ENVIRONMENTAL ASSESSMENT

RED HILL MINE SAFEGUARDING PROJECT

Sierra County, New Mexico

eAMLIS PA No.: NM935065

Prepared for:

New Mexico Energy, Minerals, and Natural Resources Department
Mining and Minerals Division - Abandoned Mine Land Program
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
In Cooperation with:
U.S. Department of the Interior Office of Surface Mining Reclamation and Enforcement, Denver Field Branch
Bureau of Land Management, Las Cruces District Office
and
New Mexico State Land Office

Prepared by:

BRIC, LLC | Subsidiary of Diné Development Corporation
8901 Adams Street NE, Suite B
Albuquerque, NM 87113

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List of Acronyms

ACEC	Area of Critical Environmental Concern
ACQR	Air Quality Control Region
AML	Abandoned Mine Land
APE	Area of Potential Effect
AUM	Animal Unit Month
BA/BE	Biological Assessment/Biological Evaluation
BCI	Bat Conservation International
BISON-M	Biota Information System of New Mexico
BLM	Bureau of Land Management
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
EA	Environmental Assessment
EMNRD	Energy, Minerals, and Natural Resources Department
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EO	Executive Order
FLPMA	Federal Land Policy Management Act
FONSI	Finding of No Significant Impact
IPaC	Information for Planning and Consultation
LCDO	Las Cruces District Office
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NM	New Mexico
NMAC	New Mexico Administrative Code
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMCRIS	New Mexico Cultural Resources Information System
NMMNH	New Mexico Museum pf Natural History
NMRPTC	NM Rare Plant Technical Council
NMSLO	New Mexico State Land Office
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OHWM	Ordinary High-Water Mark
OSMRE	Office of Surface Mining Reclamation and Enforcement
PFYC	Potential Fossil Yield Classification

PL	Public Law
PUF	Polyurethane Foam
RMP	Resource Management Plan
SDA	Special Designated Area
SHPO	State Historic Preservation Office
SWQB	Surface Water Quality Bureau
USACE	United States Army Corps of Engineers
USDI	United States Department of the Interior
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOTUS	Waters of the United States
WRCC	Western Regional Climate Center

1. INTRODUCTION

1.1 Summary of Proposed Action

The New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) - Mining and Mineral Division - Abandoned Mine Land (AML) Program, in partnership with the United States Department of Interior (USDI) Office of Surface Mining Reclamation and Enforcement (OSMRE), the New Mexico State Land Office (NMSLO), and Bureau of Land Management (BLM) is proposing to safeguard approximately 35 priority 1(P1) hazardous abandoned mine openings and features at Red Hill throughout 796 acres in the Caballo Mountains Mining District and Rincon Mining District (hereafter referred to as the Proposed Action).

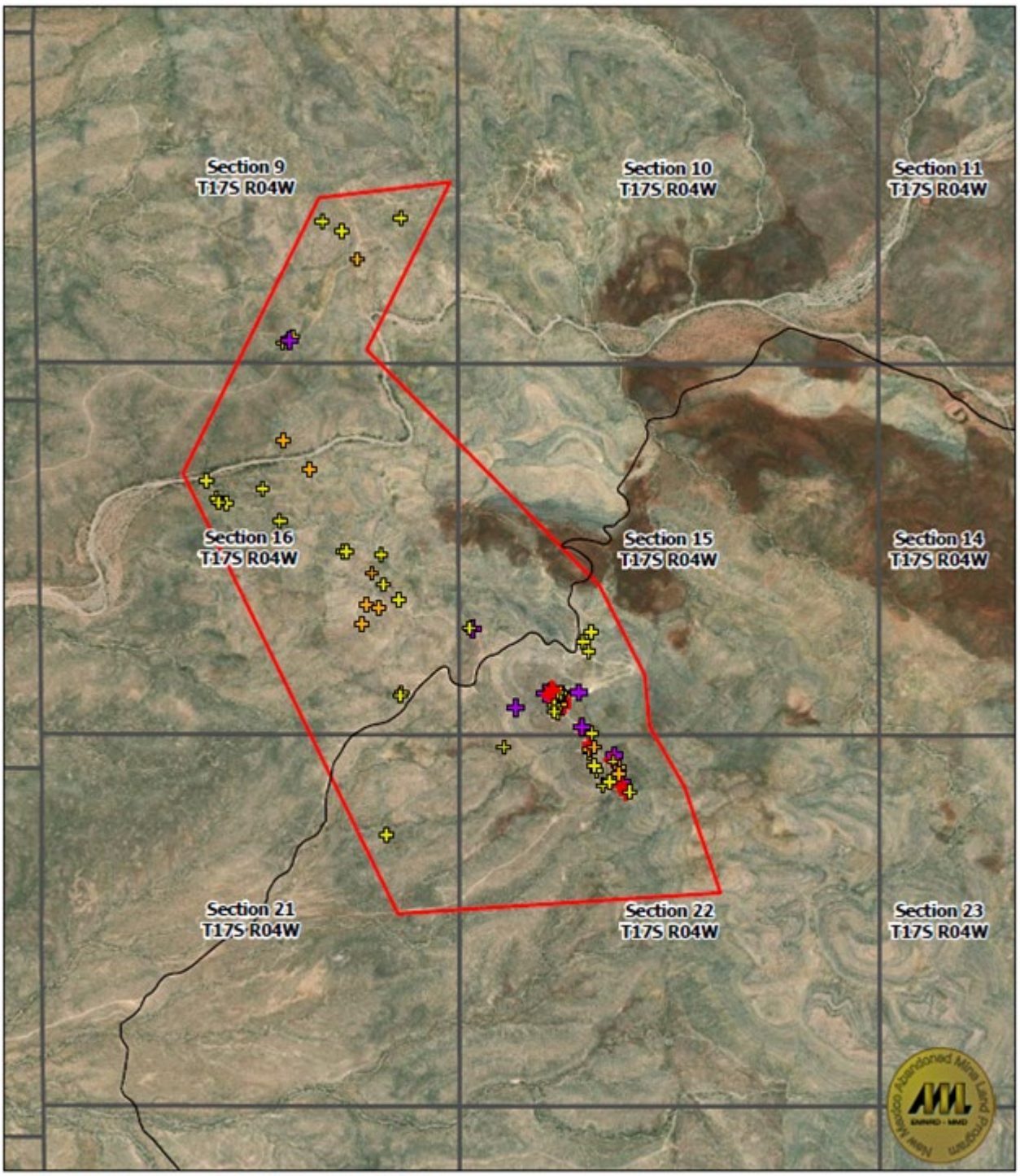
Safeguarding activities for mine closures would utilize a variety of methods, including manually or mechanically filling mine openings with surrounding waste material or polyurethane foam, and building structural barriers that restrict human ingress, such as locking gates, cupolas, high-tensile steel mesh coverings, gated culverts, or other wildlife-compatible closures. Mining features filled with existing waste rock or polyurethane foam would remain visible as shallow depressions, and residual waste rock material would be recontoured in place. Existing access routes would be used to the greatest extent possible to access the mine features proposed for closure.

1.2 Project Location

The project area is located in Sierra County, New Mexico (NM), approximately 3 miles northeast of Derry, New Mexico, in the Garfield and McLeod Tank U.S. Geological Survey 1:24k quadrangles. The legal description of the project area is located within a contiguous block in sections 9, 15, 16, 21 and 22 of Township 17 South, Range 4 West (Figure 1). The Proposed Action would occur at selected mine features within the project area boundary, which is shown on Figure 1. The proposed project area includes 796 acres of land administered by the BLM Las Cruces District Office (LCDO, 470 acres), and the State Land Office (326 acres).

1.3 Purpose and Need for Proposed Action

The purpose of the Proposed Action is to safeguard the public from these hazardous openings, while preserving cultural resources, the historic mining landscape character, and wildlife habitat within the Red Hill Mine area. The need for the Proposed Action is to address human health and safety concerns associated with hazards of abandoned mines features within the Caballo Mountains and Rincon mining districts, including adits, shafts, subsidence features, and other mine openings. The area is currently in use by the public for recreational opportunities such as off-roading and four wheeling. Hazardous mine areas are currently open and accessible to the public throughout the proposed project area.


Section 9
T17S R04W
Section 10
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Section 14
T17S R04W
Section 21
T17S R04W
Section 22
T17S R04W
Section 23
T17S R04W
Red Hill Proposed Project Area
BLM Danger Rating
Extreme
High
Medium
Low
Layer3
Project APE
PLSS
Existing Access
0
0.25
0.5 Miles
Spatial Reference
Name: GCS North American 1983
GCS: GCS North American 1983
Datum: North American 1983
Map Units: Degree
N

Figure 1. Location of Project Area, mine features, and BLM Danger Rating at Red Hill Mine.

1.4 Project History/Background

The Surface Mining Control and Reclamation Act, enacted on May 2, 1977, created the nationwide AML Program. This program places fees on active coal mines to fund the reclamation of coal mines abandoned before 1977. The Office of Surface Mining distributes funds to the state and tribal abandoned mine land programs, which rank AML 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 allotted for safety closures of mine sites other than coal mines if they have been determined to be a public safety hazard.

The project area and the surrounding vicinity are known for mining efforts during the late nineteenth and twentieth centuries (Seager and Mack 2003), in which Sierra County was the third largest producer of mineral wealth. Prospecting in the Caballo Mountains began around 1883, but mining really began when gold was discovered in 1901 at the Shandon placers site near the mouth of Apache Canyon (Harley 1934). The project area is within the Caballo Mountains Mining and Rincon Mining districts. Several mines opened from 1900–1910s, with production concentrated primarily on fluorspar mining—copper, vanadium, lead, gold, barite, and manganese (Harley 1934). In the 1950s and 1960s mining continued to focus on fluorspar, though there was little to no production (McAnulty 1978, Williams 1966). In the 1970s and 1980s, there was a resurgence of mining activity, and five claims are currently in the project area—Alamo, Alvarez Claims, Jones-Reiland Claims, Manganese Hill, and Southern Caballo Mountains Section 16 (USGS 2023).

The Denver Field Branch of the OSMRE provides direct oversight to the NM AML Program. The BLM and AML Program are operating under a 2014 Memorandum of Understanding that establishes cooperative procedures for abandoned mine reclamation on land administered by the BLM in NM.

1.5 Project Decision

This Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA; 42 USC 4321, et seq.), and Council on Environmental Quality (CEQ) guidelines (40 Code of Federal Regulations [CFR] 1500-1508), which require a systematic, interdisciplinary approach to project planning and implementation and emphasize serious consideration of environmental impacts to federally funded projects be seriously considered in the decision-making process.

This EA was prepared for the AML Program and discloses the environmental consequences of implementing the Proposed Action and the No Action Alternative; the OSMRE is the lead agency, and the BLM is a cooperating agency for the Proposed Action. This EA will be reviewed by the land management agencies with jurisdiction within the project area and made available to the public for review, comment, and consideration. If appropriate, two (2) Finding of No Significant Impact (FONSI) documents would then be prepared by the OSMRE and BLM describing the findings of the analysis in this EA. The BLM Las Cruces District Field Manager and OSMRE Denver Field Branch Manager would be the Deciding Officials for the Proposed Action as the signatories of the FONSI documents, if applicable.

1.6 Relevant Statutes and Regulations

The Proposed Action does not conflict with any known state or local planning or zoning ordinances. The Proposed Action is required to conform and comply with the following applicable and relevant regulations and statutes:

- American Indian Religious Freedom Act of 1978 (42 USC 1996)
- Archaeological Resources Protection Act of 1979 (16 USC 470)
- Clean Air Act of 1970, as amended (42 USC 7401 et seq.)
- Clean Water Act (CWA) of 1972, as amended (33 USC 1251 et seq.)
- Endangered Species Act (ESA) of 1973, as amended (16 USC 1531 et seq.)
- Floodplain Management (Executive Order [EO] 11988)
- Invasive Species (EO 13112)
- Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC 703–712)
- Bald and Golden Eagle Protection Act (BGEPA) of 1940, as amended (16 U.S.C. 668-668d)
- NEPA of 1969, as amended (42 USC 4321 et seq.)
- National Historic Preservation Act (NHPA) of 1966 as amended, (54 USC 300101 et seq.; formerly 16 USC 470 et seq
- National Pollutant Discharge Elimination System, as amended (33 USC 1251 et seq.)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.)
- Paleontological Resources Preservation Act of 2009 (43 CFR part 49)
- Protection and Enhancement of the Cultural Environment (EO 11593)
- Protection of Wetlands (EO 11990)
- Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500 et seq.)
- Secretarial Order 3206: American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act

1.7 Conformance with BLM Resource Management Plan

The Proposed Project is in conformance with the terms and the conditions of the approved White Sands Resource Management Plan (RMP), Las Cruces District Office White Sands Resource Area, Bureau of Land Management, December 1993, (BLM-NM-PT-93-009-4410), as required by 43 CFR 1610.5 (BLM, 1993). The purpose of the RMP is to provide guidance to the BLM Las Cruces District Office for management of public land under their jurisdiction in Doña Ana, Luna, Hidalgo, Sierra and Grant counties, New Mexico. The RMP provides a comprehensive framework for managing public land and allocating resources in accordance with the principles of multiple use and sustained yield of public lands set forth in the Federal Land Policy and Management Act of 1976. The RMP for the BLM Las Cruces District Office is incorporated into this EA by reference and available for review at Las Cruces District Office White Sands Resource Management Plan.

1.8 Public Involvement

In coordination with the AML Program, this EA will be available for public comment. An announcement for the availability of the EA will be placed in the Sierra County Sentinel Newspaper.

Additionally, a link to the draft environmental assessment will be provided on the AML Program's website.

2. DESCRIPTION OF ALTERNATIVES

2.1 Alternative A: Proposed Action

The Proposed Action would safeguard approximately 35 abandoned mine features throughout the Caballo Mountains and Rincon mining districts at Red Hill. Specific safeguarding measures have not yet been determined or designed for each mine feature within the project area. Safeguarding actions may include a variety of methods, including mechanically or manually filling of mine openings with surrounding waste material or polyurethane foam (PUF), and construction of access barriers to prevent human ingress, such as locking gates, cupolas, high-tensile steel mesh coverings, gated culverts, or other wildlife-compatible closures (Appendix A – BA/BE).

Safeguarding measures are designed to preserve cultural resources and wildlife habitat where present. Mining features filled with existing waste rock or PUF would remain visible as shallow depressions, and residual waste rock material would be recontoured in place. Mining features with large, highly visible waste piles, particularly on steep slopes, would be closed using PUF or by other structural means, to preserve the mining landscape viewshed. Structural closures would be built on site to the visual resource management specifications in the White Sands Resource Management Plan. Existing access routes would be used to the greatest extent possible to access the mine features proposed for closure. No additional project alternatives were developed because the design features used to accomplish mine feature safeguarding and closure would adequately address resource issues.

