



Uranium Mine and Mill Cleanup

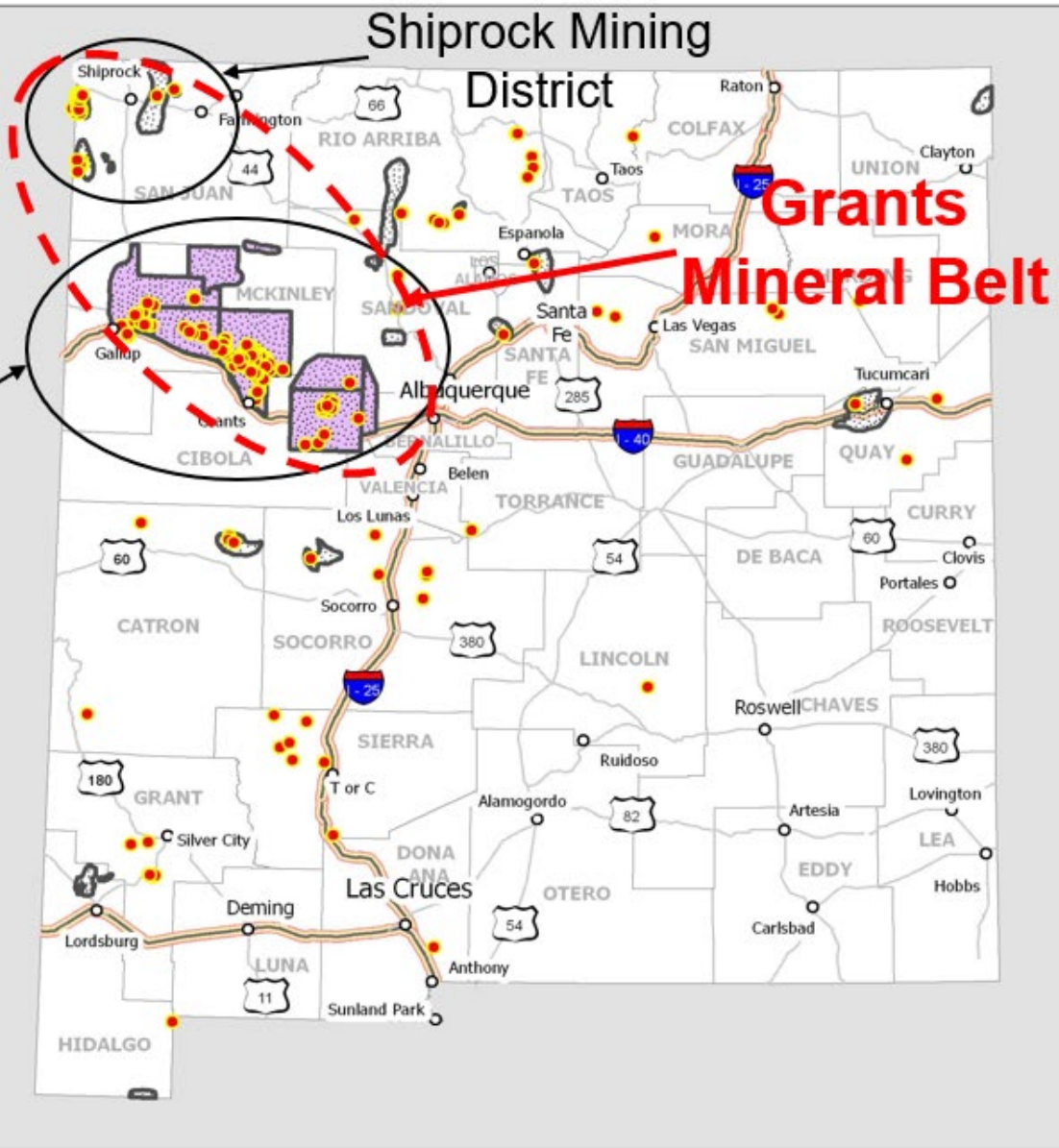
Radioactive & Hazardous Materials Committee
Meeting
December 1, 2023

