



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

DRUM Overview for FIMS

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Agenda

- DRUM Program: Objectives & Limitations
- Recent Accomplishments
- Critical Next Steps
- V&V Work Plan Overview
- Questions



DRUM Program: Objectives & Limitations

■ Objectives:

- Collect site-specific data at each mine
- Perform risk screening of the hazards
- Improve data quality of databases
- Exchange information with partners
- Define current mine conditions for informed management decisions
- Leverage resources to address physical hazards

■ Limitations:

- No cleanup authority or specific funding
- One-time surficial site sampling event



Working with partners:

- Federal Agencies
- State Agencies
- Tribal Governments
- Private Companies

Goal: Protect human health, safety, and the environment.



DRUM Program: What is it?



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Accomplishments

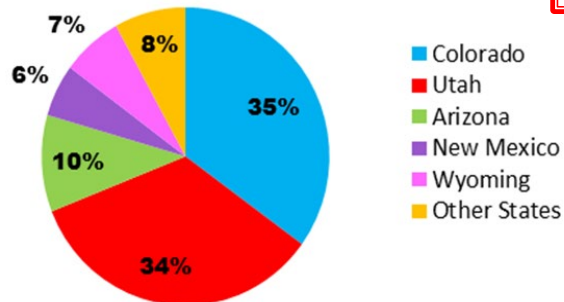
- Located and reconciled ore production records for over 3,400 DRUM sites
- Developed field verification & validation (V&V) work plans that include risk screening criteria to include recreation, livestock ranching, and EPA and Navajo developed resident scenarios
- Developed a robust access permitting process to protect DOE, landowners, and other parties with real property interests
- Completed inventory of 2,137 (90%) of DRUM on public lands (Federal & State)
- Completed inventory of 23 (10%) of DRUM on tribal lands



Program Overview: Estimated 3,472 DRUM Sites

- Majority of ore came from a few Very Large mines
- Nearly 3,000 of the mines are Small or Small / Medium in size
- Reclamation status of only 15% of mines can be confirmed

DRUM by State



Real Estate Responsibilities

- Obtaining access agreements, permission to survey, or permits
- Notifying landowners, leaseholders, and permitholders about program activities
- Obtaining landowner information that may affect the planning of routes to mines
- Performing due diligence of landownership
- Contributing to the planning of field schedules
- Reviewing and establishing agreements with partner agencies and tribal land management organizations
- Coordinating with counterparts at various partner agencies and tribal organizations



Real Estate's Road Ahead

Campaign #1 Federal/State Lands

Campaign #2 Tribal Land

Campaign #3 Private land

- C1- Federal/State Agencies

- Campaign 1-201 mines remaining as of March 2023

- C2 – Tribal Lands

- Campaign 2 consist of 388 mines located within 8 tribal nations.

- C3 – Private Land

- Campaign 3 encompasses over 664 mines within 14 states across the nation.



Critical Next Steps

- Complete field verification & validation on federal lands (March 2024)
- Complete field verification & validation on tribal lands (September 2027)
- Complete field verification & validation on private lands (September 2028)
- Submit final report to Congress (September 2030)



V&V Work Plan: Overview

- Purpose:
 - To provide objectives, direction, procedures, methodologies, structure, and guidance for the coordination and performance of inventory activities at DRUM sites
- Background:
 - Prepared for each campaign (e.g., federal, tribal, and private)
 - Develop record of locations and current conditions
 - Provide relative assessment and ranking of potential risks
- Objective:
 - To verify the location, production records, and status of reclamation and remediation and validate current site conditions of DRUM sites



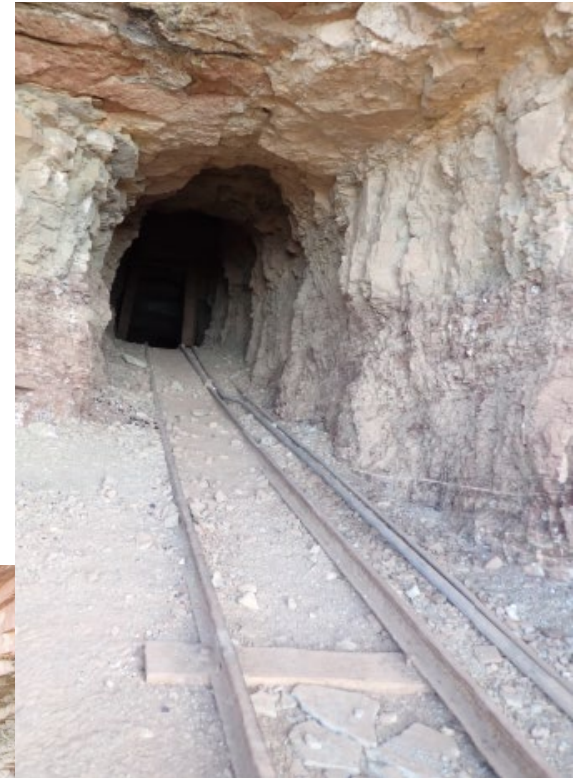
V&V Work Plan: Risk Scoring Assessment

- For physical hazards:
 - Establish multiple lines of evidence to evaluate the potential risks
 - Observe ease of access, signs of use, size of mine waste rock piles, ecological activity, and presence of sediment
 - Consider modifying factors such as access and complexity
 - Conduct risk scoring and ranking for each mine
- Compare chemical analytical data to established screening level benchmarks for the recreational, livestock rancher, and resident risk scenarios
- For radiological risks, conduct gamma radiation walkover survey



