach events:

#### 2014

- December 5-6: Discovery Festival, Farmington, New Mexico.
- December 12-14: Monument Valley, Utah, Balloon Festival.



## 2015

- February 18: LM, Navajo, and Hopi Quarterly Meeting and Technical Exchange.
- March 24-26: Navajo Land Summit II, Twin Arrows, Arizona.
- May 1-2: Shiprock, New Mexico, Marathon.
- May 26: Developing Productive Tribal Government and Community Relations Training.
- May 28-29: San Juan Mining and Reclamation Conference (presentation), Telluride Mountain Village, Colorado.
- June 3-4: Traditional Law and Cultural Awareness Training, Grand Junction, Colorado.
- June 24: LM, Navajo, and Hopi Quarterly Meeting and Technical Exchange.
- July 2: Tuba City, Arizona, Chapter House Planning Meeting (presented to Chapter officials).
- September 23-25: LM Tribal Summit.
- September 27-30: National Association of Abandoned Mine Land Programs Conference, Santa Fe, New Mexico.
- October 15: EPA Senior Leadership Meeting at Navajo Nation President's Office, Window Rock, Arizona.
- October 15-18: Western Navajo Nation Fair, Tuba City, Arizona.
- October 16-17: Discovery Festival, San Juan, New Mexico.
- October 27: LM, Navajo, and Hopi Quarterly Meeting and Technical Exchange.
- October 28: Navajo Five-Year Plan Outreach Network Meeting.
- November 2: Oljato, Utah, Chapter House Planning Meeting (presented to Chapter officials).
- December 6: Shiprock, New Mexico, Regular Chapter House Meeting (presented to the public).
- December 4-6: Monument Valley, Utah, Balloon Festival.

## 2016

- February 17: LM, Navajo, and Hopi Quarterly Meeting and Technical Exchange.
- February 18: Tuba City, Arizona, Technical Presentations.
- March 9-12: National Environmental Justice Conference and Training Program, Washington, D.C.
- March 19: Western Agency Chapter Meeting.
- March 29-31: Navajo Division of Natural Resources Summit, Flagstaff, Arizona.
- April 5: Tuba City, Arizona, Site Tour for Regulators and Agency Officials.
- April 6: Tuba City, Arizona, Public Open House and Scoping Meeting.
- April 7: Mexican Hat, Utah; and Monument Valley, Arizona, Site Tours for Regulators and Agency Officials.
- April 8: Navajo Five-Year Plan Outreach Network Meeting, Monument Valley, Utah.
- April 9: Public Open House at Monument Valley, Utah.
- August 24: LM, Navajo, and Hopi Quarterly Meeting and Technical Exchange.
- August 30-September 1: Citizen Participation Training.
- September 6-11: 70th Annual Navajo Nation Fair, Window Rock, Arizona.
- September 27-October 2: Northern Navajo Nation Fair, Shiprock, New Mexico.



- October 7-8: Discovery Festival, San Juan, New Mexico.
- October 13-16: Western Navajo Nation Fair, Tuba City, Arizona.
- October 17-21: Radiation 101 Training.
- October 21: Tuba City, Arizona, Open House and Public Site Tour.
- November 15-16: LM, Navajo, and Hopi Quarterly Meeting and Technical Exchange.
- November 17-19: Monument Valley, Utah, Balloon Festival.
- December 9: Shiprock, New Mexico, Christmas Parade of Lights.

