New Mexico Uranium Mine Site Assessment & Reclamation Progress

Legislative Finance Committee
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New Mexico Energy, Minerals and Natural Resources Department

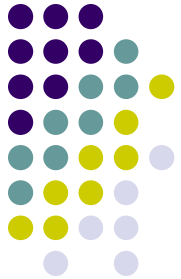
Project Phases

Schmitt Ranch decline

St. Anthony open pit

- Literature review & data collection
- Data collection from digital imagery
- Field surveys & site assessments
- Site prioritization
- Reclamation design
- Leveraging resources & partnerships
- Remediation, reclamation & clean-up

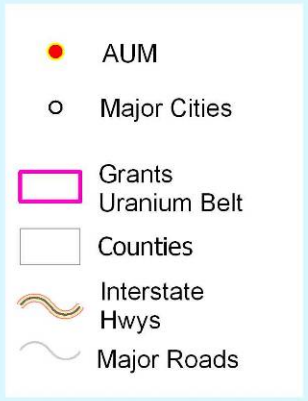
Literature Review & Data Collection

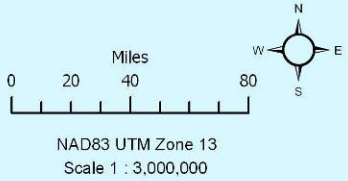


- Developed an inventory of abandoned uranium mines (AUMs).
- Identify recorded reclamation status of all mines in inventory.
- Sources:
  - New Mexico Bureau of Geology and Mineral Resources publications,
  - State Mine Inspector records,
  - Atomic Energy Commission records,
  - Mining and Minerals Division records,
  - Bureau of Land Management surveys,
  - Navajo Nation AUM Atlas,
  - U.S. EPA data, and
  - Other publications.