V&V Work Plan: Preparation

- Establish partner agency cooperative agreement
- Reconcile location and production data for each DRUM site
- Prepare a Field Operations Plan for each region
- Research ecological data resources from federal, state, and tribal agencies (e.g., list of special-status species)
- Obtain work authorization



V&V Work Plan: Inventorying and Sampling

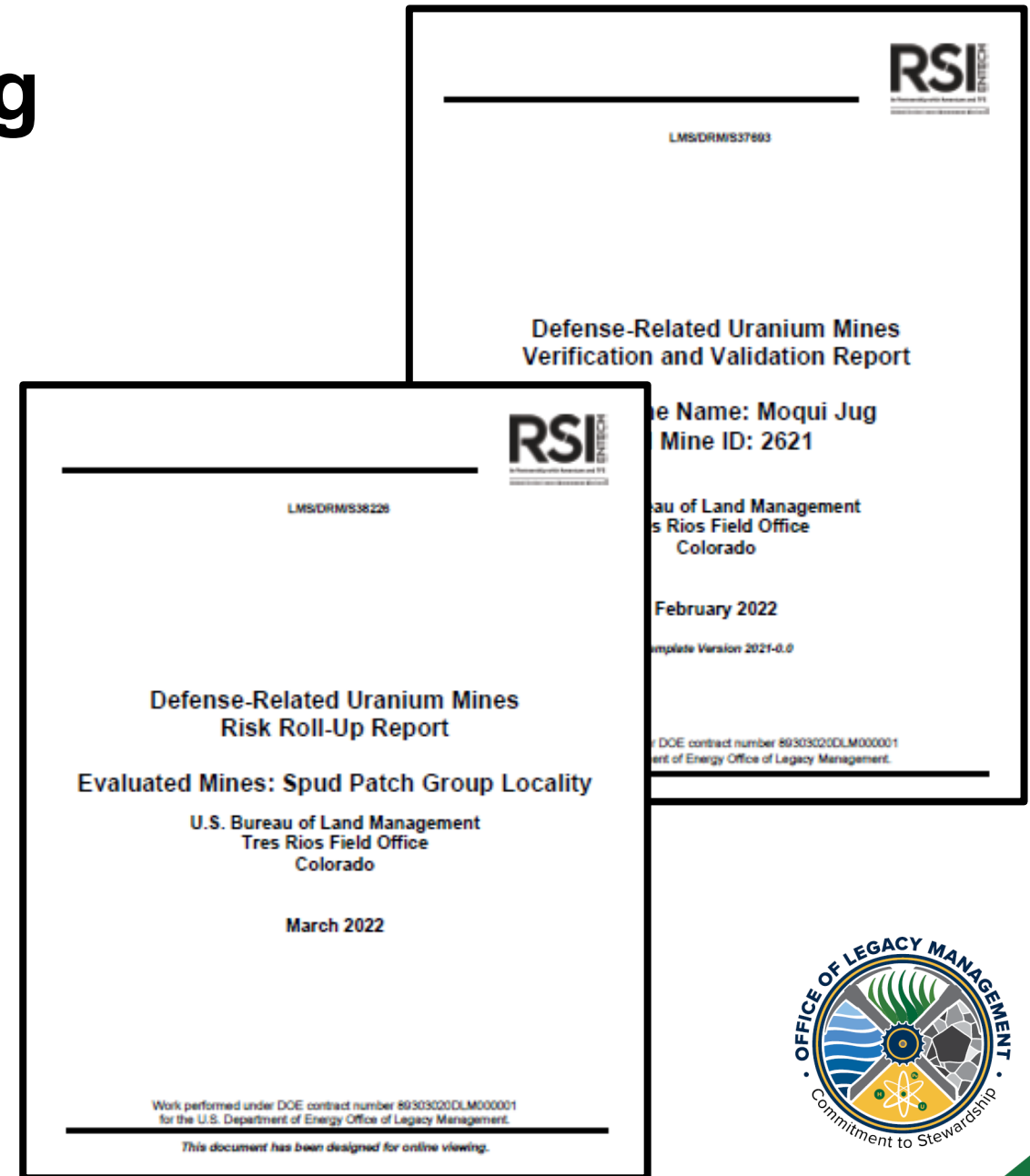
- Inventorying:
 - Ascertain primary route to the mine
 - Verify the mine location
 - Determine the disturbed area
 - Locate and record mine-related features
 - Map waste rock piles
 - Photographically document site conditions
- Environmental Sampling:
 - Soil and sediment sampling
 - Surface water sampling
 - Gamma radiation survey
 - Collect background data on regional basis