### 2017

- January 24 and 26: Presented with Navajo Nation AML/UMTRA at Diné College Campuses in Tsaile, Arizona; Shiprock, New Mexico.
- January 25: Window Rock, Arizona Open House with Navajo Nation Council Delegates.
- February 27: Governance Conference, Albuquerque, New Mexico.
- February 27: Health Education and Human Services Committee Meeting, Window Rock, Arizona.
- March 1: LM, Navajo, and Hopi Quarterly Meeting and Technical Exchange, Flagstaff, Arizona.
- March 24: Navajo Five-Year Plan Outreach Network Meeting, Window Rock, Arizona; Shiprock, New Mexico.
- March 25: Shiprock, New Mexico, Fun Run and Site Tour.
- April 11: Eastern Agency Abandoned Uranium Mines (AUMs) Open House, Gallup, New Mexico.
- April 12: Navajo Utah Commission Presentation, Mexican Water, Utah.
- April 15: Tuba City, Arizona, Site Tour for Shonto Middle School Students.
- April 27-28: Tuba City, Arizona, Site Tour for Tuba City Middle School Students.
- May 1: Navajo Utah Commission Presentation, Window Rock, Arizona.
- May 8-12: LM Director Navajo Nation Uranium Mill Tailings Radiation Control Act Site Visit, Arizona, Colorado, New Mexico, Utah.
- July 24-26: LM, Navajo, and Hopi Quarterly Meeting, Grand Junction, Colorado.
- July 20-22: Youth Day at the Boys and Girls Club and Parade, Crownpoint, New Mexico.
- September 5-10: 71st Annual Navajo Nation Fair, Window Rock, Arizona.
- September 21-23: American Indian Science and Engineering Society Conference, Denver, Colorado.
- October 5-10: Northern Navajo Nation Fair, Shiprock, New Mexico.
- October 12-15: Western Navajo Nation Fair, Tuba City, Arizona.
- October 18-19: Tuba City, Arizona/Moenkopi Open House and Site Tour.
- November 7-8: LM, Navajo, and Hopi Quarterly Meeting, Shiprock, New Mexico.
- November 15-17: Navajo Nation Division of Natural Resources Summit, Flagstaff, Arizona.
- November 17-18: Monument Valley Balloon Festival, Monument Valley, Utah.
- December 4: Keshmish Tree Lighting Ceremony, Window Rock, Arizona.



## 2018

- January 3: Oljato, Utah, Chapter House Planning Meeting (presented to Chapter officials).
- January 7: Oljato, Utah Regular Chapter House Meeting (presented to the public).
- January 8: Kayenta, Arizona, Kayenta Township Meeting (presented to the commission and public).
- January 25: Dine' Uranium Remediation Advisory Commission (DURAC) Meeting, Tse Bonito, New Mexico.
- January 30: Coconino County Supervisor Meeting, Flagstaff, Arizona.
- February 2: Dennehotso, Arizona, Chapter House Planning Meeting (presented to Chapter officials).
- February 10: Navajo YES Lower Colorado Marathon AUM/UMTRA Outreach, Cameron, Arizona.
- February 11: Dennehotso, Arizona, Regular Chapter House Meeting (presented to public).
- February 2018: Navajo Nation Governance Conference.
- March 7-8: LM, Navajo, Hopi Quarterly Meeting and Technical Exchange.
- March 12: Halchita and Kayenta Township meetings.
- March 14: STEM Event in Shiprock (9th to 12th grades), in Shiprock, New Mexico.
- April 14: Mexican Hat, Utah, Open House and Site Tour.
- April 15: Monument Valley, Arizona, Open House and Site Tour.
- September 3-9: Navajo Nation Fair, Window Rock, Arizona.
- October 4-7: Northern Navajo Nation Fair, Shiprock, New Mexico.
- October 10-12: Western Navajo Nation Fair, Tuba City, Arizona.

## 2019

- Jan. 24: STEM-sation Event, Pinon High School, Pinon, Arizona.
- Jan.24: DURAC Meeting at Sanders Chapter in Sanders, Arizona.
- March 8: Tuba City Site Tour w/Chris Yazzie & U of A students, Tuba City, Arizona.
- March 19: Scoping Meeting for Church Rock Uranium Mine, Gallup, New Mexico.
- March 27: DURAC Tour of Ambrosia Lake, Ambrosia Lake, New Mexico.
- March 28: STEM-sation Event, Window Rock High School, Fort Defiance, Arizona.
- March 28: DURAC Meeting at Navajo Technical University, Crownpoint, New Mexico.
- April 10: STEM-sation Event at Thoreau High School, Thoreau, New Mexico.
- April 17: Wingate High School Career Fair, Fort Wingate, New Mexico.
- April 22: Nuclear Nation Film Fest, Gallup, New Mexico.
- April 24-25: Dine' College Annual STEM Fest, Tsaille, Arizona.
- April 26: STEM-sation Event, Ganado High School, Ganado, Arizona.
- May 3-4: Shiprock Marathon Outreach, Shiprock, New Mexico.
- May 15: Tuba City Site Tour for DURAC members, Tuba City, Arizona.
- May 16: DURAC Meeting in Tuba City, Arizona.