Abandoned Uranium Mine Inventory

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

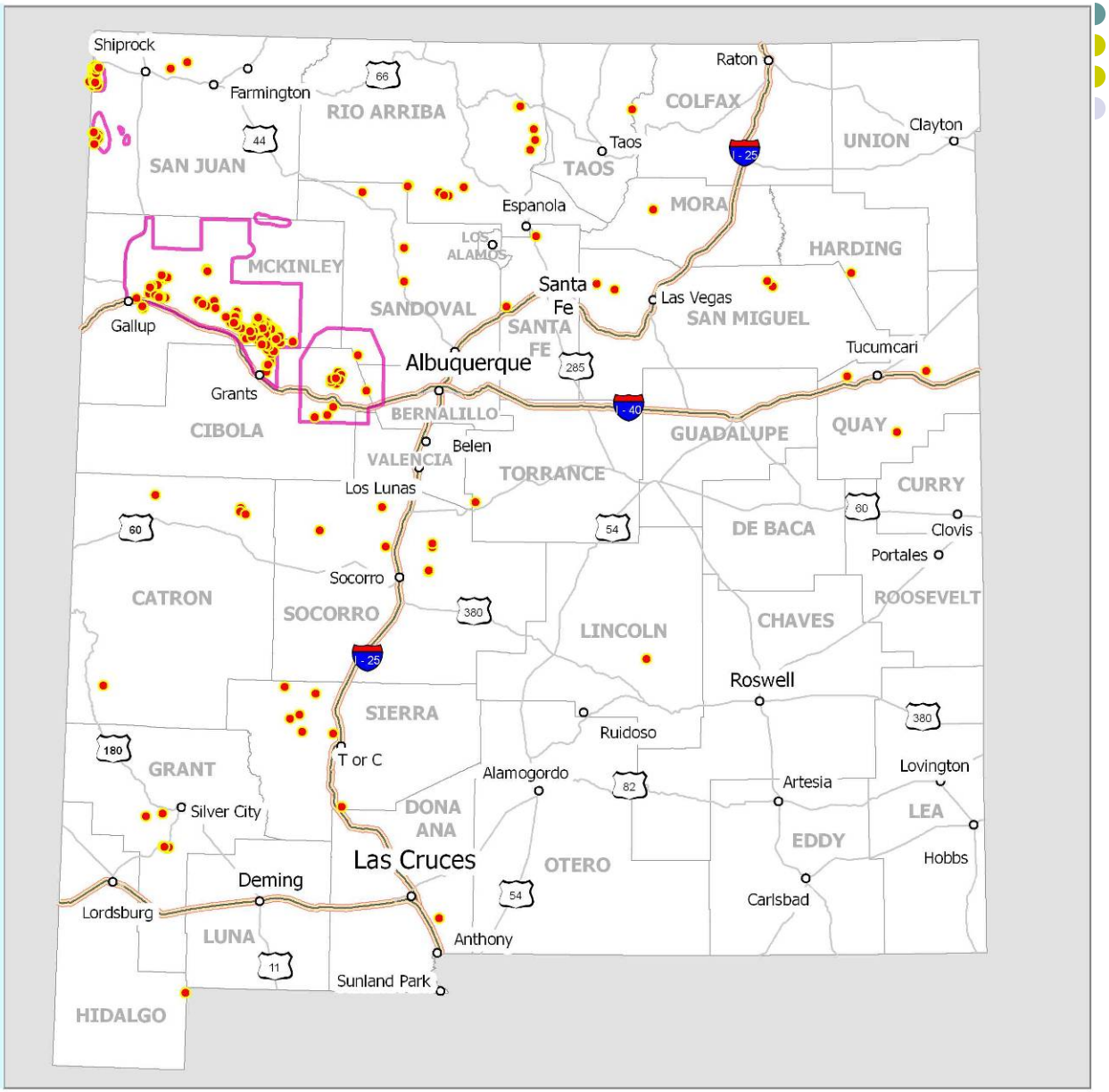




NAD83 UTM Zone 13
Scale 1 : 3,000,000

Created by New Mexico
Mining & Minerals, New Mexico Energy,
Minerals & Natural Resources
April 2009

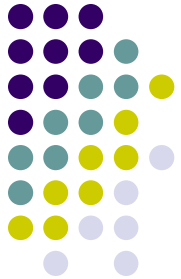
Data: AUMs from Mining & Minerals
Div. (NM Energy, Minerals & Nat. Res. Dep.)
and NM Bureau of Geology and Mineral
Resources; base layers from ESRI and
NM Resource GIS Program
(http://rgis.nm.edu), US Census Bureau,



AUM Inventory Statistics

		All AUMs	All AUMs, No Documented Reclamation
Number of mines		259	137
Production (lbs. U_3O_8)	>20 million	1	0
	2 million-20 million	24	3
	200,000-2 million	28	10
	20,000-200,000	35	19
	< 20,000	131	85
	included with other mines	40	20
Surface ownership	Federal	68	48
	Private	78	46
	State	9	9
	Tribal, trust	77	16
	Tribal, allotment	17	16
	Mixed	10	2

Field Surveys



- Project assessment and maintenance of previous New Mexico Abandoned Mine Land (AML) projects.

  Surveyed 14 mines in the Poison Canyon and Ambrosia Lake areas north of Milan and 1 mine located southeast of Gallup.

- 2008 federal and state lands field survey.

  Industry-sponsored survey of 21 mines on Federal and State lands located throughout New Mexico.

- 2009 survey and engineering design contract.

  AML professional services contract for surveying, site assessment and reclamation design for 7 mines in the Poison Canyon area.

- 2009 field survey.