V&V Work Plan: Reporting

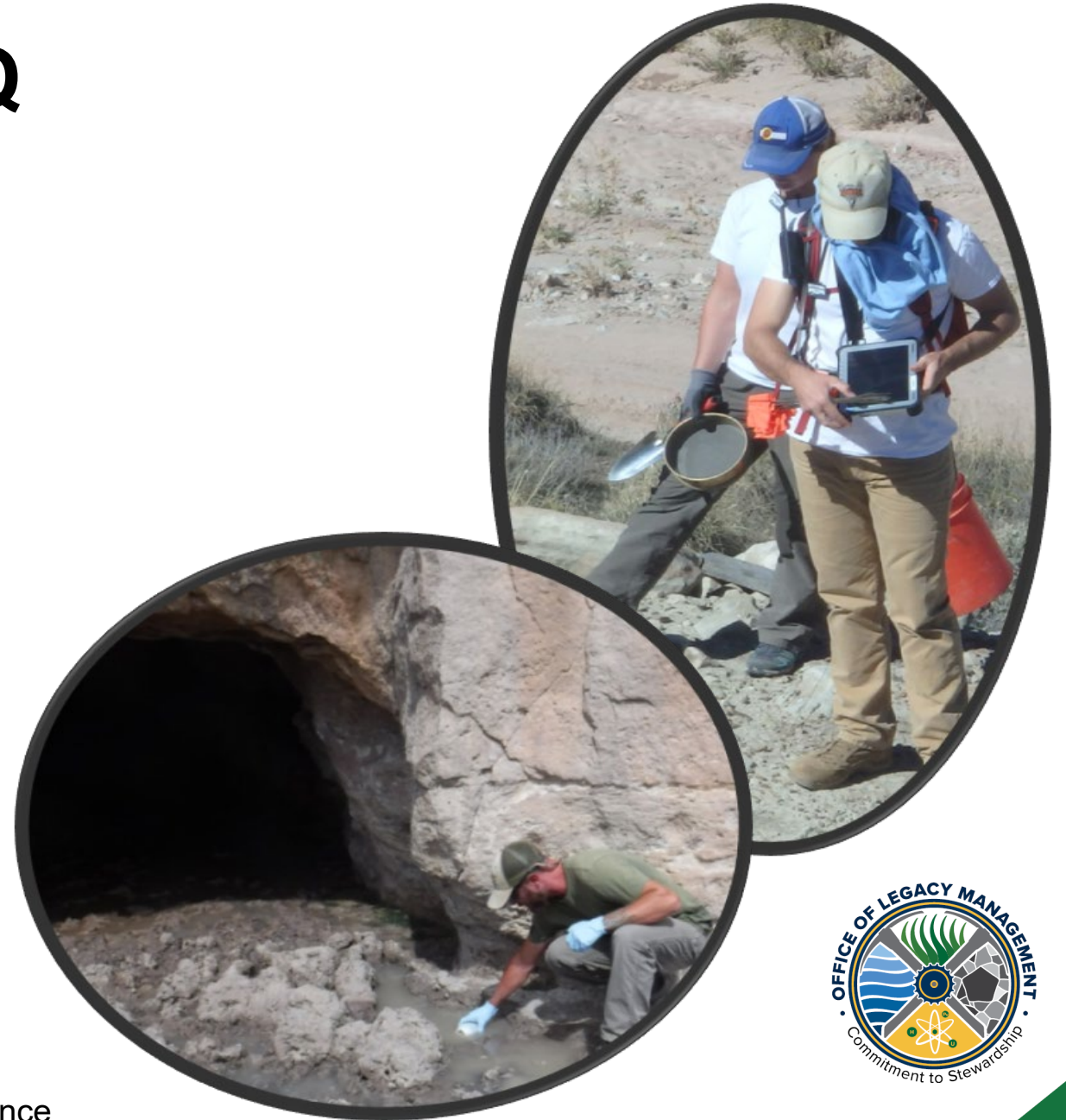
- Mine-specific technical report
 - Inventorying and sampling results
 - Describe gamma, COI metals, and Radium-226 in histogram
 - Physical hazard risk scoring summary
- Risk rollup report
 - Side-by-side mine comparison for an AUM region
 - Identifies and ranks physical hazards

AUM – Abandoned Uranium Mine; COI – Constituent of Interest



V&V Work Plan: ESH&Q

- Safety and health
 - Setup of field operations base
 - Pre-job briefing
 - Wear of thermo-luminescent dosimeters
- Quality assurance
 - Post-field quality control (e.g., sufficiency of gamma survey and field notes)
 - In-office data evaluation (e.g., quantity and quality of data)



V&V Work Plan: Environmental Requirements

- Specific or unusual situations captured in the FOP
- NEPA documents prepared consistent with the FOP
- Cultural resources
- Hazardous material transportation
- Migratory birds
- Threatened and endangered species
- Waste management
- Spills
- Suitability (e.g., use of UTVs)



LM Points of Contact

- Director, Office of Site Operations
 - Jay Glascock, (303) 410-4822
- DRUM Team Lead
 - Gordon Clark, (303) 410-4892
- DRUM Technical Lead
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- DRUM Project Managers
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Questions?