MIORI HARMS – URANIUM RECLAMATION COORDINATOR, NMED

CLINT CHISLER – URANIUM RECLAMATION COORDINATOR, EMNRD

New Mexico
Grants Uranium
Belt and State-wide
Distribution of
Abandoned
Uranium Mines
(AUM)

Grants Mining
District



**Grants
Mineral Belt**

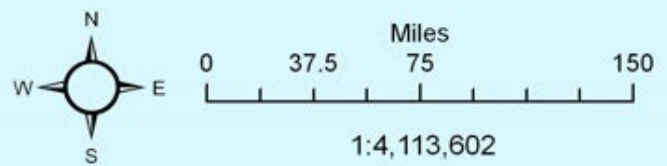
Federal: 66
State: 7
Private: 76
Tribal: 96
Mixed: 16

Total: 261

Created by New Mexico
Mining & Minerals Division
for NM Environment Dept,
January 2009

North American Datum 83
Universal Transverse Mercator
NM Zone 13

Data:
Mining & Minerals Div. (NM Energy, Minerals & Nat. Res. Dep.),
New Mexico Bureau of Geology and Mineral Resources;
New Mexico Resource GIS Program (<http://rgis.nm.edu>)



2023 Annual Report

NMED Activities

- ▶ Strategic Plan
- ▶ Centralized Data Repository (Database & Dashboard)
- ▶ Consultation and Coordination
 - ▶ DOE, EPA, NRC, BLM, USFS, Communities, NGO, Tribal
- ▶ Workforce Development
 - ▶ Economic Development Dept.
 - ▶ Dept. of Workforce Solutions
 - ▶ Industry
 - ▶ Intern hiring
- ▶ Reclamation Activities on State Permit Sites

EMNRD Activities

- ▶ Strategic Plan
- ▶ Centralized Data Repository (Database & Dashboard)
- ▶ Consultation and Coordination
 - ▶ DOE, EPA, NRC, BLM, USFS Communities, NGO, Tribal
- ▶ Reclamation Activities on State Permit Sites
- ▶ Abandoned Uranium Mine Field Site Visits
- ▶ Technical Data Review & Site Assessment

A collaborative project with



And



For Dashboard Instructions: [Click Here](#)
For Data Sources: [Click Here](#)