- June 7: STEM-sation Event, Shiprock High School, Shiprock, New Mexico.
- June 7: Water Purification Unit & Info Demo w/Chris Yazzie, Dine' College, Tsaile, Arizona.
- June 13-Laguna Summer Youth Presentation w/LM, Laguna, New Mexico.
- June 19-21: Navajo Nation Division of Natural Resources Conference, Twin Arrows Navajo Casino Resort, Flagstaff, Arizona.
- June 22: Community Outreach Network Uranium 101 Workshop, Mariano Lake Chapter House, Mariano Lake, New Mexico.
- July 10: Community Outreach Network Uranium 101 Workshop, Cove Chapter House, Cove, New Mexico.
- July 13: 40th Annual Uranium Tailings Spill Commemoration, Churchrock, New Mexico.
- July 1: DURAC Meeting at Chilchinbeto Chapter, Chilchinbeto, Arizona.
- July 25: Eastern Navajo Fair "Youth Day" Outreach, Crownpoint, New Mexico.
- July 27: Eastern Navajo Fair Parade/Fair, Crownpoint, New Mexico.
- August 22: 1st DOE Shiprock Environmental Assessment-Evaporative Pond, Shiprock, New Mexico.
- Sept. 5: Navajo Nation Fair "Kids Day" Outreach, Window Rock, Arizona.
- Sept. 6-7: Navajo Nation Fair Parade/Fair, Window Rock, Arizona.
- Sept 11: Informal Meeting with Shiprock Stakeholders and AML staff regarding the Shiprock Environmental Assessment.
- Sept 19: DURAC Meeting in Aneth, Utah.
- Sept. 21: 2nd DOE Shiprock Environmental Assessment-Evaporative Pond, Shiprock, New Mexico.
- Sept. 27: Cameron Community Days, Cameron, Arizona.
- Oct. 3-5: Northern Navajo Nation Fair, Shiprock, New Mexico.
- Oct.10-12: National AISES Conference, Milwaukee, Wisconsin.
- Oct. 10-13: Western Navajo Fair, Tuba City, Arizona.
- Nov. 16: Monument Valley Marathon, Monument Valley, Utah.
- Nov. 21: DURAC Meeting in Kayenta, Arizona.
- Nov. 26-28: Dine' College STEM Fest, Tsaile, Arizona.
- Dec. 7: Shiprock Christmas Parade of Lights, Shiprock, New Mexico.
- Dec. 21: Cove Chapter Christmas Dinner & Parade, Cove, New Mexico.

### 2020

- Jan. 9: District 12 Grazing Committee Meeting, Shiprock Chapter House, Shiprock, New Mexico.
  - Jan. 20: Community Education Forum: Impacts of Uranium Mining, Sports Complex, Window Rock, Arizona.
  - Jan. 23: DURAC Meeting in Shiprock, NM at the Shiprock Chapter House.
  - Jan. 23: STEM-sation Outreach Event at Tohatchi High School in Tohatchi, New Mexico.
  - Feb. 20: STEM-sation Outreach Event at Sanders High School in Sanders, Arizona.
- \*Navajo Nation in-person Outreach Activities beginning in March were cancelled due to COVID-19 pandemic



### 3.4: OUTREACH MATERIALS

LM provides informational materials at outreach events, including:

- Site fact sheets.
  - Mexican Hat, Utah, Disposal Site.
  - Monument Valley, Utah, Processing Site.
  - Shiprock, New Mexico, Disposal Site.
  - Tuba City, Arizona, Disposal Site.
  - Tuba City Uranium Ore Deposit Formation in the Tuba City, Arizona, Area Fact Sheet.
  - Window Rock, Arizona, Navajo Nation Community Outreach Network Office Fact Sheet.
- Community information sheets.
  - Mexican Hat, Utah, Disposal Site.
  - Monument Valley, Utah, Processing Site.
  - Shiprock, New Mexico, Disposal Site.
  - Tuba City, Arizona, Disposal Site.
- Energy Ant coloring book.
- Gamma Goat coloring book.
- LM overview brochure.
- LM Sites on Navajo Nation Land brochure.
- LM Strategic Plan brochure.
- Uranium and Radiation on the Navajo Nation Agency Resource List.
- LM Video detailing the work conducted on the Navajo Nation.
- Window Rock, Arizona, Outreach Office map.
- Working with the Navajo Nation fact sheet.
- Uranium and Radiation on the Navajo Nation Resource List 2018.
- Community Outreach Network.
  - Uranium and Radiation on the Navajo Nation Resource List.
  - Information Sheet.



