Project Summary

Background

Enacted on May 2, 1977 (amended in 2006), the Surface Mining Control and Reclamation Act (SMCRA) created the nationwide Abandoned Mine Land (AML) Reclamation Program. It places fees on active coal mines to fund the reclamation of coal mines abandoned before 1977. The Office of Surface Mining Reclamation and Enforcement (OSMRE) distributes funds to the state and tribal abandoned mine land programs, which rank abandoned mine land problems on a priority scale of 1 to 3 as defined by federal law. High priority reflects the degree of need for the protection of public health, safety, and property from the adverse effects of coal mining practices prior to 1977, including restoration of land, water, and the environment. The funds are also allowed for safety closures of mine sites other than coal mines if they have been determined to be a public safety hazard.

Mining was first conducted around Yankee Canyon, as well as the nearby Sugarite Canyon, in the early 1890s. Mining operations continued for over 40 years until the early 1940s, when mining was shut down in the area.

County Road A-25 traverses the slopes from the bottom of Yankee Canyon to the top of Horse Mesa, through the Project Area. The unpaved road appears to be experiencing a loss of bearing capacity due to historical mining activity in the area. Based on evidence of observed subsidence, the Colfax County Road Department has temporarily closed the road due to dangerous, unstable conditions for vehicle passage in this area.

No previous mine reclamation or safeguarding measures have been completed in the Project Area.

Project Description

The Proposed Action is designed to investigate and repair areas adjacent to County Road A-25 where subsidence features (tension cracks) have been identified along a section of the road. Geotechnical drilling will be performed to characterize subsurface conditions to determine if the subsidence is related to underground mine workings. The scope of work also includes safeguarding of other related hazardous mine openings and features identified throughout the Project Area, while allowing for open access and continued use of the mine features by smaller wildlife species, including bats. The following safeguarding measures are being evaluated for implementation in priority areas:

County Road A-25: Geotechnical exploration and backfilling through drilling and injection of a water, sand and cement grout mixture are proposed to mitigate subsidence impacting the road. Grout would be injected into the voids beneath and adjacent to the A-25 alignment. The grouting work may take place concurrently with the drilling investigation. The goal of drilling and grouting the County Road A-25 subsidence features is to map the voids under and near the road alignment and to fill those voids with grout to stop additional subsidence in the area and stabilize the road. The drill holes would be spaced every 30 feet along the A-25 alignment, with an increased drilling density of every 20 feet around the existing subsidence features.

Gates: Gates would be installed over mine shafts and in mine adits or portals, as well as in other mine entryways where gates are determined to be the best method for blocking access to mine features. The gates would be designed in accordance with the latest industry standards and would be modified as necessary to fit the specific entryway, occasionally using steel culverts to support the gate. The basic gate design generally used consists of a vertical to horizontally placed flat grid of welded steel cross bars anchored in place over the mine entryway. The cross bars would be oriented horizontally and welded onto vertical supports spaced widely. Spacing of the horizontal cross bars would be 6 inches, designed to allow passage of bats in flight, as well as access for other small mammals and for birds, but not spaced widely enough to allow human entry. Gates are typically constructed of 2-inch by 4-inch and 2-inch-square tubular weathering steel that is anchored into the surrounding rock using 1-inch steel rods. Gates are designed to not inhibit air flow into or out of the mine feature and constructed of angled steel oriented with the apex up to maximize the airflow through the gate.

The gates would be installed at all features identified for closure and surveyed by Bat Conservation International (BCI) and following recommendations provided in BCI's 2021 report conducted for the Project Area. Additional features may also be identified for safeguarding based on the results of an extensive cultural resources survey completed for the Project Area. Construction timing would be in accordance with the recommendations of the BCI report and any recommendations resulting from surveys of the Project Area performed for this BA/BE. Pre-construction wildlife surveys will also be performed as necessary prior to any destructive closures or the installation of safeguarding measures to inspect for wildlife usage of features prior to closure. In addition, on some adit and shaft openings within the open stopes of the Project Area, gates constructed and anchored as described above would be installed.

Rock/concrete bulkhead with culvert gate: At some locations, gates would consist of a bulkhead constructed of a 2- to 4-foot-thick section of rocks cemented together with concrete. A 3- to 4-foot steel culvert with a steel gate would be constructed inside.

Cupolas: Cupolas are a type of gate designed to fit over a vertical mine shaft. Bat-friendly cupolas may be installed over mine shafts if determined to be an appropriate measure for safeguarding a feature in the Project Area. Locations and construction timing would be in accordance with the recommendations of the bat report by BCI (2021) and based on pre-construction surveys of wildlife usage of features.

Backfill: Mine openings may be backfilled with adjacent coal gob or waste rock piles.

Other structural closures: Polyurethane foam (PUF) plugs, gated culverts, and other structures may be used to safeguard mine openings.

Coal Gob Pile Reclamation: Stabilization of steep slopes on coal gob piles may be needed to prevent mine waste from entering adjacent ephemeral channels. Proposed work may include in situ burial of coal gob or the establishment of vegetation and installation of various erosion control structures on the gob piles as necessary to facilitate effective stormwater management.

The Proposed Project ground disturbance footprint would be focused on the identified hazardous mine features throughout the Project Area. Colfax County Roads A-25 and A-26 would serve as the main access roads, along with former two-track, unpaved mine roads that would serve as access for geotechnical drilling activities and to access other areas situated away from the county roads. Existing disturbed and flat areas adjacent to the road may also be used for geotechnical drilling activities and staging of drilling, construction equipment and materials.

Implementation of the Proposed Action is anticipated to begin at the earliest in fall 2023.