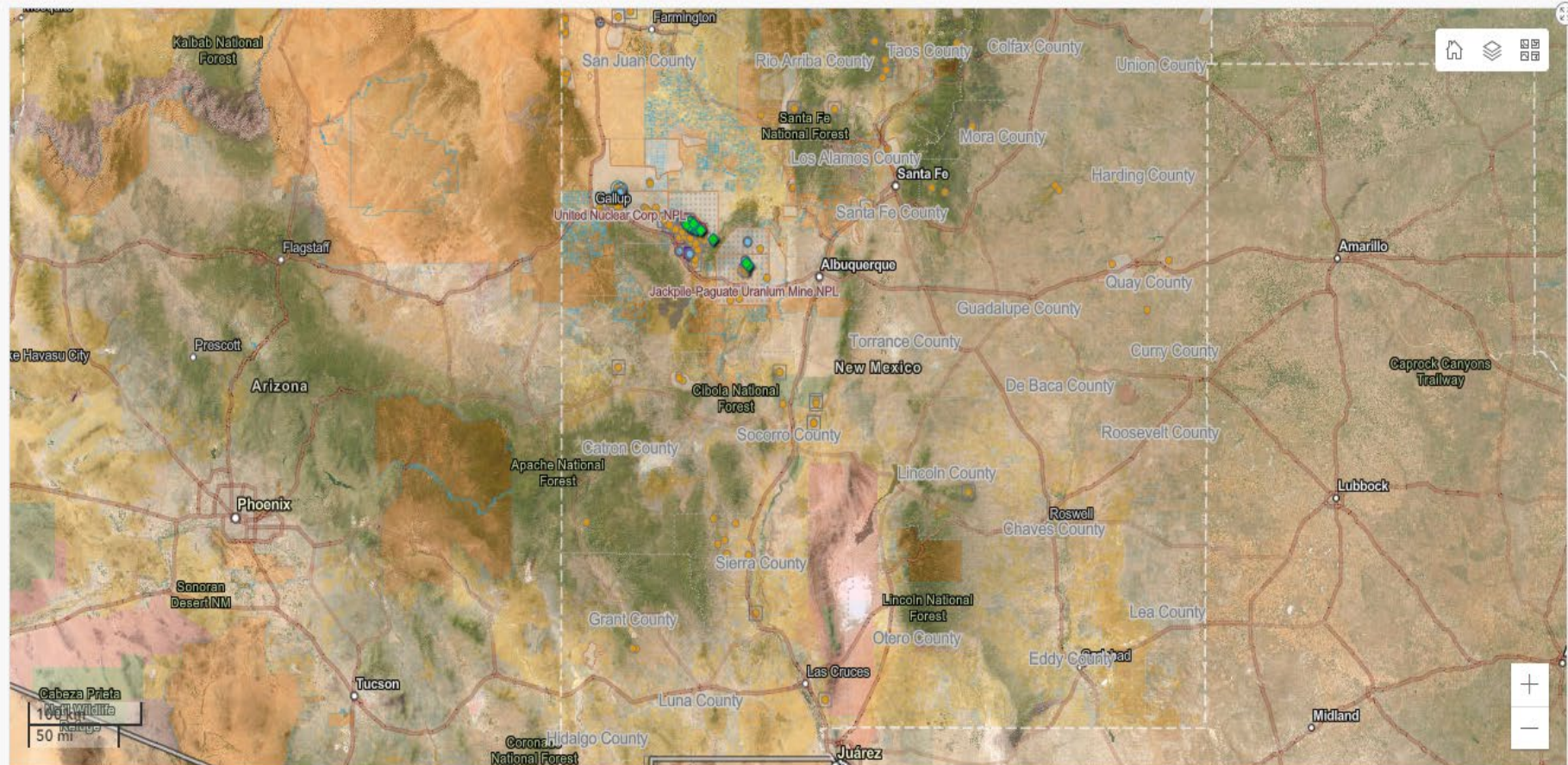
This map shows locations of former uranium mine and mill sites in NM.

- Detailed information is shown by clicking on a point on the map. The pop up menu will display data about map features.
- Zoom or pan the map to see number mines and mills in the extent view.
- Charts can be expanded for a better view; click on the circle in upper right of the chart rectangle. To minimize, click on the circle again.

More Information

- What is a DRUM Site? [Click Here](#)
- What is a Tronox Mine? [Click Here](#)
- What is a Superfund Site? [Click Here](#)
- What is the NPL? [Click Here](#)

No warranty or representation is made, expressed or implied, about the accuracy,



Earthstar Geographics | BLM Energy, Minerals & Realty Management | Distributed by EPA Region 6 Superfund. | New Mexico State University, Esri, HERE, Garmin, FAO, NOAA, USGS, Bureau of Land Management, EPA, NPS Powered by Esri

Former Uranium Mines

261

Number of features in extent shown.

Former Uranium Mills

8

Number of features in extent shown.



Map Legend

- Formerly Operating Uranium Mine Under a Reclamation Permit (Green diamond)
- Formerly Operating Uranium Mill (Blue circle)
- Formerly Operating Uranium Mine (Yellow circle)
- Formerly Operating Uranium Mine Superfund National Priorities List (NPL) Sites (Purple square)
- Formerly Operating Uranium Mine Under Tronox Settlement (Red circle)
- EPA Region (Red circle for Region 6, Blue circle for Region 9)
- Formerly Operating Mine Under Defense Related Uranium Mine Program (White square)
- Uranium Superfund Site Boundaries (White square)