## SECTION 4: COMMUNITY CONCERNS

Through a series of informal interviews and discussions, community meetings, and open houses, tribal community members and officials (tribal programs staff, Navajo Chapter representatives, and Moenkopi Village Council members) from the Navajo Nation and the Hopi village of Moenkopi expressed the following concerns related to the Tuba City site:

- Uranium contamination in groundwater making its way to Moenkopi Wash.
- Uranium-contaminated groundwater at the site affecting the tribal community's drinking water.
- Uranium-contaminated groundwater at the site affecting livestock wells located near the site (southern and northern wells).
- Disposal cell emitting dangerous levels of radiation.
- The site is contributing to cancer within the tribal communities.
- Radioactive dust is blowing off the site and into the communities.
- The former housing for the site is contaminated.
- Weekday evening meetings are a challenge to attend.
- There needs to be more outreach to the Hopi village of Moenkopi.
- Confusion about the LM "Highway 160 site" and the Tuba City open dump.

### 4.1: RESPONSE TO COMMUNITY CONCERNS

LM has conducted the following community involvement activities directly responding to community concerns:

- **April 6, 2016, Open House.** Materials provided to the community included site fact sheets detailing remediation activities related to groundwater, sampling and monitoring, and disposal cell design. LM technical staff were present to answer community questions and concerns.
- **April 6, 2016, National Environmental Protection Act (NEPA) Scoping Meeting in Tuba City, Arizona.** Scoping meeting held on water treatment options for the Tuba City site. Lessons learned include: engage community prior to hosting NEPA scoping meeting for in-depth dialogue on site activities, simplify technical slides for community understanding, ensure DOE participation at critical information points, and ensure that Navajo and Hopi translation providers are familiar with technical terms. Engagement plan will include timely outreach utilizing local media resources and local government chapter and village offices, and coordination with tribal governmental partners on pre-NEPA community meetings.
- **October 13-16, 2016, Western Navajo Nation Fair in Tuba City, Arizona.** Information provided included information sheets detailing cleanup activities at the Tuba City site related to groundwater, sampling and monitoring, and disposal cell design. LM technical staff were present to answer community questions and concerns. Staff from the Navajo AML/UMTRA Department were present to provide information on their coordination with LM, and their work to address AUMs within the Navajo Nation. Staff from the Birth Cohort Study were present to provide information on their findings related to the health impacts of uranium.
- **October 28, 2016, Open House and Site Tour.** The open house provided an opportunity for community members to learn about remediation activities at the site, and to learn about the disposal



cell design. It was also an opportunity for Five-Year Plan member agencies to provide information on their work related to the site. The CDC Agency for Toxic Substances and Disease Registry EPA Region 9, the Navajo AML/UMTRA Department, and the Navajo Nation AUM Environmental Response Trust participated in the open house. The site tour provided community members an opportunity to see and learn about the remediation activities, including groundwater monitoring, the use of the evaporation pond to remove contamination from groundwater, and the design and construction of the disposal cell.