2.2 Alternative B: No Action Alternative

Under the No Action Alternative, proposed safeguarding activities to protect the public from hazards associated with the 35 abandoned mine features throughout the Caballo Mountains and Rincon mining districts would not occur. No site reclamation would occur, and safety hazards at mine features, including adits, shafts, subsidence features, and other mine openings, would remain on the landscape. Specifically, the No Action Alternative does not satisfy the purpose and need of the Proposed Action based on AML Program reclamation priorities (Public Law (PL) 95-87, 30 USC 1240(a) 2006):

A. Protection of public health, safety, general welfare, and property from extreme danger resulting from the adverse effects of past mining practices.

B. Restoration of land and water resources and the environment previously degraded by adverse effects of mining practices including measures for the conservation and development of soil, water (excluding channelization), woodland, fish and wildlife, recreation resources, and agricultural productivity.

3. AFFECTED ENVIRONMENT

This section describes the existing environmental conditions and resources that have the potential to be impacted by the Proposed Action as described in Chapter 2.

In compliance with NEPA and CEQ guidelines (40 CFR 1501.7[3]), only those resources and conditions having the potential to be affected by the action are discussed and analyzed within this section. The following resources were considered but dismissed from analysis because the Proposed Action and No Action alternatives do not affect the resource for the reasons stated below, and therefore are not discussed further in the EA.

Mineral—Minimal disruption to ongoing mineral exploration and mining activities could occur during the construction phase of the Proposed Action; however, the disturbance would be temporary in nature and limited in scope.

Paleontological Resources—The 35 hazards to be safeguarded fall within Potential Fossil Yield Classification (PFYC) 2 (low potential) and 3 (moderate potential). There are, 21 hazardous sites in PFYC 2, and 14 hazardous sites within PFYC 3. Most paleontological resources present near hazards in the project area are common marine invertebrates (e.g., snails, coral, bivalves, cephalopods, bryozoans). There have been two (2) localities recorded within the Red Hill project area, both in the PFTC 4 Abo Formation (C. Dunn, BLM personal communication). These localities recorded plants and vertebrate and invertebrate trace fossils. However, there are no proposed hazardous sites for safeguarding activities in the Abo Formation.

The project area has experienced heavy disturbance locally related to the construction of and access to mines in the Red Hill project area, and fossil resources removed have lost their original stratigraphic context and a degree of their scientific importance. Backfilling mine openings, plugging openings with polyurethane foam, or construction of structural barriers would result in minimal disturbance to the surface and any fossil resources that could be present. If scientifically important paleontological resources are discovered during mine safeguarding activities, a BLM Authorized Officer would be notified immediately. All operations would halt until the BLM-permitted paleontologist could examine the specimen to determine the next appropriate steps. Paleontological resources could be present in the project area, but the Proposed Action is limited in size and would be unlikely to impact paleontological resources with implementation of best management practice listed above.

BLM Special Designated Areas—There would be no impacts to BLM Special Designated Areas (SDAs) and Areas of Critical Environmental Concern (ACECs) Wilderness Areas, or WSA designated areas. According to the BLM Las Cruces District Office White Sands Resource Area RMP, there are no ACECs, Wilderness Areas, or WSA designated areas located near, within or directly adjacent to the project area. The nearest Important Bird Area is Percha SP/Caballo Lake SP/Las Palomas (Site ID: 680), approximately 4 miles northwest of the project area. (Appendix A – Biological Evaluation) Therefore, ACECs and SDAs were not carried forward for further analysis in this EA.

Visual Resource Management Areas—The project area includes Visual Resource Management Class II. The objective of this class is to retain the existing character of the landscape (BLM 1986). Management activities may be seen but should not attract the attention of the casual observer (BLM 1986). The existing characteristic landscape of the project area includes roads, mining features, and

the Red Hill tank. Mining features filled with surrounding waste material or PUF would keep these features visible as shallow depressions, and residual waste rock material would be recontoured in place. Additionally, mine openings with large, highly visible waste piles, particularly on steep slopes, would be closed using PUF or by other structural means to preserve the mining landscape viewshed. Structural closures would be built on site to the visual resource management specifications in the White Sands Resource Management Plan. In addition, visible structures associated with safeguarding closures would be painted with appropriate environmental colors, as designated by the BLM, to reduce contrast with the surrounding landscape. Existing access routes would be used to the greatest extent possible to access the mine features proposed for closure. Therefore, safeguarding activities would have negligible impacts on visual resources and would maintain the existing character of the mining landscape viewshed.

3.1 General Project Settings

The Caballo Mountains and Rincon mining districts are located in southwest New Mexico within the Chihuahuan Basins and Playas (Griffith et al. 2006) region. The project area is in the foothills of the Caballos Mountains, with an elevation ranging from 4,724 to 4,987 feet above sea level. The project area consists of the Chihuahuan Desert with hills and mountain tops. A large canyon, Green Canyon, intersects the northern part of the project area. Green Canyon has steeply sloped walls and limestone escarpments with pervasive natural dissolutions/limestone caves. The floor of Green Canyon is typical of an ancestral river bottom and littered with alluvial cobbles and gravels sequestering a stratum of coarse-fine silty sand. Average temperatures in the general area range from a minimum of 21.0°Farenheit (F) in January to a maximum of 95.0°F in July, with annual precipitation in the area averaging 9.77 inches (WRCC 2023).

3.2 Cultural Resources

As a federally funded program, the Proposed Action is subject to Section 106 (54 USC 306108) of the NHPA (54 USC 300101 et seq. and its implementing regulations 36 CFR Part 800: Protection of Historic Properties, as revised August 2004). To comply with Section 106 of the NHPA, an archaeological survey is required to identify any historic properties that would be impacted by the Proposed Action. A Class III cultural resource inventory, including archival research, records review, and a 100 percent pedestrian survey of the entire area of potential effect (APE), is typically required to comply with Section 106. During the field inventory, contractors evaluate and provide preliminary listing recommendations for National Register of Historic Places (NRHP) eligibility; through the consultation process with the State Historic Preservation Office (SHPO), final NRHP eligibility determinations are made in accordance with Section 106. Class III archaeological survey methods were conducted in accordance with Procedures for Performing Cultural Resource Fieldwork on Public Lands in the Area of New Mexico BLM Responsibilities (BLM 2005a) and Standards for Survey and Inventory (NMAC 2006) within the APE for the Proposed Action. The AML Program will complete the cultural resources consultation process on behalf of the OSMRE with the SHPO under the terms of a programmatic agreement.

As finite and non-renewable resources, cultural resources deteriorate over time and cannot be replaced. Cultural resources inventory surveys identify, document, age (as precisely as possible), map, and classify isolated artifacts, isolated features, and archaeological sites. The APE, including all mine features proposed for safeguarding, encompasses approximately 796 acres; inventory surveys contribute to the extant archaeological knowledge of human prehistory and history in north-central New Mexico. Red Hill Mining District Sites within the Caballo Mountains contain multiple cultural

and temporal affiliation types: Unspecified Prehistoric, Anglo/Euro-American Mining Sites, Statehood-WWII, WWII – Recent Historic Period, Hispanic and U.S. territorial recent historic periods. The APE includes 796 acres of BLM and NMSLO designated lands, PaleoWest, LLC (hereafter PaleoWest) completed the inventory of these lands under BLM Cultural Resource Use Permit Number 247-2920-20(BLM), New Mexico State Land General Archaeological Investigation Permit Number NM-24-210-S, and New Mexico Cultural Resources Information System (NMCRIS) Activity Number 152175. The inventory occurred from September 2022 through February 2023. Eight (8) previously recorded sites were revisited within the 796-acre APE; and twenty-four (24) new sites (LA202364–LA202387) were identified during the current investigation. Under NRHP criteria, PaleoWest recommended a total of seven (7) sites as eligible for listing in the NRHP and 13 are recommended not eligible (Paleowest 2023). Five (5) sites are recommended eligible under Criterion D (LA202368, LA202376, LA202377, LA202382, and LA202383), one site is recommended eligible under Criteria C and D (LA202370), and one site is recommended eligible under Criteria A, C, and D (LA202365). Ninety-three isolated occurrences were identified in the project areas. Isolated occurrences were not recommended eligible for inclusion in the NRHP.

A Cultural Resources Inventory of an 862.21-acre survey block for the AML Red Hill Mine Safeguarding Project was completed by PaleoWest in February 2023. By law, these reports are proprietary, and report contents are incorporated into this EA by reference. The PaleoWest Cultural Resources Report, along with the AML Program's eligibility and effect determinations, were submitted to the New Mexico SHPO for review and concurrence.

3.3 Water Resources

The CWA of 1972 regulates activities that have the potential to impact Waters of the United States (WOTUS). Under the CWA, the U.S. Army Corps of Engineers (USACE) has jurisdiction over WOTUS. These jurisdictional waters include those that have a "significant nexus" to traditional navigable waters. Section 404 of the CWA regulates discharge of dredged and fill materials within the ordinary highwater mark (OHWM) of WOTUS and is administered by the USACE. Section 401 of the CWA regulates water quality and, for the purposes of the Proposed Action, is administered by the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB).

The National Wetlands Inventory (NWI) mapped the project area as mostly riverine wetlands (USFWS 2023). There were no potential wetlands or surface water located within the project area (Appendix A Biological Evaluation). There were intermittent and ephemeral drainages that carry stormwater runoff from the hills within the project area to the surrounding areas, particularly the Rio Grande (Figure 2).

3.4 Vegetation

The project area is mapped as Chihuahuan desert scrub and semidesert grassland vegetation communities (Brown 1994). The areas surrounding the mine features are relatively barren compared to other portions of the project area due to historic mining disturbance.

Dominant vegetation in the project area includes Creosote bush (*Larrea tridentata*), whitethorn acacia (*Vachellia constricta*), and ocotillo (*Fouquieria splendens*) (BRIC 2024). Sub-dominant vegetation includes mariola (*Parthenium incanum*), Warnock Condalia (*Condalia warnockii*), tarbush (*Flourensia cernua*), Great Plains prickly pear (*Opuntia polyacantha*), Engelmann prickly pear (*Opuntia engelmannii*), desert agave (*Agave americana*), four-wing saltbush (*Atriplex canescens*), crucifixion thorn (*Canotia holacantha*), desert fluffgrass (*Dasyochloa pulchella*), silverleaf

nightshade (*Solanum elaeagnifolium*), sand dropseed (*Sporobolus cryptandrus*), desert Christmas cactus (*Cylindropuntia leptocaulis*), common sotol (*Dasylirion wheeleri*), fishhook barrel cactus (*Ferocactus wislizeni*), strawberry hedgehog cactus (*Echinocereus stramineus*), nylon hedgehog cactus (*Echinocereus viridiflorus*), cloak fern (*Astrolepis cochisensis*), Torrey's jointfir (*Ephedra torreyana*), banana yucca (*Yucca baccata*), slim tridens (*Tridens muticus*), skunkbush sumac (*Rhus trilobata*), bush muhly (*Muhlenbergia porteri*), beargrass (*Nolina microcarpa*), and threadleaf snakeweed (*Gutierrezia microcephala*). There were no noxious weeds observed within the project area.

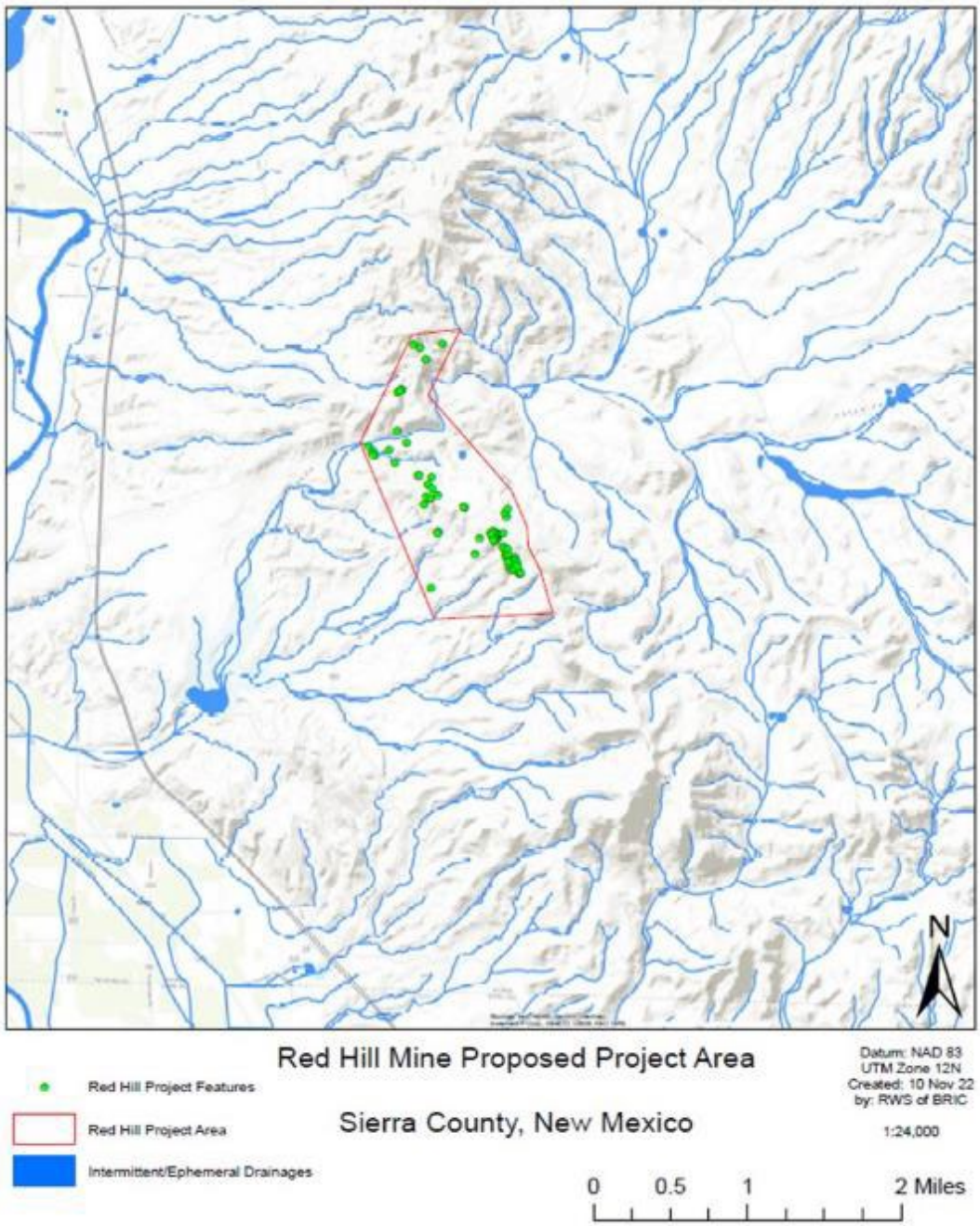

Figure 2. Drainages traversing Red Hill Mine project area.

3.5 Livestock

The project area falls within two adjacent grazing allotment areas—Green Canyon and Apache Canyon. The Green Canyon Grazing Allotment (Number 06110) has a grazing authorization for 13 cattle year-round, or 157 Animal Unit Months (AUMs). The Apache Canyon Grazing Allotment (16023) has grazing authorization for 90 cattle year-round, or 1,079 AUMs.

