

## Lake Valley Mine Safeguard Project - Phase I



The Lake Valley Mine Safeguard Project - Phase I area is located in and around the ghost town of Lake Valley, seventeen miles south of the town of Hillsboro, in Sierra County, New Mexico. The project area is on private and public land.

The project site consisted of 42 shafts, 26 pits and 12 adits, all of which were dangerous to the public at large.

To the maximum extent practicable, construction access was limited to existing jeep trails and roads, except as otherwise shown, specified, or allowed by the Project Manager.

This project involved the following work:

- Backfilling of 56 mine openings using mine waste, other nearby material and material imported from designated borrow areas where specified. Backfilling by hand and the use of small equipment are required at some mine openings.

- Construction of bat gates in four adits and one pit, including two placed inside rock bulkheads with corrugated steel pipe culverts.

- Construction of airflow closures with corrugated steel pipe risers inside polyurethane foam (PUF) plugs with precast concrete units and concrete collars at four shafts, and of an airflow closure with a corrugate steel pipe riser, concrete footing, precast concrete units and concrete collar at one shaft.

- Construction of horizontal bat gates at two shafts with corrugated steel pipe risers, precast concrete units and concrete collars, and including a PUF plug at one of those shafts.

- Construction of bat cupolas at five shafts, one with corrugated steel pipe riser, precast concrete units and concrete collar, two with polyurethane foam plugs and scoria fill, and two with concrete footings. Stabilization of an existing timber headframe is required at one shaft.

- Construction of polyurethane foam plug closures, with corrugated steel vents, cast iron grates and concrete collars, at six shafts.

- Construction of a concrete hollow core closure at one shaft.

- Stabilization and closure of indicated access roads and closure of temporary construction access roads. Construction of a diversion channel, probably by blasting, and relocation of a portion of an access road. Seeding of all areas disturbed by construction.

The contractor was St. Cloud Mining Company, Truth or Consequences, NM. St. Cloud Mining Co. has done many abandoned mine reclamation projects in the past.

**Year Completed:** 2005

**Cost:** \$401,528.52

**Project Engineer:** John Kretzmann, P.E.

**Project Manager:** Lloyd Moiola

1880s



Present Day



**BEFORE**

**AFTER**

Bat Cupola at 829-23



A very dangerous mine shaft going down a depth of 61 ft. Bats were found to be using this feature.

Bat Cupola after construction. The color of the concrete was chosen to blend in with the surrounding terrain.

Bat Cupola at 835-14



A very dangerous mine shaft going down a depth of 22 ft before connecting with other mine workings. Bats were found to be using this feature.

The slope of the land proved to be a challenge in developing a safeguarding plan for this feature. The bat cupola is built to allow bats to come and go while keeping curious humans out.

Airflow Closure at 832-04



A very dangerous mine shaft going down a depth of 26 ft before connecting with other mine workings. Bat habitat underground was preserved by the airflow this opening provided.



There were three objectives for the closure of this mine feature:

1. Provide human safety.
2. Continue the airflow to and from the feature to enhance bat habitat.
3. Preserve the historic aspects of the retaining wall as feasible.

Airflow Closure at 834-07



A very dangerous mine shaft going down a depth of 38 ft before connecting with other mine workings. Bat habitat underground was preserved by the airflow this opening provided.



Airflow closure preserving bat habitat.