- **March 2, 2017, LM, Navajo and Hopi Quarterly Meeting and Technical Exchange.** A site tour was conducted for Navajo representatives from the Navajo AML/UMTRA Department, including the LM director, public information officer, Navajo EPA hydrologist, the director of the Hopi Tribe Department of Natural Resources, and three Moenkopi village council representatives.
- **October 12-15, 2017, Western Navajo Nation Fair in Tuba City, Arizona.** Information provided included information sheets detailing cleanup activities at the Tuba City site related to groundwater, sampling and monitoring, and disposal cell design. Staff from the Navajo AML/UMTRA Department was present to provide information on their coordination with LM, and their work to address AUMs within the Navajo Nation. Staff from the Birth Cohort Study were present to provide information on their findings related to the health impacts of uranium. Navajo EPA and U.S. EPA staff were present to inform the community of AUMs and the cleanup process for these mines.
- **October 18-19, 2017, Tuba City, Arizona/Moenkopi Open Houses and Site Tours.** Materials provided to the community included site fact sheets detailing remediation activities related to groundwater, sampling and monitoring, and disposal cell design. LM technical staff were present to answer community questions and concerns. Also, Hopi officials were present to ask questions regarding concerns related to the Moenkopi Wash. Staff from the Navajo AML/UMTRA Department was present to provide information on their coordination with LM, and their work to address AUMs within the Navajo Nation.
- **November 7-8, 2017, LM, Navajo, and Hopi Quarterly Meeting, Shiprock, New Mexico.** LM staff, Navajo representatives from the Navajo AML/UMTRA Department, the director of the Hopi Tribe Department of Natural Resources, and Shiprock Chapter President Chili Yazzie were present for this meeting.
- **Navajo-Hopi-DOE Quarterly Meetings,** The Department of Energy Office of Legacy Management meets quarterly with representatives from the Navajo Abandoned Mine Lands Department, Hopi Office of Mining and Mineral Resources, Department of National Regulatory Commission, Navajo Nation Environmental Protection agency and Office of the President and Vice President of the Navajo Nation. The meetings are hosted on a rotating basis between the partnering agencies. Each agency presents technical and outreach topics and discusses ongoing work on the Navajo and Hopi reservations.
- **May 19, 2019, Dine' Uranium Remediation Advisory Commission (DURAC).** LM Site Manager Mark Kautsky gave a presentation to attending commission members at the at the Tuba City Chapter House about the Tuba City Disposal Cell.
- **July 10, 2019. Hopi Leadership** from the Upper and Lower Villages of Moenkopi requested and attended a presentation from LM and LMS at the Upper Village meeting house.
- **September 27-28, 2019.** LMS participated in the 11th Annual Cameron Community Celebration in Cameron, Arizona. The event was widely attended by surrounding area community members. LMS was able to provide info on the Tuba City Disposal Cell and outreach activities and partnered with representatives from the Navajo EPA to share information on the Community Outreach Network and Uranium 101 presentations. LM and LMS plan to attend this event annually due to the positive reception at the event.



- **October 15, 2019**, LM, LMS, and Hopi officials met at the Tuba City disposal cell for a tour of the site, overview of the groundwater compliance project, overview of the contaminant plume areal extents, and a discussion on a water delivery system from Black Mesa to Moenkopi/Tuba City system, as a Groundwater Compliance Action Plan alternative being proposed by Hopi officials. Hopi officials are seeking support from various native and nonnative government entities including DOE for a project that would convey potable water from wells at the closed Black Mesa coal mine, through an existing pipeline (previously used for coal slurry) to Tuba City and the Moenkopi Village communities.
- **October 24, 2019**, LMS participated in a STEM-sation event at Tuba City High School. LMS staff from the disposal cell and members of Hopi Leadership participated in the event. A yo-yo demonstration was presented to all levels of the high school classes.
- **June 11 through July 30, 2020**, National Lab Network Collaboration Meetings: LM, LMS, subject matter experts from the National Lab Network, AML, Navajo EPA, NRC, and local government officials were invited to attend and participate in a series of eight meetings to evaluate, develop, and implement recommendations for site characterization and conceptual remedies. A stakeholder subgroup developed recommendations.

At each of these community involvement events, information was shared with the community about the status of the groundwater contamination plume, the construction of the disposal cell, and efforts to remove uranium from the groundwater, including the distillation treatment plant that is currently on safe standby. The LM site manager and staff provided information on the location and characteristics of the contamination plume, with the assurance that efforts will be made to prevent contamination from reaching Moenkopi Wash. Additional information was provided to inform tribal communities about the design and construction of the disposal cell, and the primary function of the cell cover, which is to prevent emissions of radon gas, a known carcinogen.

#### 4.2: SUMMARY OF COMMUNICATION NEEDS

Community members have said their communication needs should be addressed through meeting notices provided at the Tuba City Chapter House, published in local newspapers, and aired on KTNN (Navajo AM radio station), KGHR 91.3 (Public Radio operated by Greyhills Academy), and KUYI (Hopi FM radio station) stations, and in the Hopi village of Moenkopi. Tribal community members also expressed their desire to have public events held on non-payday weekends when community members are more likely to attend meetings, and to present and receive community feedback at Chapter planning meetings and Chapter meetings.



## SECTION 5: COMMUNITY INVOLVEMENT STRATEGY

The goal of this strategy is to facilitate communication between community members and LM, and to provide opportunities for meaningful and active involvement by Navajo and Hopi communities in Tuba City site activities. The strategy is based on feedback from community involvement interviews, previous community meetings, and comments received from local officials.