Map Legend 16

2023 Annual Report

Other Coordinating State Agencies

- ▶ New Mexico Dept. of Cultural Affairs
- ▶ New Mexico Dept. of Game and Fish
- ▶ New Mexico Dept. of Health
- ▶ New Mexico Dept. of Transportation
- ▶ New Mexico Dept. of Workforce Solutions
- ▶ New Mexico Dept. of Indian Affairs
- ▶ New Mexico Economic Development Dept.
- ▶ The Office of Natural Resources Trustee
- ▶ The Office of the State Engineer
- ▶ The State Land Office

Section 27 Temporary Repository



2023 Annual Report

NMED Spending

- ▶ Senate Bill 1 (2022) Section 15 I(2) - for planning, administration and oversight of uranium mine remediation and cleanup
 - ▶ 91% expended
 - ▶ Budget: \$360,000.00. Expensed: \$327,534.72
 - ▶ Recurring appropriation, transitioned to General Fund in FY24
- ▶ Senate Bill 1 (2022 SS), Section 6, G(4) - for planning, administration and oversight of uranium mine remediation and cleanup
 - ▶ 100% expended
 - ▶ Budget: \$50,000.00. Expensed: \$50,000.00
 - ▶ Recurring appropriation, transitions to General Fund in FY24
- ▶ House Bill 2 (2022) Section 5 (90) - Uranium Mine Special
 - ▶ 0% expended. Fund extension was requested and approved.
 - ▶ 100% expenditure is anticipated before June 30, 2024
 - ▶ Budget: \$250,000.00
 - ▶ Non-recurring appropriation
- ▶ Of the funds used, a total of 92% of the funds were used in FY23 to support uranium mine reclamation efforts, including expenditures for personnel, contracts, equipment, vehicles, travel, training, and outreach.

EMNRD Spending

- ▶ Senate Bill 1 (2022 SS) Section 14 (C)(6) for the planning, administration, and oversight of uranium reclamation and cleanup.
 - ▶ 91% expended
 - ▶ Budget: \$180,000. Expensed: \$165,180.19
 - ▶ Recurring appropriation, transitioned to General Fund in FY24
- ▶ A total of 91% of the funding available was used in FY23 to support uranium mine reclamation efforts, including expenditures for personnel, equipment, a vehicle, travel, and training.
- ▶ Contractor-related spending will begin in FY24.
- ▶ Currently hiring two contractors to review and update the data repository and assess the amount and needs of “neglected” abandoned uranium mines.

2023 Annual Report

Uranium Mine Reclamation Revolving Fund

- ▶ No money was appropriated for this fund, therefore the balance in the Uranium Mine Reclamation Revolving Fund remains at zero dollars.
- ▶ In the future, funds received into the account may be used for site assessments, safeguarding, surface reclamation, and groundwater remediation, where appropriate.
- ▶ Cleanup can only occur with funds from this account.



Erosion at J.J. No. 1 Mine



St. Anthony Mine Pit 1

MMD Permitted Mine Sites

- ▶ Mt. Taylor Mine
- ▶ St. Anthony Mine
- ▶ Section 27 Mine
- ▶ Section 12 Mine
- ▶ Old Stope Leach Mines
- ▶ J.J. No. 1 Mine

Section 12 Mine

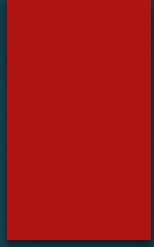


NMED Permitted Mine Sites

- ▶ J.J. No. 1 Mine (Abatement)
- ▶ Mt. Taylor Mine (DP and Abatement)
- ▶ Rio Algom and associated Old Stope Leach Mines (DPs and Abatement)
- ▶ Section 27 Mine (Abatement)
- ▶ St. Anthony Mine (Abatement)



Section 2 Radon and Weather Station



Department of Energy DRUM (Defense Related Uranium Mines) Program

- ▶ Verification & Validation (V&V) work on Federal and Tribal complete
- ▶ V&V Work to begin on State and Private lands in summer of 2024

La Paloma DRUM Site



EPA Region 6 Tronox

- ▶ 20 Mines in NM
- ▶ 12 Mines with surface expressions
- ▶ Spencer Mine reclaimed by MMD/AML with BLM funding
- ▶ NMED and MMD provide technical assistance