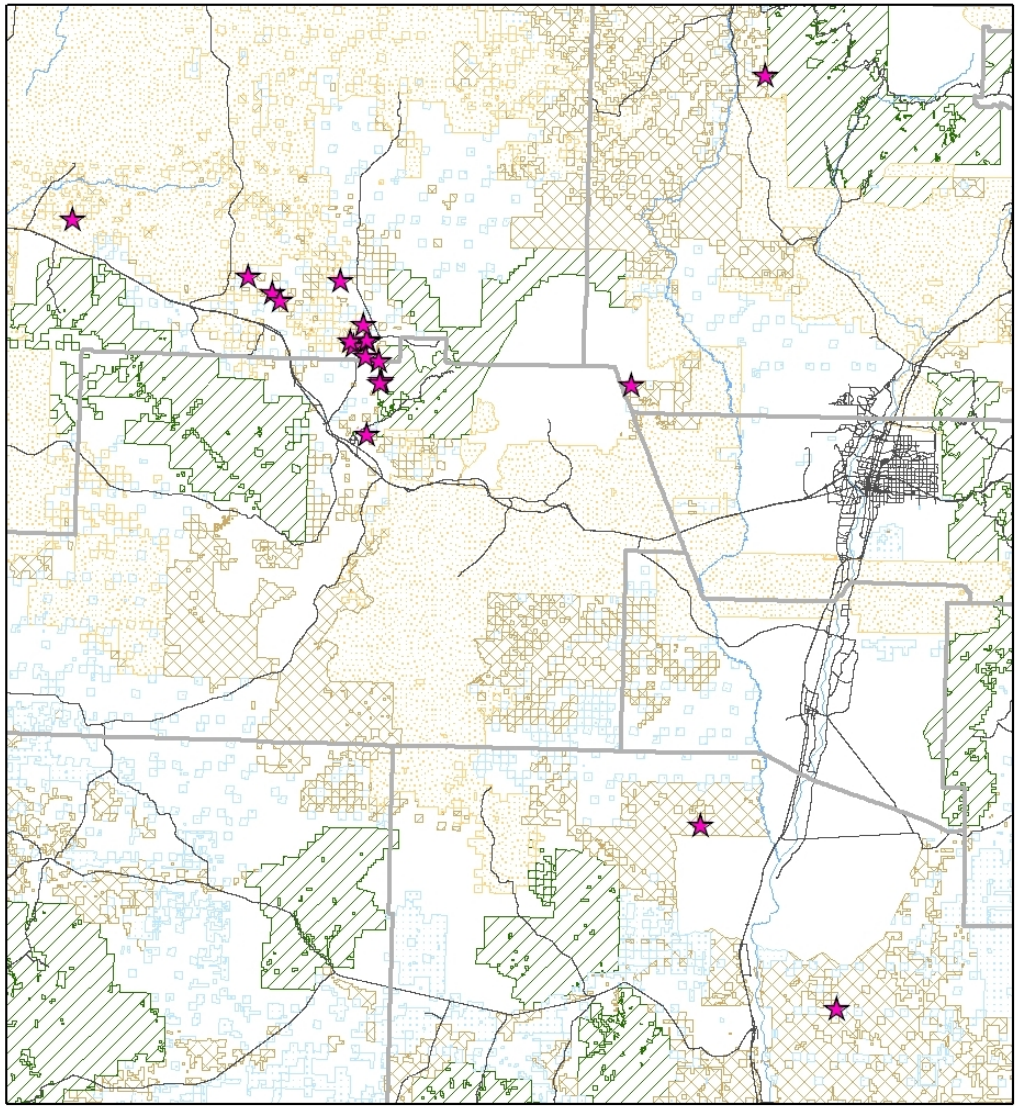
  Request for proposals for preliminary site assessment and field survey work for approximately 25 mines located throughout New Mexico.

AML Project Assessment & Maintenance

- The New Mexico Abandoned Mine Land (AML) Program safeguarded 15 abandoned uranium mines in the early 1990s.
- Mines were surveyed from summer 2007 to summer 2008 to assess the need for maintenance and to identify proximity waste piles.