3.6 Wildlife

Wildlife observed in the project area included five (5) bird species and two (2) mammal species. Species observed included black-throated sparrow (*Amphispiza bilineata*), canyon wren (*Catherpes mexicanus*), mourning dove (*Zenaida macroura*), rock wren (*Salpinctes obsoletus*), turkey vulture (*Cathartes aura*), desert cottontail (*Sylvilagus audubonii*), and black-tailed jackrabbit (*Lepus californicus*). Additionally, tracks and/or scat were observed from mountain lion (*Puma concolor*), black bear (*Ursus americanus*), and desert bighorn sheep (*Ovis canadensis nelsoni*) during a site visit by NM Department of Game and Fish (communication with Matt Wunder, NMDGF 2023). One mine feature has a large, cave-like entrance where bighorn sheep tracks were observed and appears to be used by large mammals as a shelter and a refuge during the summer heat and adverse weather.

Bat surveys were conducted by Bat Conservation International (BCI) in the Rincon project area, located in the Caballo Mountains on July 29–30, 2014. In 2014, BCI surveyed a total of 20 abandoned mine features following standardized protocols and safety procedures, for the purpose of providing closure recommendations. In three instances, however, a group of features (either two or three) were found to be connected and were assessed with a single survey representing the group, resulting in fifteen unique sites that received a comprehensive biological survey. The full report can be viewed as Appendix C in the BA/BE (Appendix A). The BCI conducted an updated bat habitat assessment for several features documented in the 2014 report, and any new mine features found during the cultural resource survey in 2023. The updated bat habitat assessment report surveyed 29 distinct features with 36 openings following standardized protocols and safety procedures for providing subterranean biological data and closure recommendations. The full report can be viewed as Appendix C in the BA/BE.

Of the 29 separate sites that received comprehensive biological surveys, ten sites contained bats (sometimes in association with other signs of bat use, such as guano and/or moth wings), and an additional eight sites contained other bat signs. Eleven sites contained no bats or any sign of bat use. Townsend's big-eared bats (*Corynorhinus townsendii*; a special status species), big brown bat (*Eptesicus fuscus*), canyon bat (*Parastrellus hesperus*), and genus *Myotis* (species unknown) observed within the project area at the time of survey (Appendix C – BA/BE). The Townsend's big-eared bat is discussed below under the Special Status Species Section.

BCI's primary objective was to classify bat habitat; habitat classifications guide BCI's closure recommendations, and the seasonal component for closure timing. In general, features with moderate to excellent bat habitat are recommended for bat-friendly closures, and features with no bat habitat to marginal bat habitat are recommended for destructive closures. Within the project area, bat habitat was classified as poor for nine features, marginal for six features, moderate for five features, good for six features, and excellent for two features (Appendix B – BCI Closure Recommendations and Claimant Requests for Proposed Mine Feature Safeguarding). BCI recommended 15 sites for bat-friendly closures to protect the habitat within and allow for continued bat use. These fifteen sites total twenty entrance portals. Four of these bat-friendly closures are recommended to occur during the cold

season, “bat compatible closure cold season” (BCWs), when bats are not active and potentially aggregated in maternity colonies. The recommended date range for cold closures to occur is from October 1 through March 31 (Appendix A – BA/BE; Appendix B – BCI Closure Recommendations and Claimant Requests for Proposed Mine Feature Safeguarding). One of the bat-friendly closures is recommend to occur during warm season; April 1 through September 30. Nine of these bat-friendly closures are recommended to occur during any time.

Two sites have been recommended for destructive closure. Of these two sites, one is recommended for “destructive closure warm season” and one for “destructive” closure any time”. The recommended date range for warm season closures to occur is from April 1 through September 30.

For the warm season destructive closure, it is critical to first conduct exclusion techniques on the site to ensure any bats that might be present have an opportunity to exit the site before it is closed. If exclusion is not conducted, there is a possibility that bats could be trapped and destroyed during the closure. Exclusion techniques are detailed in BCI's "Managing Abandoned Mines for Bats" publication.

3.7 Special Status Species

Special status species include those species that are (1) federally listed as threatened or endangered, are candidates for listing as federally threatened or endangered, or are species proposed for listing under the provisions of the ESA, (2) species listed by the State of New Mexico as threatened or endangered, or (3) those designated by the BLM’s State Director as sensitive. The BLM Las Cruces District Office has prepared a list of special status species that focuses management efforts on the mitigation of potential impacts to species and associated habitats, under a multiple use mandate. Prior to the biological survey, the U.S. Fish and Wildlife Service (USFWS), the New Mexico Department of Game and Fish (NMDGF), the BLM Las Cruces District Office, and the New Mexico Rare Plant Technical Council (NMRPTC) databases were reviewed to determine potential occurrence of BLM sensitive and state or federal proposed, threatened, endangered, and candidate species in the project area (Appendix A BA/BE). Specifically, the Information, Planning, and Consultation System (IPaC) planning tool from the USFWS (New Mexico) was used to obtain a list of federally threatened, endangered, and candidate species, and designated critical habitat for the project area (USFWS 2022; Appendix A, BA/BE). The BISON-M database (http://www.bison-m.org/) was searched for state-listed and BLM sensitive fauna species. The State Endangered Plant Species List was searched for information on potential state endangered flora species within Grant County (NM EMNRD Forestry Division).

Species descriptions for the targeted species were then developed, and habitat requirements were compared to the habitat found in the project area to identify which species were likely to occur. Species considered unlikely to occur and for which suitable habitat does not exist within the project area, were removed from further consideration. A list of target species—those species that are likely to occur or have potential habitat within the project area—was developed from these comprehensive lists prior to the biological survey. The project area does not contain any federally listed species. There are no designated or proposed critical habitats within the project area (USFWS 2022; Appendix A – BA/BE).

Based on the biological evaluation and assessment and the biological survey (Appendix A – BA/BE), the following determinations were made:

Federally endangered, threatened, candidate, or proposed species: Due to the lack of federal critical

habitat, suitable habitat, or occurrence records, it was determined that none of the federally endangered, threatened, and proposed species were likely to occur within the project area (Appendix A, BA/BE).

State endangered, threatened, or BLM LCDO sensitive species: Due to the lack of general habitat or occurrence, all but one species will be carried forward for further analysis in this EA (BRIC 2024). The Townsend's big-eared bat, BLM sensitive species, has the potential to occur within the project area.

Townsend's big-eared bats occupy a wide range of habitats ranging from sagebrush, desert scrub, and chaparral flats to coniferous and deciduous forests including pinyon-juniper and ponderosa pine-dominated systems. These bats are cliff dwellers and generally use diurnal roosts within cracks and crevices of cliffs and canyons, as well as abandoned mine shafts and adits (BISON- M 2022). This bat is known to occur in the project area. Townsend's big-eared bat individuals and/or sign was documented at thirteen mine features during 2014 surveys (BCI 2014). A total of 51 Townsend's big-eared bats were observed roosting in mine features during BCI's surveys within the project area (Appendix A – BA/BE). Overall, bat use of the occupied sites appears largely isolated to summer day roosting and/or night roosting by a small number of individuals. One site, however, contained a significant cluster of bats that likely represents an important maternity colony.

3.8 Geology/ Soils

The Caballo Mountains are located in the south-east area of Sierra County, NM. Geologic units present in the project area are (from oldest to youngest) the Ordovician El Paso Formation and Montoya Formation, the Silurian Fusselman Dolomite, the Pennsylvanian Red House, Nakaye, and B-Bar Formations, the Permian Abo Formation, the Eocene Love Ranch Formation, the Plio-Pleistocene Palomas Formation, and several unnamed post-Palomas Quaternary sediments (Seager and Mack, 1991; 1998; 2003). See Appendix C (paleontology assessment) for descriptions of these geologic units.

There are four soil map units within the project area (NRCS 2022; Table 1). They are described in the Sierra County, New Mexico Soil Survey (NRCS 2022). Soils within the project area are primarily comprised of Rock outcrop-Torriorthents association, extremely steep (NRCS 2022; Table 1). This complex typically occurs on ridges and alluvium fans in regions that receive an average of 8 to 13 inches of precipitation annually. The parent materials are igneous, metamorphic, and sedimentary rock, and mixed gravelly alluvium. This complex is well-drained, has no frequency of flooding or ponding, and depth to the water table typically exceeds 80 inches.

Table 1.Soil types within the Red Hill Mine Safeguarding Project area (NRCS 2022).

Map Unit	Parent Material	Acres in Project area	Percent of Project area
Courthouse-Rock outcrop association, very steep	Mixed gravelly alluvium derived from sandstone and shale; igneous, metamorphic and sedimentary rock	21.1	2.7%
Nickel very gravelly fine	Mixed gravelly	280.8	35.3%

Map Unit	Parent Material	Acres in Project area	Percent of Project area
sandy loam, very steep	alluvium		
Rock outcrop, extremely steep	Igneous, metamorphic and sedimentary rock	8.8	1.1%
Rock outcrop-Torriorthents association, extremely steep	Igneous, metamorphic and sedimentary rock; mixed gravelly alluvium	485.2	61.0%
Total		**795.9**	**100%**

3.9 Air Quality

The project area is within the New Mexico portion of the El Paso-Las Cruces-Alamogordo Interstate Air Quality Control Region 153 (AQCR). This ACQR is composed of Doña Ana, Otero, Sierra, and Lincoln counties. The total area of Air Quality Control Region 153 is 18,335 square miles. ACQR 153 has attainment status to National Ambient Air Quality Standards (NAAQS) for all criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide (EPA 2023).

3.10 Human Health and Safety

Abandoned mine features throughout the project area present serious threats to human health and safety (Kretzmann 2009). Approximately 35 Priority 1(P1) mine features in the project area have AML Program-designated danger levels of extreme, high, or moderate, and the hazards are not always obvious to the public. Unstable ground and open/inadequately sealed mine features, such as shafts, highwalls, adits/portals, and deteriorated structures, present serious fall and/or entrapment hazards. Within mines, dangers include falls into winzes and water bodies, collapses or cave-ins, poor air circulation, poisonous gases, insufficient oxygen, deteriorated explosives, wildlife, and the potential to become disoriented or lost in the mine workings.

3.11 Socioeconomic Conditions and Environmental Justice

The region of influence includes Sierra County, New Mexico and the City of Truth or Consequences. Potential socioeconomic consequences from the Red Hill Mine safeguarding activities would be concentrated within the county and more specifically the communities of Truth or Consequences and Arrey.

Potential socioeconomic consequences from the Red Hill Mine safeguarding activities would be concentrated within the county and more specifically the community of Derry. The information on socioeconomic conditions was derived from the EPA's Environmental Justice Screening tool (https://ejscreen.epa.gov/mapper/, accessed February 2024) and verified through the Justice40 Initiative screening tool (https://screeningtool.geoplatform.gov/en/#13.71/35.40199/-106.15155, beta version accessed February 2024). The EJ screening tool uses American Community Survey (ACS) and U.S. Census data to provide environmental and demographic characteristics of a designated area.

The Justice40 Climate and Economic Justice Screening Tool (CEJST) identifies census blocks that meet qualifications to be classified as disadvantaged. Both tools use the most recent available U.S. Census Bureau data at the block-group level to identify demographic characteristics of a study area defined by the user. For this project area the most recent ACS data from the EJ Screening tool and CEJST was from 2018–2022.

3.11.1 Demographic and Trends

The population in Sierra County has decreased approximately four (4) percent in the last 10 years (Table 2). The population of Arrey (town approximately 3 miles west of Red Hill Mine) has increased more than 27 percent of the population. Truth or Consequences has lost about 6.5 percent of the population over the last 10 years.

Table 2. Population and Population Trends from 2010 to 2020.

	2010	2020	Annual Rate of Change 2010–2020
Sierra County	11,988	11,576	-3.44%
Arrey	232	296	27.59%
Truth or Consequences	6,475	6,052	-6.53%
New Mexico	2,059,179	2,117,522	2.83%

Source: U.S. Census Bureau 2010, 2020

While demographic data of Sierra County and Truth or Consequences shows the majority of the population as Caucasian ethnicity (64.8 percent and 63.3 percent), the majority of Arrey's population is of Hispanic ethnicity (90.2 percent; U.S. Census Bureau 2024a). In Truth or Consequences, a total of 29 percent of the population are Hispanic, 1 percent are Black or African American, 1 percent identify as American Indian, 2 percent identify as Asian, and 4 percent are reported as two or more races (U.S. Census Bureau 2024a).

3.11.2 Employment and Income

Sierra County encompasses nearly 2.7 million acres, of which 64 percent of the land is owned by the U.S. government and 11 percent is owned by the State of New Mexico, and 25 percent is privately owned (Sierra County 2017). Land ownership in Sierra County influences the economy of the county. In 2018, about 75 percent of all workers in the county were employed in the Private sector, while nearly 18 percent were employed in Government and government enterprises, and 7 percent were in the Farm Sector (NMSU 2020). Within the private sector, local and state governments were the greatest sources of employment in the county. In the public sector, retail trade, accommodation and food services, and construction were the largest employers in the county. Active-duty military employment accounted for less than 1 percent, and local government approximately 10 percent of total employment. Federal civilian jobs comprised about 2 percent of the work force, and State government employed nearly 6 percent (NMSU 2020). In 2022, approximately 85 percent of the population was estimated to be 16 or older (U.S. Census Bureau 2024b). A total of 38 percent of this population was in the labor force and 2 percent were considered to be unemployed. The median household income in Sierra County was $35,256.

The most common industries in Truth or Consequences, NM, are Education Services, Health Care and Social Assistance, Arts, entertainment, and recreation, and accommodation and food services, and retail (U.S. Census Bureau 2024b). The economy of Truth or Consequences has 2,170 (about 45 percent) in the work force and about 1 percent considered unemployed. The median household

income in Truth or Consequences is $28,685. A total of 30percent of individuals have income below the poverty level (U.S. Census Bureau 2024b).

3.11.3 Environmental Justic and Disadvantaged Communities

Under EO 12898, federal agencies must assess environmental justice for a proposed action as part of its mission. Air Force guidance for implementation of the EO is provided in the "Interim Guide for Environmental Justice Analysis" within the EIAP (USAF 1997). The objective of the EO is to identify and address the potential for disproportionately high and adverse health or environmental effects on minority and low-income communities due to the proposed action.

A 1-mile buffer around the proposed action area (digitized, approximate centroid) was assessed using the EPA online Environmental Justice Screen and Mapping Tool, Version 2.2 (EJSCREEN, EPA 2024). The majority of the population within the 1-mile assessment area has less than 50 percent minority, but the surrounding population has 85 to 95 percent minority (EPA 2024; Figure 3). The percent of the surrounding population that is considered to be of low-income ranges from 50 percent to the 95–100th percentile (EPA 2024; Figure 4). However, the overall low-income population is 53 percent which is more than the state of New Mexico average (EPA 2024).