Non-Tribal Tronox AUM Sites

San Mateo Creek Basin
McKinley County, NM

- ⊙ Uranium Mill
- Tronox AUM Sites**
- Drill Holes
- ▲ Heap Leach
- Section Mined Through Shaft
- Vertical Shaft
- Non-Tronox AUM Site
- Related Mine Features
- ▭ Tronox Area of Interest
- ▭ San Mateo Creek Basin
- ▭ Township/Range
- ▭ Section
- ▨ Navajo Nation
- Land Ownership**
- BLM
- Forest Service
- Tribal Land
- Private Land
- State Land

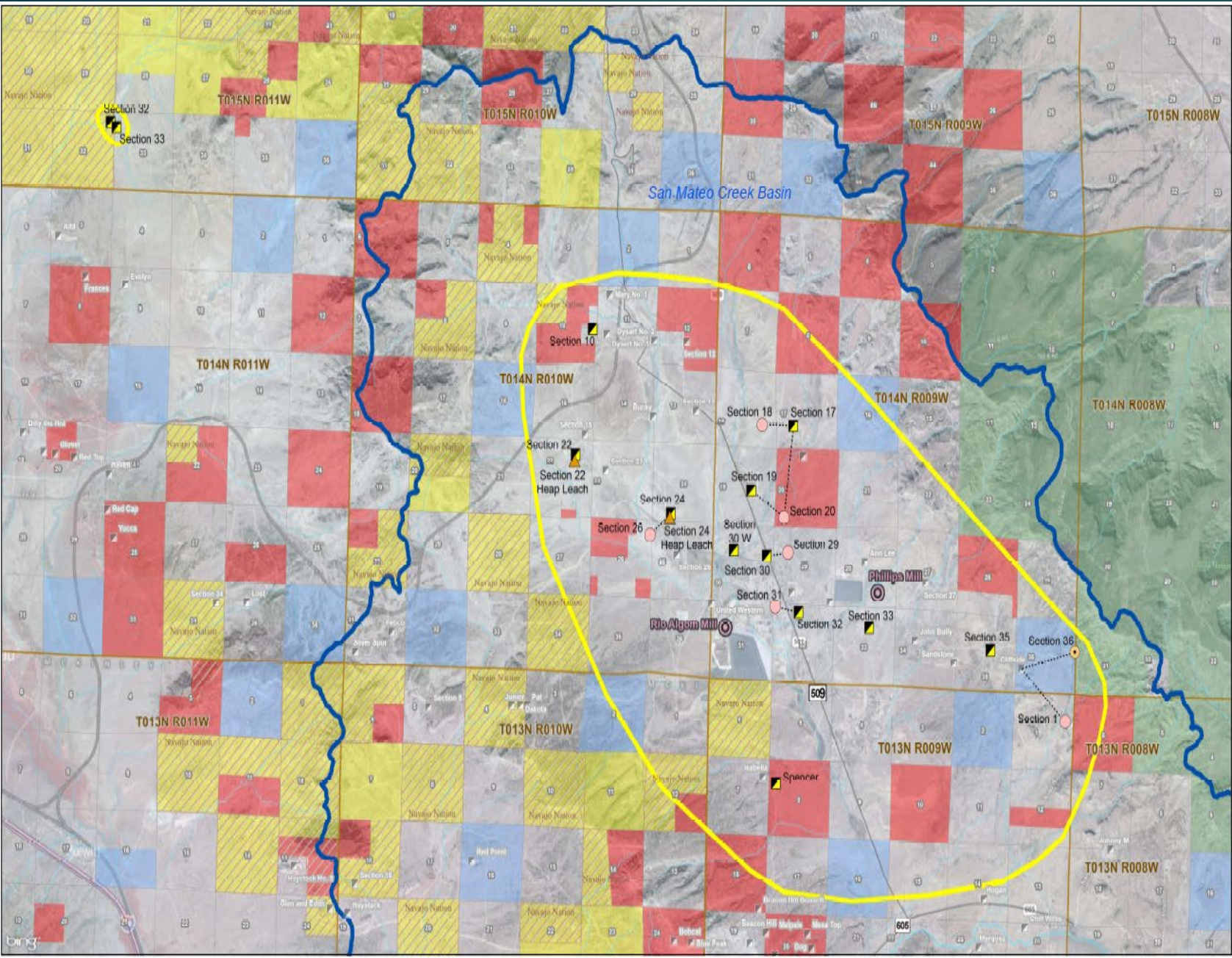
0 0.6 1.2 1.8 2.4
Miles

Sources:
 Non-Tribal Tronox AUM Sites: EPA Region 6 & 9 Superfund Mills and Non-Tronox AUM Sites: 2008 MMD AUM Inventory.
 Tronox Area of Interest: R6 predecisional extent of study area.
 Related Mine Features: EPA Region 6 Superfund.
 Section/Township/Range: USGS PLSS. Bing Image.
 Navajo Nation: 2010 TIGER/Line. Basin: USCA/NRCS.