Beacon Hill Gossett mine

2008 Federal & State Lands Field Survey



Abandoned Uranium Mine
Field Survey Project
Spring 2008

- Uranium Mines
- Rivers
- Roads
- County

Surface Ownership

- Bureau of Land Management
- Forest Service
- Tribal Lands
- State

Sources:
MMD Abandoned Uranium database
Navajo Nation
Bureau of Land Management

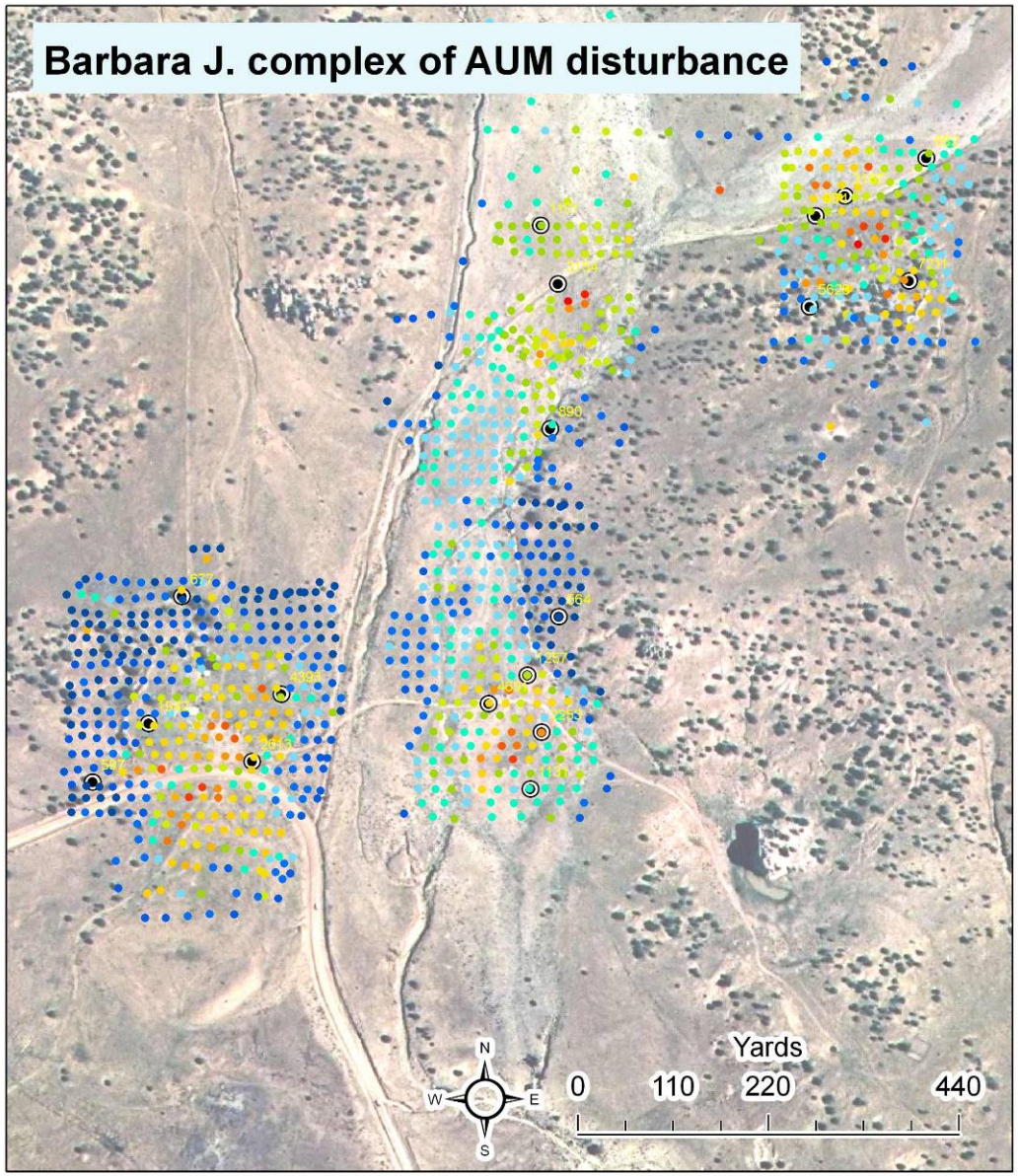
N

2009 Survey & Engineering Design Contract

T-20 mine

- Current AML Program professional services contract covering 7 mines on state, federal and private lands in the Poison Canyon area.
- Contract covers site assessment and survey work, followed by the development and engineering of clean-up plans for these sites.

Radiation Reading Sampling



Gamma survey (p Ci / g) points

2.9 8 777.6
low mode high

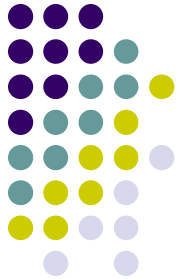
Soil Samples Planned

2009 Field Survey

- Request for Proposals for geo-environmental site assessment services at abandoned uranium mine lands located throughout New Mexico
- Funding of $200k from federal abandoned mine land grant monies and from 2009 appropriation of state Mining Act penalty monies fund.