### 5.1: COMMUNITY INVOLVEMENT ACTIVITIES

#### 1. Information on current and proposed site activities

##### *Activity 1A: Present information at Tuba City Chapter meetings.*

Objective:	Present information regarding site activities as requested by stakeholders and as needed.
Method:	LM and LMS representatives will present an update at Tuba City Chapter meetings, and Moenkopi community meetings. Tools may include presentations, site information fact sheets, and the LM website address for detailed site information. Inform community members that the disposal cell is open to the public, and they are welcome to visit the site during working hours
Timing:	A minimum of four meetings a year

##### *Activity 1B: Conduct open houses and site tours.*

Objective:	LM site manager and staff will provide in-depth information to community members about site activities and the scientific and engineering rationale for activities.
Method:	Host open houses at community meeting locations (i.e., Chapter House, Moenkopi Legacy Inn, local high school). Conduct mid-morning site tours that will include maps detailing cell location; extraction and monitoring well placements; the evaporation pond; the contamination plume; and construction graphics of cell, pond, and wells.
Timing:	Once a year or per requested by stakeholders

#### 2. Timely outreach and information on community meetings, site open houses, and site tours.

##### *Activity 2A: Post flyers in public locations about upcoming community meetings, site open houses, and site tours.*

Objective:	Post information about community meetings, site open houses, and site tours.
Method:	Post meeting information at the Tuba City Chapter House public information board; U.S. Post Office; local businesses; and tribal, state, and federal offices.
Timing:	As needed



*Activity 2B: Advertise on local radio stations, tribal newspapers, and newsletters.*

Objective:	Provide public service announcements on community meetings, quarterly updates, site open houses, and site tours as needed.
Method:	Contact KTNN and KUYI, place information ads in the Navajo Times, Navajo-Hopi Observer, and in Hopi newsletters with information announcing upcoming community meetings, quarterly updates, site open houses, and site tours. Establish a site point-of-contact for follow-up purposes as needed.
Timing:	Fifteen days and five days prior to site meetings, open houses, and site tours

*Activity 2C: Mail informational post cards.*

Objective:	Mail informational postcards detailing upcoming community meetings, quarterly updates, site open houses, and tours as needed.
Method:	Collect physical mail and email addresses from community members during community meetings, quarterly updates, site open houses, and site tours for distributing information announcing upcoming community meetings, quarterly updates, site open houses, and site tours.
Timing:	Fifteen days prior to planned community meetings, quarterly updates, site open houses, and site tours.

**3. Make times and dates for site open houses and site tours more accessible for members of the community.**

*Activity 3A: Work with community leadership and community members to determine optimal date, time, and location for community meetings, site open houses, and site tours.*

Objective:	Determine the best time frame to conduct community meetings, site open houses, and site tours.
Method:	Poll community leaders and community members during Chapter meetings (engage with Chapter House coordinator to schedule) and outreach events to determine the best time frame for conducting community meetings, site open houses, and site tours. Coordinate community meetings with scheduled events and gatherings in the community. Explore developing regular hours at the site to provide tours to the public.
Timing:	Conducted during Chapter House updates, informal polling within the community.

**4. Address community concerns that contaminated groundwater plume will reach Moenkopi Wash and the community water system.**

*Activity 4A: Provide information on contaminated groundwater plume location and movement history.*



Objective:	Inform community about the site’s groundwater contamination, plume movement history, and the site’s hydrology and geology as needed.
Method:	LM site manager and technical staff presentations at community meetings, quarterly updates, site open houses, and site tours. Give presentations illustrating the location and depth of the contamination, plume movement history, site hydrology, and geology.
Timing:	Annually or requested by stakeholders.

**5. Address community concerns that radioactive waste is contributing to cancer in the community.**

*Activity 5A: Provide joint information and presentations from ATSDR, Indian Health Service, and LM on cancer, indeterminate causes for cancer, and site cleanup and monitoring activities reducing community’s exposure to radioactive waste.*

Objective:	Inform community of indeterminate causes of cancer. Provide information on site activities that reduce the community’s exposure to radioactive waste. Foster informational community dialogue involving multiple federal and tribal agencies and programs on community concern and identify health resources available to community members. The information can explain the lack of exposure pathways and the low-level nature of the tailings wastes if they are encountered. The key is increasing awareness and understanding of actual risks and how to personally mitigate or avoid them, such as: don’t access restricted water or use livestock water for drinking, stay out of mines, report suspicious areas to Navajo EPA or other agencies.
Method:	This discussion may be included in community meetings, Five-Year Plan agency meetings, quarterly updates, site open houses, and site tours, or it may be conducted at a community meeting designed to specifically address this community concern.
Timing:	Ongoing