DRAFT MAP ONLY

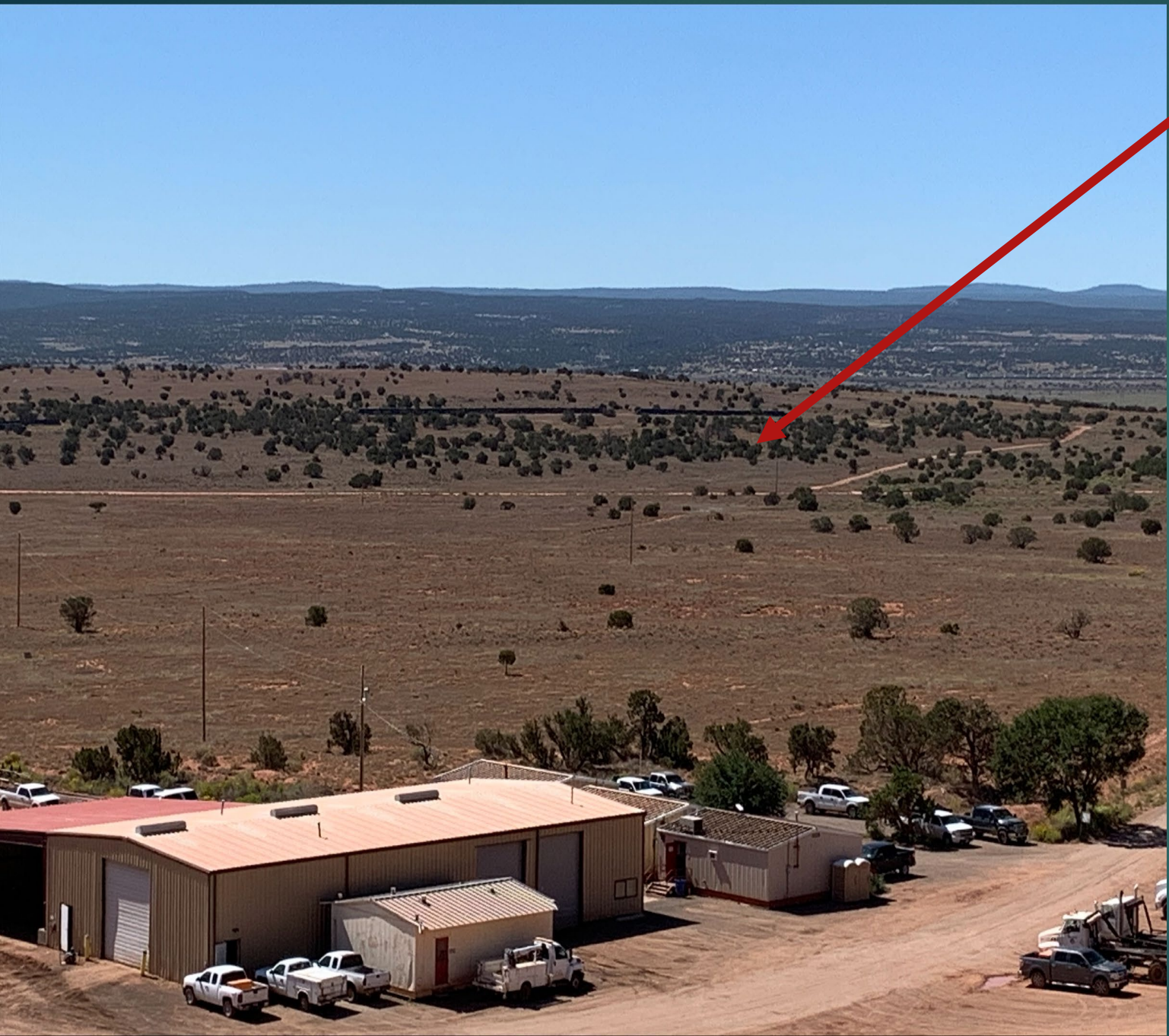
20140104E.01



Red Rocks Repository
Proposed Location
(view looking south
from landfill)

EPA Region 9 Tronox Sites

- ▶ Quivira Mine Waste
 - ▶ Church Rock 1
 - ▶ Church Rock 1 East
 - ▶ Church Rock 2
- ▶ Section 32/33 Mines
- ▶ These four sites have a proposed alternative in the EPA Engineering Evaluation/Cost Analysis of disposal near the Red Rocks Landfill (Northwest NM Regional Solid Waste Authority) ~5 miles outside Thoreau, NM





Jackpile-Paguate Site

National Priority List (NPL) and Superfund Alternative Approach Sites

- ▶ Homestake Mill: NPL, Non-Tribal Land
- ▶ Jackpile-Paguate: NPL, Laguna Pueblo
- ▶ UNC Church Rock Mill: NPL, Navajo Nation, Non-Tribal Land
- ▶ Central Study Area: Superfund Alternative Approach Site, Non-Tribal Land

Other Uranium Work in the State

- ▶ Bureau of Land Management (BLM) Completed Cleanups
 - ▶ Spencer and Barbara J 1, 2, and 3 Mines
- ▶ Forest Service (USFS) Completed Cleanups
 - ▶ Old La Jara, Taffy, Vallejo, and Zia Mines
 - ▶ San Mateo Mine – Responsible Party led under USFS oversight