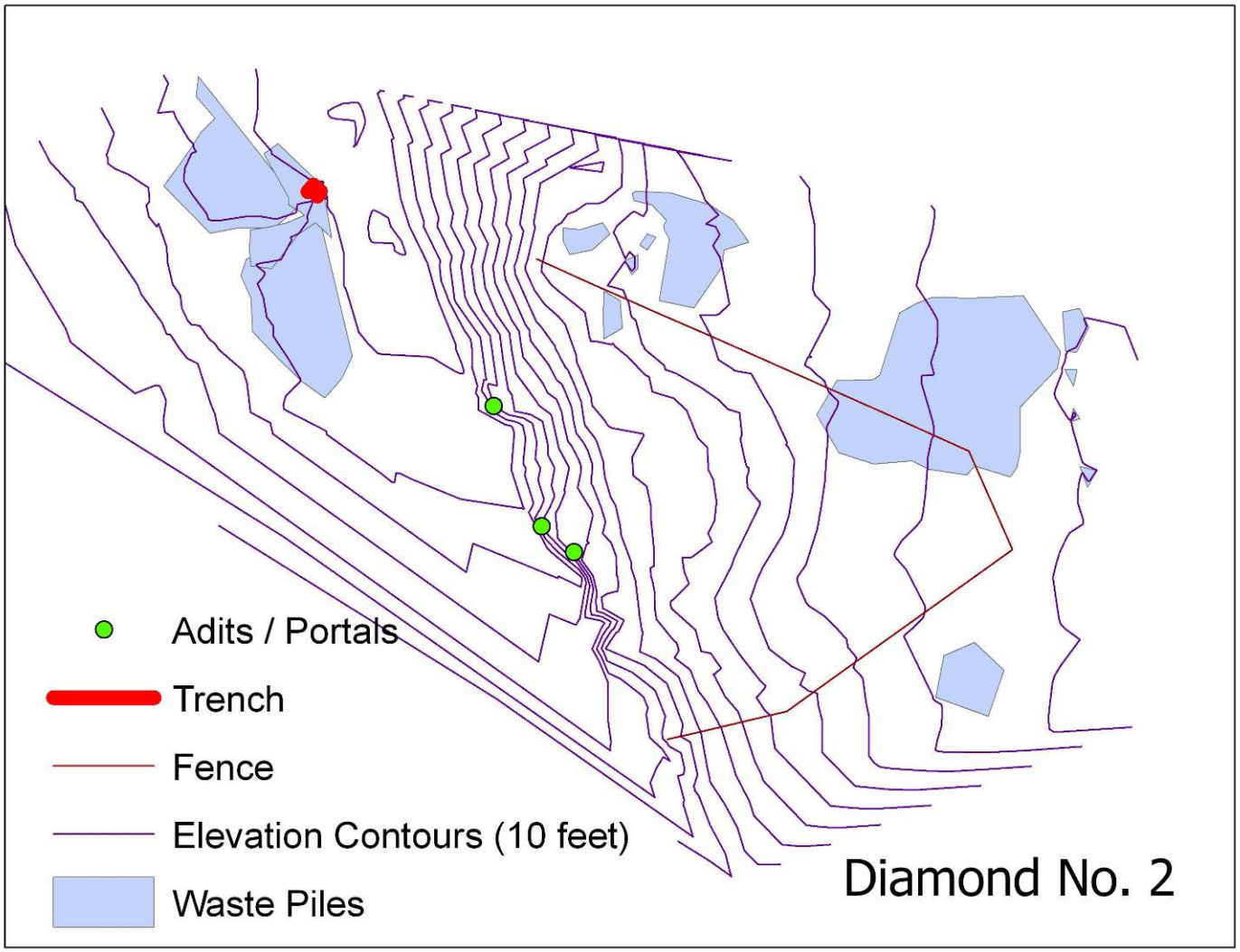
Spencer mine

Site Prioritization



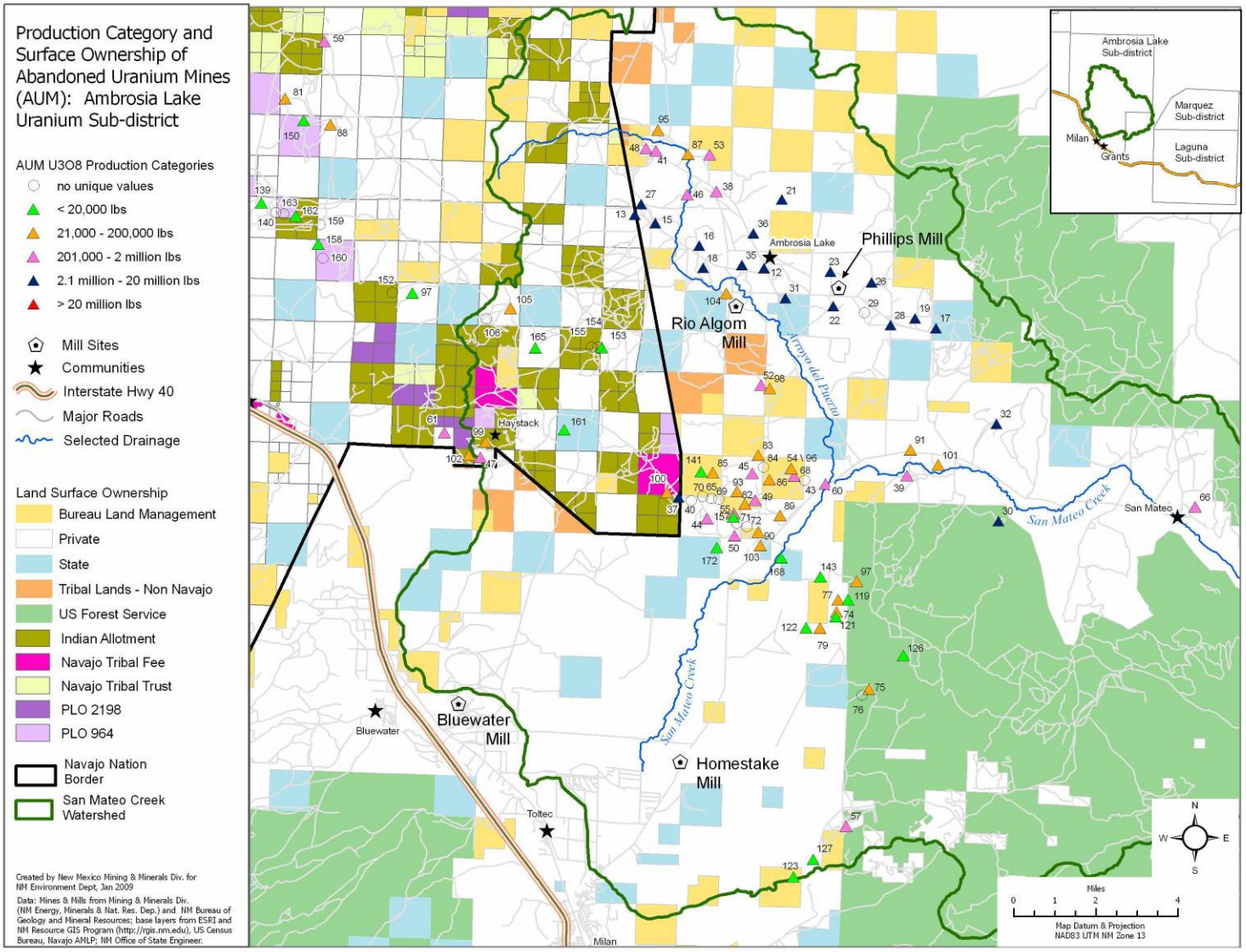
- Limited resources require prioritizing abandoned uranium mine sites.
- Multi-agency involvement on federal, state and tribal levels.
- Priority based on site factors.
  - Radiological hazards
  - Physical safety hazards (open shafts & adits, subsidence, high walls)
  - Proximity to homes
  - Proximity to domestic wells
  - Proximity to water drainages

Reclamation Design

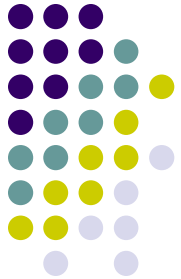


Joint project of the New Mexico &
Navajo Nation Abandoned Mine Land Programs

Leveraging Resources & Partnerships



Remediation, Reclamation & Clean-Up



- Continued coordination with federal, state and tribal agencies.
- Perform further site assessment and radiological surveys.
- Prioritize sites.
- Establish reclamation standards and criteria.
- Promote public participation.
- Secure funding sources for cleanup work: federal, state, tribal and private sources.