Additional environmental justice indices assessed include:

- Environmental hazards such as particulate matter (PM 2.5) levels,
- Ozone level in the air,
- Diesel PM in air (national-scale Air Toxics Assessment [NATA]),
- Air toxics cancer risk (NATA cancer risk),
- Air toxics respiratory hazard index (NATA respiratory HI),
- Traffic proximity,
- Lead paint indicator (percent of pre-1960 housing),
- Proximity to a superfund site,
- Proximity to a risk management plan (RMP) facility,
- Proximity to a hazardous waste, and
- Wastewater discharge indicator.

Of the 12 Environmental Justice indices listed on the EPA Environmental Justice Screening and Mapping Tool (EPA 2024), Arrey is at or above the average compared to the rest of the country for 10 of the 13 indices; however, compared to the rest of NM, Arrey is relatively the same or lower for all indices, except hazardous waste proximity (Table 3).

Table 3. EPA EJScreen Environmental Indicators[1]

Environmental Justice Indexes	Value	State Average	National Average
Particulate Matter 2.5 ($\mu g/m^3$)	8.25	8.26	8.08
Ozone (ppb)	65	64.8	61.6
Diesel Particulate Matter ($\mu g/m^3$)	0.496	0.478	0.261
Air Toxics Cancer Risk	40	36	28
Air Toxics Respiratory HI	0.4	0.44	0.31
Toxic Releases to Air	130	180	4,600

Environmental Justice Indexes	Value	State Average	National Average
Traffic Proximity	480	630	210
Lead Paint (% Pre-1960 Housing)	0.66	0.55	0.3
Superfund Proximity	0.15	0.25	0.13
RMP Facility Proximity	0.12	.016	0.43
Hazardous Waste Proximity	26	16	1.9
Underground Storage Tanks	14	12	3.9
Wastewater Discharge	0.011	0.057	22

1EJScreen is a screening tool for pre-decisional use. Please see EJScreen documentation for discussion of data limitations.

Based on U.S. Census data and ACS data from the EJ Screening tool presented above, low-income populations are located within the project area. In addition to the EJ Screening Tool, the CEJST was used to identify potential disadvantaged communities in the project area. To be classified as a disadvantaged community, a census tract must be above the threshold for one or more environmental or climate indicators and it must be above the threshold for socioeconomic indicators. The study area is identified as disadvantaged in Climate, Health, and Legacy Pollution, with low income being 72 percent for the tract.

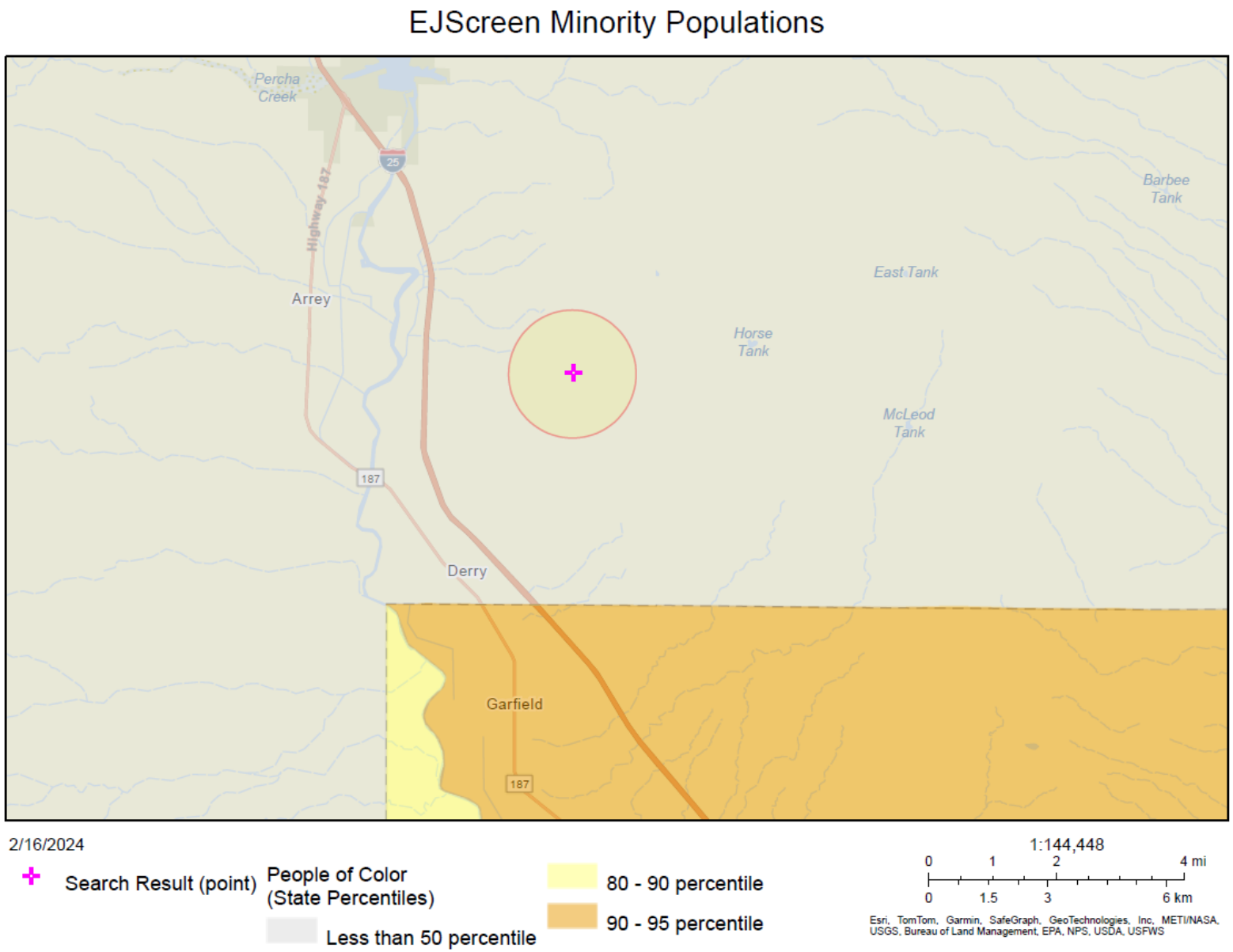

Figure 3. Minority population within a 1-mile buffer centered over the proposed project area.

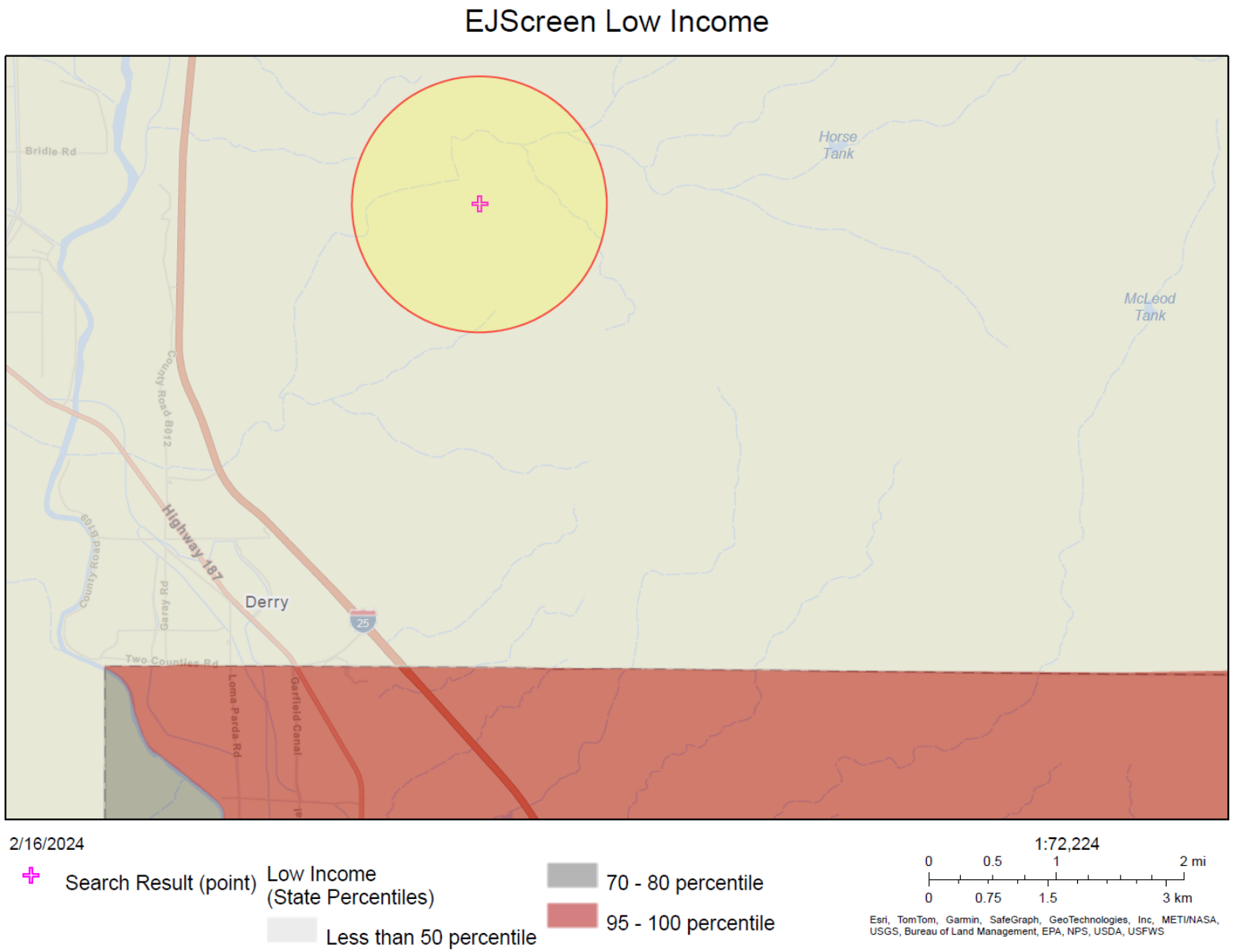

Figure 4. Low Income Population within a 1-mile buffer centered over the proposed project area.

4. ENVIRONMENTAL IMPACTS

This section evaluates the impacts of implementing the Proposed Action (Section 2.1) and the No Action Alternative (Section 2.2) on the Affected Environment (Sections 3.1 through 3.10).

4.1 Cultural Resources

Proposed Action
Prior to construction and safeguarding activities, avoidance buffers would be established and would extend up to 50 feet (15 meters) from edge of documented cultural resources. In addition, high-visibility barriers or other indicators could be installed where construction access routes pass near avoidance areas. Additional mitigation measures listed in Section 6 would be followed to avoid impacts to cultural resources. Safeguarding closures are only recommended for hazardous mine features within the APE, and most historic and cultural sites within the APE would remain unchanged. Structural safeguarding closures of hazardous mine features, such as PUF plugs, gates, grating, and cupolas, would be expected to preserve and protect cultural and historic resources within mine features from inappropriate feature ingress, vandalism, and theft. Overall, minimal impacts to the mining landscape and sites eligible for NRHP inclusion would occur. The NRHP eligible sites (LA202376, LA202377, LA202382, and LA202383) with no mining features would not be affected.

No adverse effects to historic properties would be expected to result from the proposed safeguarding effort. The New Mexico SHPO concurred with the recommendations of eligibility and effects as proposed (Appendix D).

No Action Alternative
Under the No Action Alternative, no site reclamation would occur; historic and cultural resources would continue to deteriorate at the present rate, and risk of inappropriate mine feature ingress, vandalism, and theft would remain.

4.2 Water Resources

Proposed Action
No surface waters are located within the project area and no safeguarding activities would occur within the limits of OHWMs. Various ephemeral drainages in the project area could be crossed with construction equipment; however, access would be confined within existing roadways and would not result in further disturbance to arroyos/drainages. The Proposed Action would have no impacts to WOTUS and no direct or indirect effects to the hydrology of drainages within the project area.

No Action Alternative
Under the No Action Alternative, no site reclamation or impacts to WOTUS or hydrology would occur.

4.3 Vegetation

Proposed Action
Safeguarding activities would have minimal impacts to vegetation because existing roads would be used as much as possible to avoid ground disturbance and most of the mine features have sparse vegetation. Additionally, the project footprint is small in size for each mine closure, as a disturbance buffer of 30 feet around mine features is typical for this type of safeguarding project. Therefore,

minimal impacts to vegetation would occur during the construction phase of the Proposed Action due to the existing lack of vegetation at sites and the small project footprint.

Following mine feature safeguarding, disturbed areas would be seeded with a native seed mix to reduce the potential for noxious weed colonization in the project area. All native seed mixes would be selected in coordination with NMSLO and BLM on state and federal lands, respectively. Revegetation of sites disturbed by historic mining activity and the Proposed Action would reduce the erosion potential of soils and improve the visual quality of the landscape.

No Action Alternative

Under the No Action Alternative, no site reclamation would occur. Additionally, no native vegetation restoration and associated benefits to soil protection and the landscape viewshed would occur.

4.4 Livestock

Proposed Action

The Proposed Action would have minimal impacts to livestock grazing. Livestock could be temporarily displaced during the project construction phase, but no changes to AUMs would be expected. Mine openings and potential for collapsing of mine features could present an entrapment and cause injury or mortality to livestock. Safeguarding efforts to fill in these hazards or prevent access, reducing potential hazards that could impact livestock. All grazing permittees on both federal and state lands would be notified prior to safeguarding activities.

No Action Alternative

Under the No Action Alternative, no site reclamation would occur, and unabated mine features such as prospect pits with sheer sidewalls or open shafts would continue to present a livestock entrapment and injury/mortality hazard.

4.5 Wildlife

Proposed Action

Wildlife within or near the project area could be displaced during the construction phase of the Proposed Action; however, impacts would be minimal due to the temporary nature and limited scope of the project, as well as the extensive availability of adjacent similar habitat. Safeguarding of hazardous features with wildlife-compatible closures would reduce the potential entrapment and injury, or mortality hazard these features could pose to wildlife. The mine feature that has a large, cave-like entrance and may be used by large mammals should have recessed bat gating installed at this site to allow for continued access by wildlife.

No active avian nests were located during the biological survey. However, caution should be taken if project construction occurs during the principal avian breeding season (1 March to 15 August). Disturbance of soil and vegetation could result in the destruction of bird nests and/or the mortality of eggs or nestlings. Operations should occur outside the principal avian breeding season to reduce potential impacts on nesting birds. Avoiding construction during the breeding season is perhaps the easiest solution due to nest surveys being time and labor intensive and locating active nests in the project area would be difficult. Furthermore, if nests are found late in the season, the approval processes may not be completed until the breeding season is over, and nesting could begin between the time an area is searched and when vegetation is disturbed.

BCI's closure recommendations would be followed when installing closures in order to allow for bat

passage within abandoned mines across the project area. Because safeguarding efforts included in the Proposed Action would utilize BCI's closure recommendations, including closure type and timing, only temporary and localized impacts would be expected during construction. Disturbance and displacement may occur during the construction phase, but no impacts to foraging (construction would occur during daylight hours) or permanent displacement would be expected. Bat-friendly closures would exclude inappropriate human ingress and prevent human disturbance of mine features, while allowing for continued ingress and egress by bat species. Long-term beneficial impacts to bats would be expected from this safeguarding effort since suitable bat habitat would be protected. Any subsequent recommendations forthcoming in updated survey reporting would be followed.