**6. Address community recommendation that all outreach materials need to have a cultural connection to the community for better interpretation and understanding.**

*Activity 6A: Provide the site leads/site managers expertise on culturally appropriate outreach materials regarding the four former uranium mill processing sites. Provide Navajo and Hopi translation as needed.*

Objective:	Inform community about the site’s groundwater contamination, plume movement history, and the site’s hydrology and geology in all outreach materials, while also being culturally sensitive to community interpretation.
Method:	This discussion may be exchanged between all site leads and managers for the four former uranium processing sites, community members, tribal officials, and the Navajo Nation Community Outreach Network Office located in Window Rock, Arizona.
Timing:	Ongoing



5.2: COMMUNITY INVOLVEMENT ACTIVITIES TIME FRAME SUMMARY

Activity	Time Frame
Chapter House update meetings	Four times a year: as needed requested by stakeholders
Open houses and site tours	Annually or as needed requested by stakeholders
Announcements of meetings, open houses, and site tours	Distributed/published 15 days and five days prior to activity date(s)
Meetings to address community concerns related to cancer	To be determined



## APPENDIX A: LM REGIONAL CONTACTS

Site Manager	Bernadette Tsosie U.S. Department of Energy Office of Legacy Management 2597 Legacy Way Grand Junction, CO 81503 (970) 248-6550
Public Participation Specialist	Shawn Montgomery U.S. Department of Energy Office of Legacy Management 2597 Legacy Way Grand Junction, CO 81503 (970) 248-7666
Lead to Navajo Nation	Jennifer Grossheim Harris Navarro Research and Engineering Inc. 2597 Legacy Way Grand Junction, CO 81503 (970) 248-6281
Public Affairs Specialist	Alex Chambers 47562 State Highway 264 Suite C Window Rock, AZ 86515 (928) 810-2102
Community Outreach Network Coordinator	- VACANT - Legacy Management Support Contractor 47552 State Highway 264 Suite D Window Rock, Arizona 86515 (928) 810-2102
Site Lead	Peter Lemke Legacy Management Support Contractor 2597 Legacy Way Grand Junction, CO 81503 (970) 248-6103



## APPENDIX B: LOCAL OFFICIALS

Navajo Nation President	Jonathan Nez, Navajo Nation Office of the President P.O. Box 7440 Window Rock, AZ 86515 (928) 871-7000
Navajo Nation Vice President	Myron Lizer, Navajo Nation Office of the President P.O. Box 7440 Window Rock, AZ 86515 (928) 871-7000
Navajo Council Delegate	Otto Tso Council Delegate Navajo Nation Council P.O. Box 3390 Window Rock, AZ 86515 (928) 871-7160
Tuba City Chapter President	Gerald Keetso P.O. Box 727 Tuba City, AZ 86045 (928) 283-3284
Tuba City Chapter Vice President	Joetta Goldtooth P.O. Box 727 Tuba City, AZ 86045 (928) 283-3284
Navajo AML Reclamation/ UMTRA Department	Karen L. Bedonie, Department Manager III P.O. Box 1875 Window Rock, AZ 86515 (928) 871-6982
Navajo AML Reclamation/ UMTRA Department	Shine Salt, Public Information Officer P.O. Box 1875 (928) 871-7594 office (602) 680-9763 cell
Navajo Nation EPA	Valinda Shirley, Executive Director P.O. Box 339 Window Rock, AZ 86515 (928) 871-7692
Diné Uranium Remediation Advisory Commission (DURAC)	Nona Bashone, Executive Director P.O. Box 7440 Window Rock, AZ 86515 (928) 871-7186



## APPENDIX B: LOCAL OFFICIALS (CONTINUED)

Hopi Tribe	Norman Honie Office of Mining and Mineral Resources P.O. Box 123 Kykotsmovi, AZ 86039 (928) 734-7164
	Lewis Leslie Mining & Mineral Resources Program P.O. Box 123 Kykotsmovi, AZ 86039 (928) 734-7171
	Timonthy L. Nuvangyaoma, Chairman P.O. Box 123 Kykotsmovi, AZ 86039 (928) 734-3102
	Clark W. Tenakhungva., Vice Chairman P.O. Box 123 Kykotsmovi, AZ 86039 (928) 734-3112
	Cedric Kuwaninyaya, Community Service Administrator Upper Village of Moenkopi P.O. Box 1229 Tuba City, AZ 86045 (928) 283-8051
	Governor Leroy Sumatzkuku Upper Village of Moenkopi P.O. Box 1229Tuba City, AZ 86045 (928) 283-8051
	Clayton Honyumtewa, Director Department of Natural Resources P.O. Box 123 Kykotsmovi, AZ 86039 (928) 734-3601
	Lionel Salnimptewa Director, Water Resources Program the Hopi Tribe P.O.Box 123 Kykotsmovi, AZ 86039 (928) 734-3712



