



OIL, GAS & MINING

# Abandoned Mine Reclamation Program PROJECT SUMMARY

## TEMPLE MOUNTAIN PROJECT

### Project Location and Background

The Temple Mountain Project is located in Emery County, Utah; in the southeast flank of the San Rafael Swell about 20 miles north of the town of Hanksville. All together, the project takes in about 1100 acres of predominantly public land managed by the BLM with some state land intermixed.

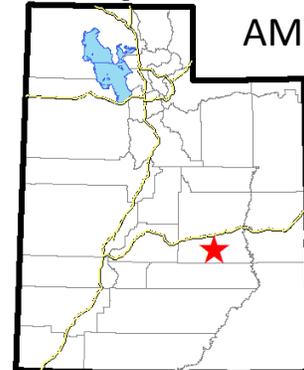
Reclamation at Temple Mountain required facing and overcoming several challenges. The district is historic and protection of cultural resources was a priority. It was important to find ways to safeguard the mines while preserving their historic features.

The nature of uranium ore deposits and uranium mining complicated closure design. Uranium mines can have complex geometries, with irregular shapes and large stopes; the sandstone host rock is often fractured and interbedded with unstable mudstone lenses. These conditions preclude cookbook approaches to mine closure design.

There were also logistical challenges for construction as well. Although there is excellent two-wheel-drive access to the area, internal roads were very poor, badly eroded and boulder strewn. The terrain is rugged, rocky, and steep. Some mines were high in cliff faces. The AMRP philosophy in reclamation is to minimize new disturbance (e.g. road building) and fit the means of access to the existing site conditions as much as possible. This can mean packing everything in on foot.

*The AMRP in the Division of Oil, Gas and Mining, Utah Department of Natural Resources was created in 1983 to address physical safety hazards associated with abandoned mines as authorized by the Surface Mining Reclamation and Control Act (SMCRA) of 1977. The Program is funded by The Utah Coal Producers who pay an abandoned mine reclamation fee to the Office of Surface Mining (OSM) on each ton of coal mined in Utah.*

### Emery County, Utah



AMR/015/905



North Mesa in foreground, Temple Mountain in background

Some mine openings were located inside a Wilderness Study Area with legal access restrictions. A final challenge was radiation. The AMRP had done uranium mine closures before, but this was one of the first large projects with a significant manual labor component. Protecting worker health was critical.

**Land Owner: BLM & State**  
**General Contractor: VCM Construction**  
**AMRP Project Manager: Chris Rohrer**  
**AMLIS Key: UT000151**  
**Funding: OSM Grant**



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## Temple Mountain Project, 2002 -- Construction Summary

The construction was completed for \$176,243, or an average cost per closure of \$1,250 (range \$100-\$6,025). The contractor was able to contain costs by running a low overhead, family operation and efficiently managing the work. Construction began March 11, 2002 and was completed by May 18, 2002. The inventory identified 203 mine openings in the Temple Mountain area. Reclamation addressed 141 hazardous mine openings using several closure methods. By type, the number of mine closures installed were: manganese steel adit gate 4, mild steel rebar adit gate 16, mild steel rebar shaft grate 2, concrete block wall 20, native stone wall 16, polyurethane foam (PUF) shaft plug 21, backfill (manual labor or mechanized) 55, custom design 7. With the completion of the work, all public access to hazardous underground workings is prevented and fall hazards are eliminated. The UAMRP selected closure methods based on analysis of the geotechnical condition of each opening, its quality as bat habitat, and its historical values.

### Change Orders (2)

Change Order #1: Changed closure type and quantity, \$4928

Change Order #2: Changed closure type and quantity, \$724

**Original Contract Amount: \$170,591**

**Final Contract Amount: \$176,243**

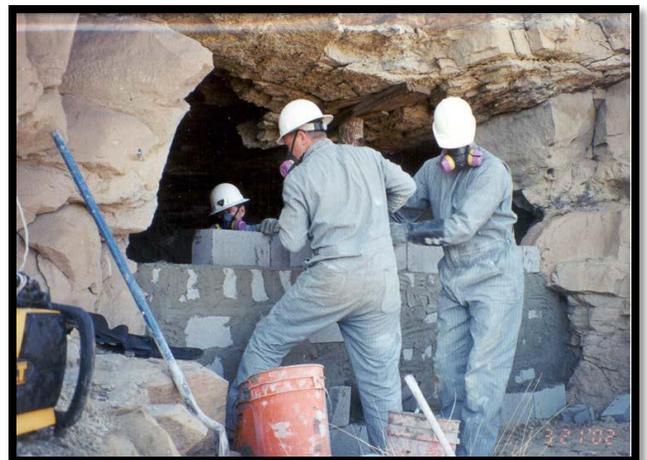
### Accomplishments

**109 Portals Closed: \$135,120**

**29 Shafts Closed: \$41,123**



*Photos: Top Right: PUF closure; Bottom Left: Steel grate adit closure; Bottom Right: Concrete block wall closure*



**Temple Mountain Project:  
109 Portals Closed & 29 Shafts Closed  
Completed: Spring 2002  
Construction Cost: \$ 176,243  
Funds: OSM**