No Action Alternative

Under the No Action Alternative, no site reclamation would occur, and continued inappropriate human ingress to mine features could disturb bats and bat habitat and disrupt utilization of mine features. Unabated mine features, such as prospect pits with sheer sidewalls or open shafts would continue to present a wildlife entrapment and injury/mortality hazard.

4.6 Special Status Species

Proposed Action

Federally endangered, threatened, candidate, or proposed species: The Proposed Action would have no effect on the following species: Mexican spotted owl, Mexican wolf, yellow-billed cuckoo, Monarch butterfly, southwestern willow flycatcher, northern aplomado falcon, Todsen's pennyroyal, Rio Grande silvery minnow, Rio Grande cutthroat trout, Gila trout, or Chiricahua leopard frog because of lack of suitable habitat, which makes occurrence in the project area unlikely (Appendix A-BA/BE).

State endangered, threatened, or BLM LCDO sensitive species: The Proposed Project would have no impacts on state threatened or endangered or BLM sensitive species, with the exception of the Townsend's big-eared bat. The Townsend's big-eared bat is known to occur in the project area and suitable habitat is present in the project area. Refer to the referenced BA/BE for additional information and analysis regarding these species (Appendix A).

The Proposed Action may affect individuals of the BLM sensitive Townsend's big-eared bat species, but is not likely to lead towards federal listing or a loss of viability for the following reasons: 1) individual mine closure stipulations developed by BCI would be followed and would minimize impacts to Townsend's big-eared bats (see wildlife section for more detail); 2) disturbance would be temporary and localized; and 3) disrupted individuals could relocate to adjacent, undisturbed habitat. The overall impact of safeguarding mine features and protecting suitable bat habitat with wildlife-friendly closures would be expected to have long-term beneficial impacts to bats since suitable bat habitat would be protected. Any subsequent recommendations forthcoming in updated survey reporting would be followed.

No Action Alternative

Under the No Action Alternative, no site reclamation would occur, and continued inappropriate human ingress to mine features could disturb and disrupt bat habitat and utilization of mine features by special status bat species. No impacts to special status avian species would occur under the No Action Alternative.

4.7 Geology/ Soils

Proposed Action

Due to the mining history of the project area, all sites proposed for closure are located on previously disturbed ground surface. At many of the hazardous abandoned mine features, the ground surface is characterized by exposed bedrock, man-made spoil piles, and minimal vegetation growth.

Temporary ground disturbance would be limited to the immediate site area of the mine feature proposed for closure within the project area; a disturbance buffer of 30 feet around mine features is typical for this type of safeguarding project. Existing access routes would be utilized to the greatest extent possible and overland travel would be utilized as a last resort to access mine features proposed for closure; limited overland access by construction equipment would cause localized and minor impacts, such as soil compaction and increased potential for surface runoff and soil erosion.

No Action Alternative

Under the No Action Alternative, no site reclamation or impacts to geology or soils would occur. Therefore, existing conditions would stay the same and there would be no impacts to geology or soil

resources.

4.8 Air Quality

Proposed Action

The Proposed Action could involve a temporary increase in emissions generated from vehicles and use of construction equipment to complete the safeguarding activities. Gasoline and diesel-powered vehicles and welding/construction equipment would generate emissions and fumes, but these levels are anticipated to be low and in compliance with local and federal emission standards. Access to the project area is via dirt two-tracks, and fugitive dust could be generated by vehicle travel. Fugitive dust could also be generated during backfilling and when loading trucks with soils for transport. Construction actions would occur at a pace to allow resettling of particulate matter within the immediate vicinity of the project area. Temporary and localized impacts to visibility and air quality would be expected during the construction phase but would end once safeguarding activities are complete. No impacts to Class I Air Sheds are anticipated due to the temporary nature and limited scope of the Proposed Action.

No Action Alternative

Under the No Action Alternative, no site reclamation would occur, and air quality within the project area would remain unchanged.

4.9 Human Health and Safety

Proposed Action

The Proposed Project's purpose is to safeguard the general public from hazards associated with historical mining features throughout the project area. The project would install features that would limit access to dangerous and hazardous mine features. Therefore, the proposed action would have positive long-term impacts to human health and safety due to the increased safety measures implemented.

No Action Alternative

Under the No Action Alternative, no site reclamation would occur, and hazardous abandoned mine features would remain open and present a continued risk to the health and safety of the public. The No Action alternative would therefore have a negative, long-term impact with potentially severe and significant consequences to human health and safety concerns.

4.10 Socioeconomic Conditions and Environmental Justice

Proposed Action

The proposed safeguarding the general public from hazards associated with historical mining features throughout the project area would not change the community structure or lands for other uses. The project would install features that would limit access to dangerous and hazardous mine features. The proposed action would have positive long-term impacts to human health and safety due to the increased safety measures implemented. Therefore, the proposed safeguarding actions at Red Hill Mine would not result in disproportionate negative impacts to low-income or minority individuals or populations.

No Action Alternative

Under the No Action Alternative, no site reclamation would occur, and hazardous abandoned mine

features would remain open and present a continued risk to the health and safety of the public. The No Action Alternative would not disproportionately impact low-income or minority individuals or populations. The lack of reclamation to sites would not benefit the local economy and the existing conditions discussed in section 3.11 would remain unchanged. Therefore, the socioeconomics of the region of influence would remain unchanged and would not be impacted under the No Action Alternative.

5. CUMULATIVE IMPACTS

Under NEPA, cumulative impacts are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The Office of Surface Mining requires that potential cumulative impacts from the proposed actions be identified for each of the resource values so as to not overlook any impact resulting from the "fragmentation" of actions.

Past, present, and reasonably foreseeable future activities within the project area include mineral exploration and mining, cattle grazing, wide-spread wood cutting, rock collecting, metal detecting, nature enjoyment, hunting, camping, and All-Terrain Vehicle use. Past and continued mining activities throughout the project area have resulted in multiple areas for potential safety hazards.

The effects of past, present, and reasonably foreseeable future actions in combination with the Proposed Action would lead to beneficial cumulative impacts for the preservation of the area as an historic mining landscape, an area of cultural significance, and a bat habitat preservation area. These actions will also preserve its continued use as a recreational area by implementing safeguards for health and human safety within the project area. Continued use of the land for future recreational activities is expected, therefore, the safeguarding measures outlined under the Proposed Project would reduce risks associated with continued human health and safety issues.

The implementation of the No Action alternative would have no cumulative impacts on the resources in the proposed project area. Under the No Action Alternative, no site reclamation would occur, and hazardous abandoned mine features would remain open and present a continued risk to the health and safety of the public.

6. MITIGATION/AVOIDANCE

This section recommends mitigate measures to avoid potential adverse impacts of the Proposed Action (Section 2.1).

6.1 Cultural Resources

- Prior to construction and safeguarding activities, avoidance buffers would be established and would extend up to 50 feet (15 meters) from edge of documented cultural resources.
- To ensure protection of all cultural resources and maintenance of avoidance areas, an archaeologist along with the AML project coordinator would be on-site during construction activities. If construction activities encounter any previously unrecorded archaeological deposits or features, the Contractor should terminate all operation in that immediate area (100 ft radius, 30 m) until AML notifies the appropriate land management agencies and Tribes. Any unanticipated discoveries would be left in place pending further evaluation and consultation with the BLM-LCFO, NMSLO, SHPO, and the tribes.

- . Mine features not recommended for closure and all other cultural resources, such as foundations, artifact concentrations, tent pads, claim markers, and refuse deposits would be avoided during safeguarding activities.
- Avoidance areas and off-road access would be clearly defined; there are no off-road improvements allowed.
- If human remains are encountered during construction and safeguarding activities, all activity must cease in the vicinity and the BLM-LCDO or NMSLO and the appropriate law enforcement agency should be contacted immediately.
- Mine features proposed for closure would be safeguarded, but visible evidence of the features would remain to preserve the viewshed of the historic mining landscape.

6.2 Water Resources

- No safeguarding activities would occur within the limits of OHWMs, but various intermittent and ephemeral drainages would be crossed with vehicles and construction equipment. However, vehicles would be confined within existing roadways and would not result in further disturbance to ephemeral or intermittent drainages. As a preventative avoidance measure, construction access would only occur during dry conditions (i.e., no access would occur after rain events until ground conditions are dry).
- Actions would be taken to avoid spills. Equipment would be refueled at least 100 feet from drainages. Fuel, oil, hydraulic fluid, or substances of this nature would be stored within sealed, storage containers or facilities that are located outside the drainages. Leaking equipment would be removed from the project site until repaired and cleaned.

6.3 Vegetation

- To minimize the impacts of the Proposed Action to vegetation, existing access routes would be used to the greatest extent possible to access the mine features proposed for closure. The disturbance buffer during construction would be highly localized (within 30 feet of the mine features proposed for closure). Any tree-trimming or removal for equipment access would be localized and minimized to the greatest extent possible.
- Following construction, site reclamation efforts would involve native seeding and mulching per the BLM's specifications to reestablish the native vegetative community; reclamation would occur at areas where backfill is removed in addition to the backfilled mine features. All seed, mulch, matting, straw, and/or hay used would be certified weed-free of invasive and/or noxious weeds. Vehicles and construction equipment would be inspected and cleaned before and after use on public lands to limit potential for spread of weeds. During the project construction phase, reclamation sites would be monitored for the presence of invasive/noxious weeds; if weeds are identified, the BLM LCDO would be notified so that BMPs could be identified and utilized for invasive species control.
- Staging areas would be limited to existing roads, designated pullouts and parking areas, and already disturbed areas. Any disturbed slopes would be reseeded with native upland species.

6.4 Livestock

- Although livestock displacement could occur during the construction phase of the Proposed Action, the disturbance would be temporary in nature and limited in scope. No livestock mitigation or avoidance measures are recommended.

6.5 Wildlife

- If construction activities for the Proposed Action occur outside the principal avian breeding and nesting season, little to no impacts to avian species would be anticipated. As a mitigation/avoidance measure, the project construction phase would occur outside of the principal avian breeding and nesting season (1 March to 1 September). If constructed during the avian breeding season, disturbance of soil and vegetation could result in the destruction of bird nests and/or the mortality of eggs or nestlings. If construction is to occur during avian breeding and nesting season, pre-construction nest surveys would be required to avoid direct impacts to avian species. If active nests are located during the pre-construction survey, consultation with the BLM and USFWS would occur; to avoid disturbance, construction activities at the nest sites would be delayed until fledging occurs, or a nest removal permit would be obtained from the USFWS.
    - For active nests, buffer zones would be established to minimize disturbance. Songbird and raven nests should have a minimum 100-foot buffer.
- Closure recommendations generally fall into bat-friendly or destructive closure categories and include a seasonal component that recommends the closure to occur either during the warm season, cold season, or at any time to protect the bat habitat within and allow for continued bat use.
    - Sites categorized as bat-friendly closures would occur during the cold season, “bat compatible closure cold season”, when bats are not active and potentially aggregated in maternity colonies (October 1 to March 31).
    - Sites recommended for “destructive closure warm season” would occur is from April 1 through September 30. Exclusion techniques would be conducted prior to closing the sites to ensure any bats that might be present have an opportunity to exit the site before it is closed. If exclusion is not conducted, there is a possibility that bats could be trapped and destroyed during the closure. Exclusion techniques detailed in BCI's "Managing Abandoned Mines for Bats" publication should be followed.
- BCI recommendations for reducing impacts to bats from the construction of structural barriers that are based on habitat potential would be followed.
    - For example, mining features that are not associated with any potential bat habitat have no closure stipulations recommended (i.e., mining features can be closed at any time by any means deemed necessary).
    - For features that possess good habitat, closure was recommended to take place using an approved bat compatible closure structure. Construction features for gates at mine entrances would be designed in accordance with BCI recommendations to allow access of bats and other small mammals and reptiles but would not be wide enough to allow human entry. Construction would be timed

consistent with BCI recommendations (BCI 2014). (Appendix A – BA/BE Appendix B, Bat Habitat Assessment).

Ground disturbance should occur outside the primary

6.6 Special Status Species

One (1) species has potential to occur in the project area that could be impacted by implementing the Proposed Action, Townsend's big-eared bat (previously discussed in Section 4.6). Mitigation measures in accordance with BCI's recommendations are as follows:

- Townsend's big-eared bat: Bat-friendly closures would protect special status bat species and habitat from inappropriate human ingress, which could disturb and disrupt bat habitat and bat utilization of mine features. Bat-friendly closures would follow construction guidance in the Agency Guide to Cave and Mine Gates 2009 (USFWS 2009). BCI provided individual mine feature closure recommendations based on surveys and habitat evaluations; these recommendations reduce the potential for negative impacts to bats, including noise and vibration disturbance associated with closure construction (Appendix A – BA/BE, Appendix C – BCI Habitat Assessment). Seasonal timing stipulations would be used for closures to avoid disturbance to maternity colonies (i.e., cold season closure is required) or hibernacula (i.e., warm season closure is required). BCI's closure recommendations include exclusion methods during the warm season to ensure that bats are active and able to escape; bat-friendly closures would protect bat habitat, allow for continued bat use, and prevent inappropriate human ingress to mine features and disturbance to bats. BCI's closure and exclusion recommendations and seasonal closure restrictions would be adhered to in order to limit and avoid negative impacts to special status species (Appendix A – BA/BE).

6.7 Geology/ Soils

- During the construction phase, ground disturbance would occur; this disturbance would be temporary in nature and limited in scope. Although rocks and boulders may be moved for access, no access routes would be cleared, and the ground surface would not be altered. Project vehicles would not create unnecessary routes, shortcuts, or parking areas, and existing access routes would be used to the greatest extent possible.
- As per BLM specifications, site reclamation would occur, and the disturbed surface would be reseeded with native species. Any overland access routes required to access features proposed for closure would be reclaimed to prevent continued vehicle access to minimize disturbance.

6.8 Air Quality

- To limit the amount of fugitive dust generated by increased vehicle access and construction activities within the project area, dust control measures would be implemented. Dust control measures could include but would not be limited to speed restrictions for vehicle access, binding particles by wetting access roads and/or exposed soils during construction, and stipulations to avoid access/construction during high wind days.

6.12 Human Health and Safety

- The Proposed Action would benefit human health and safety for those who utilize lands in the

project area. A health and safety plan would be developed and implemented by the contractor during construction. No further mitigation or avoidance measures are recommended.

7. AGENCY CONSULTATION

The following public agencies and Tribal entities were contacted or consulted with during the development of this EA (in alphabetical order); tribes with an asterisk were consulting parties for this project. The Ysleta del Sur Pueblo stated that they do not have any concerns with the proposed project in a letter dated May 10, 2023.