- ▶ Other EPA sites in progress
 - ▶ Johnny M Mine – Removal Action
 - ▶ Haystack – Navajo Nation – Removal Action
 - ▶ Mac No. 1 and 2, Black Jack No. 1 and 2, Ruby 1, 2, 3, 4 – Navajo – Removal Action, Navajo Nation
 - ▶ Homestake Mines – Mary #1, Dysart #1, #2, Section 13, Section 15, Section 23, Section 25, and Section 32; Removal Action
 - ▶ United Nuclear Corporation – AnnLee, John Bully, and Sandstone

Uranium Mill Regulation

- ▶ Ambrosia Lake Mill (Phillips)
 - ▶ DOE long-term stewardship
- ▶ Ambrosia Lake West Mill
 - ▶ Responsible Party: Rio Algom Mining LLC
 - ▶ NRC Regulation, NMED (Discharge Permit and Abatement)
- ▶ Bluewater Mill
 - ▶ DOE long-term stewardship
- ▶ Bokum Mill
 - ▶ Decommissioned, never operated
- ▶ Church Rock Mill
 - ▶ Responsible Party: United Nuclear Corp.
 - ▶ NRC Regulation, EPA (NPL Superfund)
- ▶ Homestake Mill
 - ▶ Responsible Party: Homestake Mining Company of California
 - ▶ NRC Regulation, EPA (NPL Superfund), NMED (DP and Abatement)
- ▶ L-Bar Mill
 - ▶ DOE Long-term stewardship
- ▶ Shiprock (Navajo) Mill
 - ▶ DOE long-term stewardship

Homestake Mill





Thank you for your time.