## APPENDIX C: ELECTED STATE OFFICIALS

Governor of Arizona	Doug Ducey, Office of the Governor 1700 West Washington Street Phoenix, AZ 85007 (602) 542-4331
State Senator	Jamescita Peshlakai, District 7 Arizona State Capitol Complex 1700 West Washington Street Phoenix, AZ 85007 (602) 926-5160  Kyrsten Sinema 317 Hart Senate Office Building Washington DC 20510 (202) 224-4521
State Representative	Wenona Benally, District 7 Arizona State Capitol Complex 1700 West Washington Street Phoenix, AZ 85007 (602) 926-5172
County Supervisor	Lena Fowler, Coconino County 219 E. Cherry Avenue Flagstaff, AZ 86001 (928) 679-7751



## APPENDIX D: ELECTED FEDERAL OFFICIALS

Senator	Mark Kelly (need contact information)
Senator	Kyrsten Sinema 413 Russell Senate Office Building Washington, DC 20510 (202) 224-4521
Representative	Tom O'Halleran 126 Cannon House Office Building Washington, DC 20515 (202) 225-3361



## APPENDIX E: ENVIRONMENTAL AND ACTIVE CITIZENS GROUPS

Southwest Research and Information Center	105 Stanford SE P.O. Box 4524 Albuquerque, NM 87106 (505) 262-1862
Forgotten People CDC	P.O. Box 1289 Tuba City, AZ 86045 (928) 640-6110
Diné C.A.R.E. (Citizens Against Ruining our Environment)	10A Town Plaza, Suite 138 Durango, CO 81301 (970) 759-1908
Sacred Water Speaks (To’Nizhoni Ani)	P.O. Box 657 Kykotsmovi, AZ 86039 (505) 228-7085
Black Mesa Water Coalition	408 E. Route 66 Flagstaff, AZ 86002 (928) 213-5909
Haul No!	<a href="http://www.haulno.org">www.haulno.org</a> <a href="mailto:stopcanyonmine@gmail.com">stopcanyonmine@gmail.com</a>
Dine’ No Nukes	Leonna Morgan <a href="mailto:contact@dinenukes.org">contact@dinenukes.org</a> <a href="mailto:radmonitoringproject@gmail.com">radmonitoringproject@gmail.com</a>



## APPENDIX F: MEDIA CONTACTS

Navajo Times	Duane Beyal, Editor 928-871-1136 <a href="mailto:editor@navajotimes.com">editor@navajotimes.com</a>
Navajo/Hopi Observer	Loretta McKenney, Managing Editor (928) 635-4426 <a href="mailto:lmckenney@williamsnews.com">lmckenney@williamsnews.com</a>
Associated Press	Felicia Fonseca, Reporter
AM Radio–KTNN	Public Service Announcements (928) 871-3553 <a href="mailto:Webmaster@ktnnonline.com">Webmaster@ktnnonline.com</a>
FM Radio–KUYI	Public Service Announcements (928) 738-5530 <a href="mailto:Info@kuyi.net">Info@kuyi.net</a>



## APPENDIX G: MEETING LOCATIONS

Tuba City Chapter House  
P.O. Box 727  
Tuba City, AZ 86045  
(928) 283-3284

Moenkopi Legacy Inn and Suites  
1 Legacy Lane  
Tuba City, AZ 86045  
(928) 283-4500

Tuba City High School Gymnasium  
Warrior Drive  
Tuba City, AZ 86045  
(928) 283-1050

Upper Village of Moenkopi Community Center  
P.O. Box 129  
Tuba City, AZ 86045  
(928) 283-8051



## APPENDIX H: OTHER LOCAL RESOURCES

Tuba City AML Reclamation Program  
Raymond Tsingine, Program Manager II  
25 South Main Street  
P.O. Box 730  
Tuba City, AZ 86045  
(928) 283-3188