- Bureau of Land Management, Las Cruces District Office
- Comanche Nation
- Fort Sill Apache Tribe
- Hopi Tribe
- Isleta Pueblo*
- Kiowa Tribe
- Mescalero Apache Tribe
- Navajo Nation
- New Mexico Department of Game and Fish
- New Mexico Environment Department, Air Quality Bureau
- New Mexico Rare Plant Technical Council
- New Mexico State Historic Preservation Office
- U.S. Fish and Wildlife Service, Ecological Services Field Office
- White Mountain Apache Tribe
- Ysleta del Sur Pueblo*

8. LIST OF PREPARERS

Colin R. Dunn, BLM, LCDO, Paleontologist

Gina Gesting, BRIC, LLC, NEPA Specialist

Stephanie Lee, BRIC, LLC, Project Manager/NEPA Specialist

Randy Seeley, BRIC, LLC, Wildlife Biologist

Heather Seltzer-Rogers, Paleowest, Archeologist

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APPENDIX A. BIOLOGICAL ASSESSMENT AND BIOLOGICAL EVALUATION

Biological Assessment and Biological Evaluation
for the
Red Hill Mine Safeguarding Project

Sierra County, New Mexico

January 2024

Prepared for:

New Mexico Energy, Minerals, and Natural Resources Department
Mining and Minerals Division - Abandoned Mine Land Program
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Prepared by:

BRIC, LLC | Subsidiary of Diné Development Corporation
8901 Adams Street NE, Suite B
Albuquerque, NM 87113
505-563-4700

BRIC
A DDC COMPANY
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List of Acronyms

AML	Abandoned Mine Land
APE	Area of Potential Effect
BA	Biological Assessment
BCI	Bat Conservation International
BE	Biological Evaluation
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
EA	Environmental Assessment
EMNRD	Energy, Minerals and Natural Resources Department
ESA	Endangered Species Act
HUC	Hydrologic Unit Codes
IPaC	Information for Planning and Conservation
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
SGCN	Species of Greatest Conservation Need
SLO	State Land Office
USFWS	United States Fish and Wildlife Service

Table of Conversions

Distance

1 inch = 2.54 centimeters = 25.4 millimeters

1 foot = 0.30 meter

1 mile = 1.61 kilometers

Area

1 acre = 0.40 hectare

1.0 INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

BRIC was contracted by the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) - Mining and Minerals Division - Abandoned Mine Land Program (AML) to conduct a biological assessment and biological evaluation (BA/BE) in preparation for abandoned mine reclamation and safeguarding work at Red Hill in the Caballo Mountains Mining District. The proposed project area is located in Sierra County and is approximately 3 miles northeast of Derry, New Mexico. The proposed Area of Potential Effect (APE) includes approximately 796 acres of land administered by the Bureau of Land Management (BLM) and the New Mexico State Land Office (SLO).

The purpose of this BA/BE is to review the proposed action to determine to what extent it may affect threatened, endangered, proposed, or candidate species, or proposed or designated critical habitat, under the authority of the Endangered Species Act (ESA). This BA/BE was prepared in accordance with legal requirements set forth under Section 7 of the ESA of 1973, as amended (16 USC 1536, et seq.). This BA/BE will also review the proposed action to determine to what extent it may affect avian species protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA).

This BA/BE is being prepared concurrently with an environmental assessment (EA). The EA will evaluate potential environmental, socioeconomic, and cultural resource effects from the preferred alternative of the proposed action and a no action alternative. The EA will be prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 and implementing regulations, 40 CFR Parts 1500-1508.

1.2 Project Location

The project area is located within Sierra County, NM, (Figures 1 and 2), in the Garfield and McLeod Tank U.S. Geological Survey 1:24k quadrangles. The mine features and BLM Danger Rating is presented in Figure 1. The legal description of the project area is in Township 17S, Range 4W, Sections 9, 15, 16, 21 and 22.

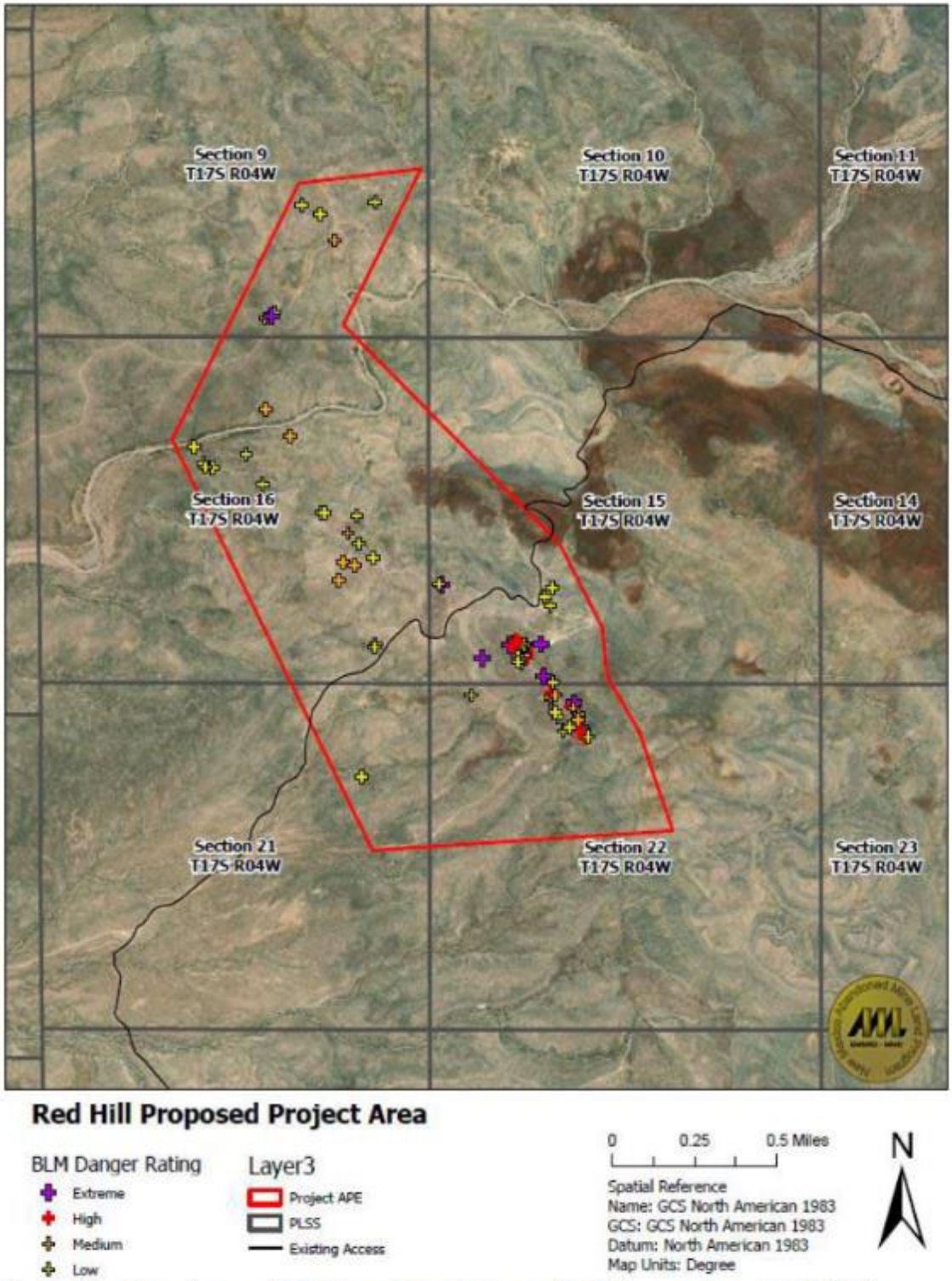

Figure 1. Location of proposed project area, mine features and BLM danger rating at Red Hill Mine.

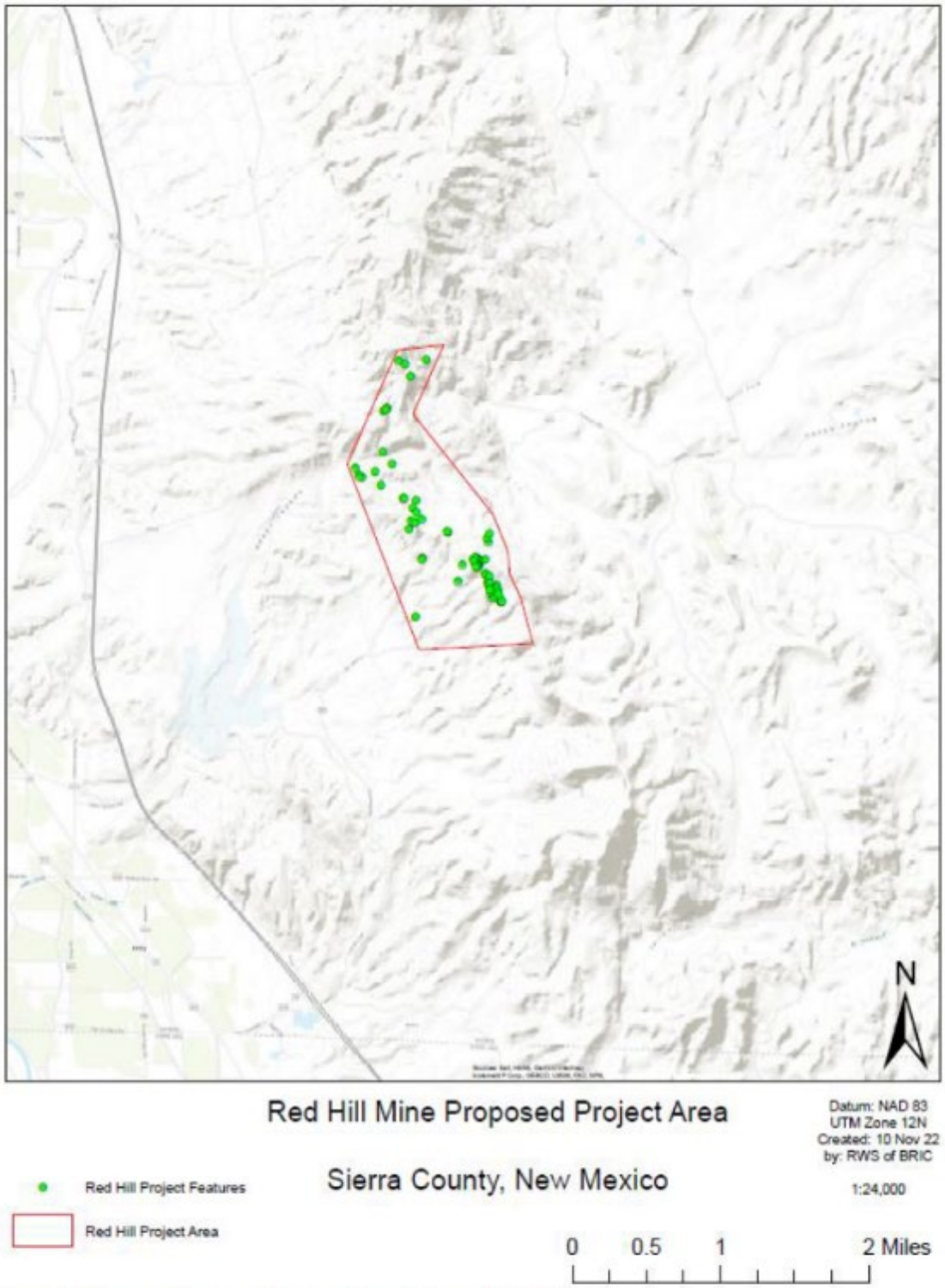

Figure 2. Topographic map of proposed project area at Red Hill Mine.

1.3 Proposed Action

Based on recent BLM inventory data, the AML Program estimates there are 52 low risk, 13 medium risk, 12 high risk and 8 extreme risk mines within the proposed APE. Safeguarding activities would utilize a variety of methods, including manually or mechanically filling mine openings with surrounding waste material or polyurethane foam, and building structural barriers that restrict human ingress, such as locking gates, cupolas, high-tensile steel mesh coverings, gated culverts, or other wildlife-compatible closures.

2.0 CONSULTATION HISTORY

On July 20, 2022, a list of threatened, endangered, and candidate species, and designated critical habitat for the proposed project area was provided by the USFWS Information for Planning and Conservation (IPaC) tool (USFWS 2022; Appendix B). No informal consultation beyond this has been conducted.

3.0 AFFECTED ENVIRONMENT

3.1 Topography

Elevations on the project area vary from approximately 4,724 to 4,987 feet (1,440-1,520 m). The project area consists of Chihuahuan Desert with hills and mountain tops.

3.2 Geology

The geology is mapped as Upper Santa Fe Group (middle Pleistocene to uppermost Miocene)—which includes Camp Rice, Fort Hancock, Palomas, Sierra Ladrones, Arroyo Ojito, Ancha, Puye, and Alamosa Formations (QTs). Other portions of the project area are mapped as Abo Formation (Wolfcampian) Red beds, arkosic at base, finer and more mature above, may include limestone beds of Pennsylvanian age (Virgilian) in Zuni Mountains, in Robledo Mountains the Abo may be considered a member of the Hueco Formation (PA). Additional portions of the project area are mapped as Silurian and Ordovician rocks, undivided (SO; Anderson et al. 1997).

3.3 Soils

Soils in the project area have been mapped by the USDA Natural Resources Conservation Service (2022). They are described in the Sierra County, New Mexico Soil Survey (NRCS 2022). Table 1 presents the soils mapped in the project area.

Table 1. Soils mapped in the project area.

Map Unit	Symbol	Parent Materials	Textures
Courthouse-Rock outcrop association, very steep	28	Mixed gravelly alluvium derived from sandstone and shale; igneous, metamorphic and sedimentary rock	Very cobbly very fine sandy loam; gravelly loam; unweathered bedrock; bedrock
Nickel very gravelly fine sandy loam, very steep	62	Mixed gravelly alluvium	Very gravelly fine sandy loam
Rock outcrop, extremely steep	70	Igneous, metamorphic and sedimentary rock	Bedrock

Map Unit	Symbol	Parent Materials	Textures
Rock outcrop-Torriorthents association, extremely steep	75	Igneous, metamorphic and sedimentary rock: mixed gravelly alluvium	Very gravelly sandy loam; bedrock

3.4 Wildlife

Wildlife observed in the project area includes turkey vulture (*Cathartes aura*), black-throated sparrow (*Amphispiza bilineata*), mourning dove (*Zenaida macroura*), canyon wren (*Catherpes mexicanus*), and rock wren (*Salpinctes obsoletus*). Other wildlife observed includes desert cottontail (*Sylvilagus audubonii*), and black-tailed jackrabbit (*Lepus californicus*).

No protected plants or animals, or prairie dog colonies were observed during the biological survey. In addition, there were no suitable cliffs to potentially support nesting substrate for raptors. No federally listed species or special status species were documented during the wildlife surveys.

3.5 Vegetation

The vegetation community is mapped as Chihuahuan desert scrub, and semidesert grassland (Brown 1994). Dominant vegetation includes creosote bush (*Larrea tridentata*), whitethorn acacia (*Vachellia constricta*), and ocotillo (*Fouquieria splendens*). Sub-dominant vegetation includes mariola (*Parthenium incanum*), Warnock Condalia (*Condalia warnockii*), tarbush (*Flourensia cernua*), Great Plains prickly pear (*Opuntia polyacantha*), Engelmann prickly pear (*Opuntia engelmannii*), desert agave (*Agave americana*), four-wing saltbush (*Atriplex canescens*), crucifixion thorn (*Canotia holacantha*), desert fluffgrass (*Dasyochloa pulchella*), silverleaf nightshade (*Solanum elaeagnifolium*), sand dropseed (*Sporobolus cryptandrus*), desert Christmas cactus (*Cylindropuntia leptocaulis*), common sotol (*Dasylirion wheeleri*), fishhook barrel cactus (*Ferocactus wislizeni*), strawberry hedgehog cactus (*Echinocereus stramineus*), nylon hedgehog cactus (*Echinocereus viridiflorus*), cloak fern (*Astrolepis cochisensis*), Torrey's jointfir (*Ephedra torreyana*), banana yucca (*Yucca baccata*), slim tridens (*Tridens muticus*), skunkbush sumac (*Rhus trilobata*), bush muhly (*Muhlenbergia porteri*), beargrass (*Nolina microcarpa*), and threadleaf snakeweed (*Gutierrezia microcephala*). There were no noxious weeds observed within the project area.

3.6 Hydrology

The area is within the El Paso-Las Cruces subbasin, Rio Grande-Caballo basin, Rio Grande-Mimbres subregion and Rio Grande region. The 12-digit hydrologic unit codes (HUC) and hydrologic unit names are 130301020210 Oak Spring Creek-Rio Grande, and 130301020206 Green Canyon Creek. The USFWS National Wetlands Inventory identifies mostly riverine wetlands. There were no potential wetlands or surface water located within the project area. There are intermittent/ephemeral drainages that carry stormwater runoff from the hills within the project area to the surrounding areas, particularly the Rio Grande (Figure 3).

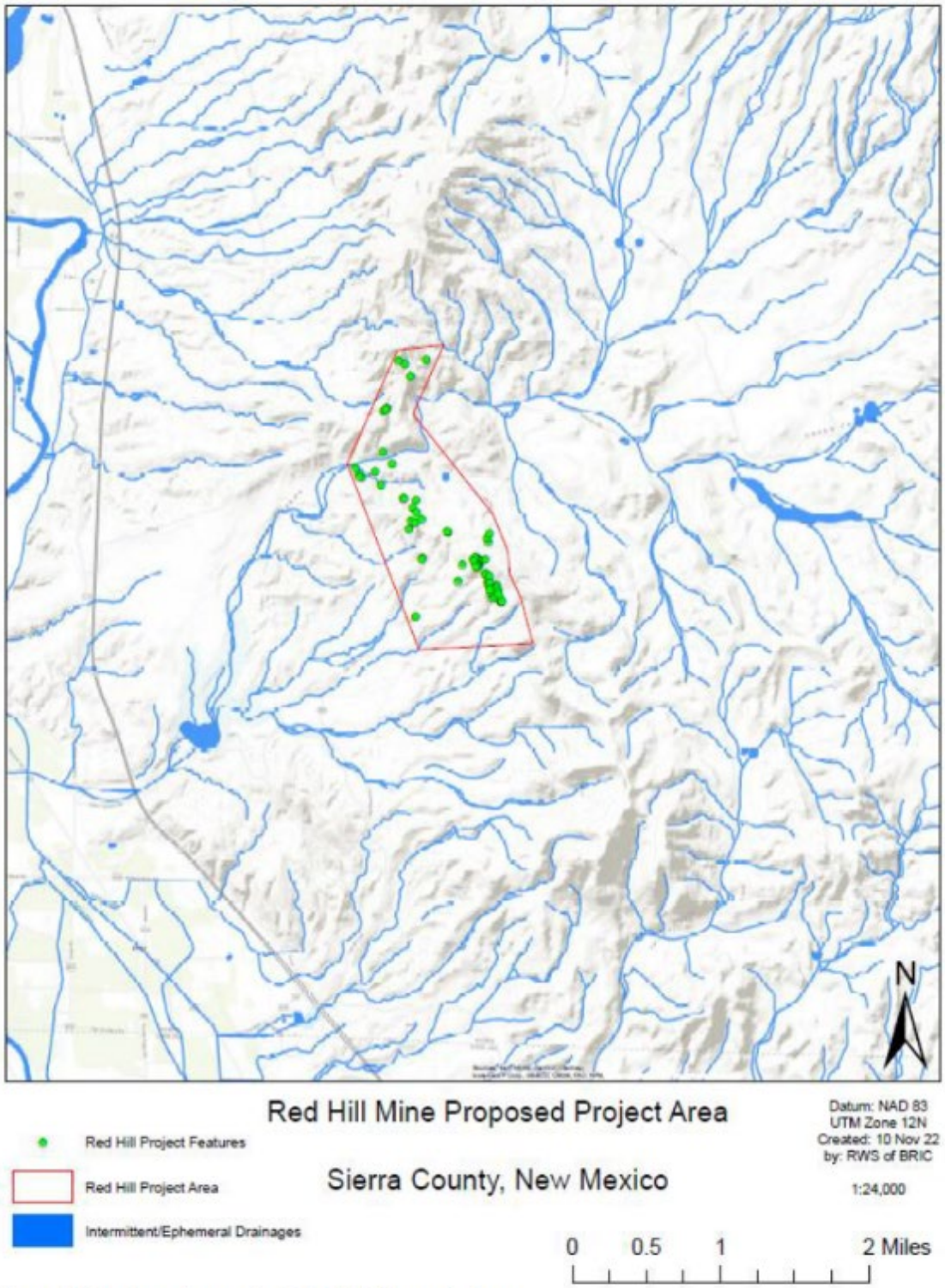

Figure 3. Drainages traversing Red Hill Mine project area.

3.7 Special Designated Areas

There are no Important Bird Areas within the project area (Audubon 2022). The nearest Important Bird Area is Percha SP/Caballo Lake SP/Las Palomas (Site ID: 680) approximately 4 miles northwest of the project area. Critical habitats are discussed in Section 5.1. Results from the Rincon Mine Surveys for bat habitat assessment conducted by Bat Conservation International (BCI) on July 29-30, 2014 and on July 11-13, 2023, are discussed in Section 3.8. The bat reports are attached separately to this BA/BE as Appendix C.

`3.8 Bat Habitat Assessment

2014 Results

The bat survey was conducted by BCI on July 29-30, 2014, and the project assessed abandoned mines in the Rincon project area, located in the Caballo Mountains of New Mexico between Hatch and Truth or Consequences. All sites were surveyed following standardized protocols and safety procedures, for the purpose of providing biological data and closure recommendations. Surveys focused on documenting bat and other wildlife use of each feature. A total of twenty AML features represented by unique identifiers, provided by the BLM, were surveyed. In three instances, however, a group of features (either two or three) were found to be connected and were assessed with a single survey representing the group, resulting in fifteen unique sites that received a comprehensive biological survey. The full report can be viewed as Appendix C attached separately. The bat habitat assessment report will be updated when the new one becomes available in summer 2023. BCI will conduct an updated bat habitat assessment for several features documented in the 2014 report, and any new mine features found during the cultural resource survey. The findings will be further discussed in the EA.

Of the fifteen separate sites that received comprehensive biological surveys, seven sites contained bats (sometimes in association with other signs of bat use, such as guano and/or moth wings), and an additional six sites contained other bat signs. Two sites contained no bats or any sign of bat use. Bats observed were limited to a single species, the Townsend's big-eared bat (*Corynorhinus townsendii*). Overall, bat use of the occupied sites appears largely isolated to summer day roosting and/or night roosting by a small number of individuals. One site, however, contained a significant cluster of bats that likely represents an important maternity colony.

Each of the fifteen unique surveys received a bat habitat assessment, which is determined based on observed bats and bat sign, along with physical characteristics of the site such as portal size and obstructions, ceiling textures that bats select for, hydrological activity (such as seasonal flooding) that may preclude bat use, and any additional observations that may influence bat use of the site. Bat habitat was classified as "poor" for a single feature, "marginal" for three features, "moderate" for seven features, "good" for three features, and "excellent" for a single feature.

Closure recommendations generally fall into bat-friendly or destructive closure categories and include a seasonal component that recommends the closure to occur either during the warm season, cold season, or at any time. The fifteen sites surveyed are represented by twenty entrance portals (two sites have three entrances each and one site has two entrances).

Ten sites have been recommended for bat-friendly closure to protect the bat habitat within and allow for continued bat use. These ten sites total fifteen entrance portals. All of these bat-friendly closures are recommended to occur during the cold season, "bat compatible closure cold season", when bats are not

active and potentially aggregated in maternity colonies. The recommended date range for these closures to occur is from October 1 through March 31.

Five sites, each with a single entrance portal, have been recommended for destructive closure. Of these five sites, four are recommended for "destructive closure warm season". The recommended date range for these closures to occur is from April 1 through September 30. One site is recommended for "close by any means", which can be closed at any time.

For the warm season destructive closures, it is critical to first conduct exclusion techniques on the site to ensure any bats that might be present have an opportunity to exit the site before it is closed. If exclusion is not conducted, there is a possibility that bats could be trapped and destroyed during the closure. Exclusion techniques are detailed in BCI's "Managing Abandoned Mines for Bats" publication.

2023 Results

The bat survey was conducted by BCI on July 11-13, 2023. This biological survey project assessed abandoned mine land (AML) features at Red Hill in southern New Mexico, managed by the Bureau of Land Management (BLM). The AML features surveyed are located southeast of the Caballo Reservoir, near Truth or Consequences, NM. All sites were surveyed by Bat Conservation International (BCI) staff following standardized protocols and safety procedures for providing subterranean biological data and closure recommendations. Surveys focused on documenting bat and other wildlife use of each feature. The field project resulted in bat surveys being conducted on 29 distinct features, comprising 36 openings to the surface. Bat habitat assessments and closure recommendations are provided for all features (Appendix C). The full report can be viewed as Appendix C attached separately. The findings will be further discussed in the EA.

Of the 29 features that received comprehensive biological surveys, 10 sites contained bats (sometimes in association with other signs of bat use, such as guano and/or moth wings), and an additional 8 sites contained other bat signs. Eleven sites contained no bats or any sign of bat use. Bats observed included Townsend's big-eared bat (*Corynorhinus townsendii*), big brown bat (*Eptesicus fuscus*), canyon bat (*Parastrellus hesperus*), and genus *Myotis* (species unknown).

Overall, bat use of the occupied sites appears largely isolated to summer day roosting and/or night roosting by a small number of individuals. Two sites, however, contained a significant cluster of bats that likely represents an important maternity colony.

Each of the 29 unique surveys received a bat habitat assessment, which is determined based on observed bats and bat sign, along with physical characteristics of the site such as portal size and obstructions, ceiling textures that bats select for, hydrological activity (such as seasonal flooding) that may preclude bat use, and any additional observations that may influence bat use of the site. Bat habitat was classified as "poor" for nine features, "marginal" for six features, "moderate" for five features, "good" for six features, and "excellent" for two features.

Closure recommendations generally fall into bat-friendly or destructive closure categories and include a seasonal component that recommends the closure to occur either during the warm season, cold season, or at any time. The 29 sites surveyed are represented by 36 entrance portals.

Fifteen sites have been recommended for bat-friendly closure to protect the bat habitat within and allow for continued bat use. These fifteen sites total twenty entrance portals. Four of these bat-friendly closures are recommended to occur during the cold season, "bat compatible closure cold season", when bats are not active and potentially aggregated in maternity colonies. One of these bat-friendly closures are

recommended to occur during the warm season, "bat compatible closure warm season". Nine of these bat-friendly closures are recommended to occur during any time, "bat compatible closure, any time".

Two sites have been recommended for destructive closure. Of these two sites, one is recommended for "destructive closure warm season" and one for "destructive closure, any time".

For the warm season destructive closures, it is critical to first conduct exclusion techniques on the site to ensure any bats that might be present have an opportunity to exit the site before it is closed. If exclusion is not conducted, there is a possibility that bats could be trapped and destroyed during the closure. Exclusion techniques are detailed in BCI's "Managing Abandoned Mines for Bats" publication.

4.0 METHODOLOGY

BRIC staff reviewed the list of species of concern potentially occurring in proximity to the project area to determine which, if any, have potential to occur in the project area, based on the project location, observed habitats, soils, and geology. We also reviewed potential conflicts with the MBTA.

The action and analysis areas include the project area and the surrounding area. The analysis area includes the surrounding area because noise from the proposed action may travel beyond the project boundaries, and construction activities could disturb some species beyond the immediate project area (e.g., nesting raptors). For birds and large mammals, the action and analysis areas include the project area and the surrounding area, the range of which depends on species, and could thereby extend the analysis area beyond the local action areas. For plants, the action and analysis areas are the project area. For fishes, the action and analysis areas include the project area and the downstream portions of waterbodies intersected by the project area.

On July 25-29, 2022, BRIC conducted a pedestrian and vehicular survey of the proposed project area and access roads. The survey area included the 796-acre project area and visual inspection beyond. We specifically surveyed for suitable habitat for protected species, prairie dog towns, cliffs suitable for nesting raptors, birds, and noxious weeds. Photos of the project area are shown in Appendix A.

5.0 THREATENED, ENDANGERED, AND CANDIDATE SPECIES CONSIDERED

An inventory of federally listed species with the potential to occur within the proposed project area was obtained from the USFWS Information, Planning, and Conservation System (IPaC) (Appendix B). The proposed project area does not contain critical habitat for any federally listed species. Table 2 lists the federally listed species identified in the IPaC report for the project area.

Table 2. Federally listed threatened, endangered, and candidate species potentially occurring in the project area and status.

Scientific name	Common name	Status*
Canis lupus baileyi	Mexican wolf	ESA Experimental Population, Non- Essential
Coccyzus americanus	Yellow-billed cuckoo	ESA T, MBTA
Danaus plexippus	Monarch butterfly	ESA C
Empidonax traillii extimus	Southwestern willow flycatcher	ESA E, MBTA
Falco femoralis septentrionalis	Northern Aplomado falcon	ESA Experimental Population, Non- Essential, MBTA

Scientific name	Common name	Status*
Hedeoma todsenii	Todsen's Pennyroyal	ESA E
Hybognathus amarus	Rio Grande silvery minnow	ESA E
Oncorhynchus clarkii virginalis	Rio Grande cutthroat trout	ESA C
Oncorhynchus gilae	Gila trout	ESA T
Rana chiricahuensis	Chiricahua leopard frog	ESA T
Strix occidentalis lucida	Mexican spotted owl	ESA T, MBTA

*ESA C, E and T – Endangered Species Act candidate, endangered and threatened. MBTA – Migratory Bird Treaty Act.

6.0 SPECIAL STATUS SPECIES CONSIDERED

Table 3 includes state listed threatened and endangered species for Sierra County, NM and their potential for occurrence within the project area. Table 4 lists BLM sensitive species and special status species for the Las Cruces District and potential for their occurrence. Potential effects of the proposed action on threatened, endangered, and sensitive species are analyzed in this section (BISON-M, 2022).

Table 3. State listed threatened and endangered species of Sierra County, NM potentially occurring in the project area and status. All are listed as Species of Greatest Conservation Need (SGCN).

Species Category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
Mammals	*Canis lupus baileyi*	Mexican wolf	NMGF E, ESA Experimental Population, Non-Essential	N	See Section 7.2
	Neotamias minimus atristriatus	Penasco least chipmunk	NMGF E	N	This species occurs on Sierra Blanca and elsewhere in the Sacramento Mountains of southeastern New Mexico at elevations of 7,290 to 8,580 feet above sea level. It lives along the James and Penasco canyons, in and near ponderosa pine forests. There will be *no effect* to this species due to lack of habitat.
Birds	*Columbina passerina*	Common ground dove	NMGF E, MBTA	N	This bird inhabits open areas that have trees and bushes, and are found in forests with sandy areas, farmlands, and savannahs and near human infrastructure. There will be *no effect* to this species due to lack of habitat.
	Coccyzus americanus occidentalis	Yellow-billed cuckoo	ESA T, MBTA	N	See Section 7.3
	Calothorax lucifer	Lucifer hummingbird	NMGF T, MBTA	N	This bird is mainly a species of northern Mexico and central Mexico and is only known to occur in the southwestern edge of New Mexico. There will be *no effect* to this species since the project area is outside of this species' range.
	Calypte costae	Costa's hummingbird	NMGF T, MBTA	N	This bird is a desert scrub species of the southwestern U.S. and northern Mexico, and occurs mainly in Guadalupe Canyon and in side canyons along the lower Gila River from Cliff south. There will be *no effect* to this species since the project area is outside of this species' range.
	Cynanthus latirostris	Broad-billed hummingbird	NMGF T, MBTA	N	This bird occurs in in desert riparian deciduous woodland that occurs where desert streams provide sufficient moisture for a narrow band of trees and shrubs. There will be *no effect* to this species due to lack of habitat.
	Sternula antillarum	Least tern	NMGF T, MBTA	N	This bird prefers shoreline habitat and other water sources. There will be *no effect* to this species due to lack of habitat.

Species Category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
	Phalacrocorax brasilianus	Neotropic cormorant	NMGF T, MBTA	N	This bird prefers ponds, lakes, streams and other water bodies. There will be *no effect* to this species due to lack of habitat.
	Haliaeetus leucocephalus	Bald eagle	NMGF T, MBTA, BGEPA	N	This bird occurs along lakes and larger rivers. A few nesting pairs have been documented in the state, typically in association with water and large prairie dog colonies, with nests usually high in trees. There will be *no effect* to this species due to lack of habitat.
	Buteogallus anthracinus	Common black hawk	NMGF T, MBTA	N	This bird inhabits wooded habitat along permanent streams. There will be *no effect* to this species due to lack of habitat.
	Strix occidentalis lucida	Mexican spotted owl	ESA T, MBTA	N	See Section 7.3.
	Trogon elegans	Elegant trogon	NMGF E, MBTA	N	This bird inhabits moist riparian canyons with a sycamore component and upland areas of arid woodland. There will be *no effect* to this species due to lack of habitat.
	Falco femoralis	Aplomado falcon	NMGF E, ESA E, MBTA	N	See Section 7.3.
	Falco peregrinus	Peregrine falcon	NMGF T, MBTA	N	This bird prefers suitable cliff substrates for nesting habitat and forested areas. There will be *no effect* to this species due to lack of habitat.
	Tyrannus crassirostris	Thick-billed kingbird	NMGF E, MBTA	N	This bird inhabits riparian habitat and is known to breed in Guadalupe Canyon in New Mexico. There will be *no effect* to this species due to lack of habitat and the project area is outside of this species' range.
	Empidonax traillii extimus	Southwestern willow flycatcher	NMGF E, ESA E, MBTA	N	See Section 7.3
	Vireo bellii	Bell's vireo	NMGF T, MBTA	N	This bird occurs in association with willows and mesquite thickets near water. There will be *no effect* to this species due to lack of habitat.
	Vireo vicinior	Gray vireo	NMGF T, MBTA	N	This bird occurs in pinyon-juniper and scrub-oak habitat in New Mexico. There will be *no effect* to this species due to lack of habitat.
	Centronyx bairdii	Baird's sparrow	NMGF T, MBTA	N	This bird primarily inhabits shortgrass prairies. There will be *no effect* to this species due to lack of habitat.
	Passerina versicolor	Varied bunting	NMGF T, MBTA	N	This bird inhabits desert canyons, thorn-scrub, and riparian edges. There are very small breeding populations of NM in Guadalupe Canyon, Hidalgo County, Doña Ana

Species Category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
					County, and canyons of Carlsbad Caverns National Park in Eddy County. There will be *no effect* to this species due to lack of habitat and the project area is outside of this species' range.
Reptile	*Crotalus lepidus*	Mottled rock rattlesnake	NMGF T	N	This snake inhabits rocky terrain, large rock outcroppings, rocky stream beds, and steep rocky talus slopes in evergreen woodland and montane conifer forests; and basks in open rocky areas in forests near permanent and intermittent springs or streams. This snake is only known to occur in Otero and Eddy Counties. There will be *no effect* to this species due to lack of habitat and the project area is outside of this species' range.
Amphibian	*Lithobates chiricahuensis*	Chiricahua leopard frog	ESA T	N	See Section 7.7.
Fishes	*Gila robusta*	Roundtail chub	NMGF E	N	This fish occurs within river systems including the lower Gila River and the San Francisco River. There will be *no effect* to this species due to lack of habitat.
	Oncorhynchus gilae	Gila trout	NMGF T, ESA T	N	This fish is endemic to the Verde River drainage of Arizona and the upper Gila basin of New Mexico. There will be *no effect* to this species due to lack of habitat.
	Cyprinodon tularosa	White sands pupfish	NMGF T	N	This pupfish occurs in three small desert oases on the White Sands Missile Range. Common plants associated with this species include salt grass and salt cedar habitats, and pondweed, bullrush, cattail, and sedges. There will be *no effect* to this species due to lack of habitat and the project area is outside of this species' range.
Mollusk	*Oreohelix pilsbryi*	Mineral Creek mountainsnail	NMGF T	N	This species occurs in the Black Range of Sierra County in moist limestone crevices and in soil and leaf litter beneath limestone rocks. Most shells and live animals have been found on the south bank of Mineral Creek, under a dense canopy of oak, alder and pine. There will be *no effect* to this species due to lack of habitat and the project area is outside of this species' range.

*NMGF E and T – New Mexico Game and Fish endangered and threatened. ESA E and T – Endangered Species Act endangered and threatened. MBTA = Migratory Bird Treaty Act. BGEPA = Bald and Golden Eagle Protection Act.

Table 4. State/BLM Las Cruces District special status species for the proposed project area. All birds are protected under the Migratory Bird Treaty Act. All species included in the table are BLM Sensitive species.

Species category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
Plants	*Agastache pringlei* var. *verticillata*	Organ Mountains giant hyssop	S2	N	This plant occurs on humus-covered igneous talus and boulders among protected bases of steep cliffs in woodlands of Douglas fir, yellow pine, and Gambel oak, 5,900–7,500 ft. There will be *no effect* to this species due to lack of habitat and the project area is outside of this species' elevational range.
	Amsonia leiosolenus var. *howardii*	Howard's gyp ringstem	G2T1	N	This plant occurs on open gypsum outcrop of the Yeso Formation, with limestone cobble. This species is locally abundant within its restricted habitat, a single gypsum outcrop on the lower western slope of the Guadalupe Mountains. There will be *no effect* to this species due to lack of habitat and the project area is outside of this species' range.
	Aquilegia chrysantha var.*chaplinei*	Chapline's columbine	S2	N	This plant occurs on limestone seeps and springs in the montane scrub or riparian canyon bottoms. There will be *no effect* to this species due to lack of habitat.
	Astragalus cobrensis var. *maguirei*	Coppermine milkvetch	S1	N	This plant occurs on dry creek beds, banks, canyon sides, generally dry, open slopes with oaks, juniper, and pine. This plant variety has been collected only once in the Peloncillo Mountains near the Arizona border. There will be *no effect* to this species due to lack of habitat and the project area is outside of this species' range.
	Boechera zephyra	Wind Mountain rockcress	S1	N	This species is found on rocky slopes, primarily in the upper margins of Chihuahuan Desert scrub, occasionally in juniper savannah or oak-juniper woodlands. The distribution in New Mexico is confined to Doña Ana, Eddy, and Otero Counties. There will be *no effect* to this species since the project area is outside of this species' range.
	Castilleja organorum	Organ Mountains paintbrush	S2	N	This plant occurs on partly shady montane slopes and rocky canyons in pinyon-juniper woodland or lower montane coniferous forest, 7,000– 8,000 ft. This species is endemic to the higher elevations of the Organ Mountains. There will be *no effect* to this species due to lack of habitat and the project area is outside of this species' range.

Species category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
	Coryphantha robustispina ssp. *scheeri*	Scheer's beehive cactus	S2	N	This plant occurs on nearly level areas in desert grassland and Chihuahuan desert scrub, usually on gravelly or silty soils, occasionally on rocky benches or bajadas on limestone or gypsum at elevations of 3,300–3,600 ft. There will be *no effect* to this species since the project area is outside of this species' elevational range.
	Dermatophyllum guadalupense	Guadalupe mescalbean	S1	N	This plant occurs on outcrops of pink, limy, fine-grained sandstone that is 1 to 2% gypsum in Chihuahuan desert scrub and juniper savanna. Known distribution occur only in Otero and Eddy Counties, Brokeoff Mountains and Upper Dog Canyon area of the Guadalupe Mountains in New Mexico and adjacent Culberson County, Texas. There will be *no effect* to this species since the project area is outside of this species' range.
	Escobaria duncanii	Duncan's Pincushion cactus	S1	N	This plant occurs in cracks in limestone and limy shale in broken terrain in Chihuahuan desert scrub, at about 5,100 ft in New Mexico. There will be *no effect* to this species since the project area is outside of this species' elevational range.
	Escobaria villardii	Villard's Pincushion cactus	S2	N	This plant occurs on loamy soils of desert grassland with Chihuahuan desert scrub on broad limestone benches in mountainous terrain. Known distribution in New Mexico is confined to Otero and Doña Ana Counties: west slope of the Sacramento Mountains and northern Franklin Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
	Hymenoxys ambigens var. *Neomexicana*	New Mexico bitterweed	S2	N	This plant occurs on rocky to sandy granitic soils on open canyon floors or slopes, oak woodland, Apache pine forests, or along intermittent streamsides with Arizona cypress, Arizona walnut, and Arizona sycamore. A narrow endemic that occurs in small populations and is known from only three localities in Hidalgo County. There will be *no effect* to this species since the project area is outside of this species' range.
	Lepidosporum burgessii	Gypsum scalebroom	S1	N	This plant occurs on stabilized gypsum dunes with Chihuahuan desert scrub and arid grassland, at elevations of 3,500– 3,700 ft. A very narrow endemic of the Alkali Lakes area west of the Guadalupe Mountains. There will be *no effect*

Species category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
					to this species since the project area is outside of this species' range.
	Menzelia humilus var. *Guadalupensis*	Guadalupe stickleaf	S1S2	N	This plant occurs on open gypsum outcrops of the Yeso Formation, with limestone cobble. This plant is locally abundant within its restricted habitat, a series of gypsum outcrops that occur on the west face of the northern portion of the Guadalupe Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
	Nerisyrenia hypercorax	Crow flat greggia	S1S2	N	This plant occurs only on sparsely vegetated exposures of gypseous clay of the Yeso Formation, from Pup Canyon north to 1.5 miles north of the Chaves/Otero County line along the west base of the Guadalupe Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
	Opuntia Arenaria	Sand pricklypear	S2	N	This plant occurs on sandy areas, particularly semi-stabilized sand dunes among open Chihuahuan desert scrub, often with honey mesquite and a sparse cover of grasses, at elevations of 3,800–4,300 ft. There will be *no effect* to this species since the project area is outside of this species' elevational range.
	Paronychia wilkinsonii	Wilkinson's nailwort	S1	N	In New Mexico, this species has only one known population, on the gravelly limestone bajada of the Guadalupe Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
	Pediomelum pentaphyllum	Chihuahua scurfpea	S1	N	This plant occurs on desert grassland or desertscrub among creosote bush or mesquite in sandy or gravelly loam soils, and is known in New Mexico only from Hidalgo County. There will be *no effect* to this species since the project area is outside of this species' range.
	Peniocereus greggii var *greggii*	Night blooming cereus	S3	N	This plant occurs mostly in sandy to silty gravelly soils in gently broken to level terrain in desert grassland or Chihuahuan desert scrub. There will be *no effect* to this species since the project area lacks the level terrain preferred by this species, and this plant was not observed during the biological survey.
	Penstemon alamosensis	Alamo beardtongue	S3	N	This plant prefers sheltered rocky areas, canyon sides and bottoms, on limestone. In New Mexico, it occurs slightly east of the Guadalupe Mountains and in limited areas of the

Species category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
					Sacramento Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
	Perityle cernua	Nodding cliff daisy	S2	N	This plant occurs on igneous cliffs, primarily on rhyolite, occasionally on andesite, 5,000–8,800 ft. The species is a narrow endemic of the Organ Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
	Puccinellia parishii	Parish's alkaligrass	S1	N	This plant occurs in alkaline springs, seeps, and seasonally wet areas that occur at the heads of drainages or on gentle slopes. There will be *no effect* to this species due to lack of habitat.
	Scrophularia laevis	Organ Mountain figwort	S2	N	This plant occurs in moist canyons on quartz monzonite substrate in pinyon-juniper woodland and Rocky Mountain montane coniferous forest at elevations of 6,900–8,500 ft. There will be *no effect* to this species due to lack of habitat, and the project area is outside of this species' elevational range.
	Scrophularia macrantha	Mimbres figwort	S2	N	This plant occurs on steep, rocky, usually north-facing igneous cliffs and talus slopes, occasionally in canyon bottoms; pinyon-juniper woodland and lower montane coniferous forest at elevations of 6,500–8,200 ft. There will be *no effect* to this species since the project area is outside of this species' elevational range.
	Sibara grisea	Gray sibara	S3?	N	This plant occurs in crevices and at the base of limestone cliffs in interior chaparral and pinyon-juniper woodland communities. There will be *no effect* to this species due to lack of habitat.
	Spermolepis organensis	Organ Mountain scaleseed	S1	N	This plant occurs in sandy and gravelly soils derived from quartz monzonite. This plant is known in New Mexico from Doña Ana County, on the northeastern bajada of the Organ Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
Amphibians	*Anaxyrus (Bufo) microscaphus*	Southwestern (Arizona) toad	S3	N	This toad prefers rocky stream courses in the pine-oak zone in Arizona and New Mexico. There will be *no effect* to this species due to lack of habitat.
Arthropods	*Danaus plexippus*	Monarch butterfly	SNR	N	See Section 7.4

Species category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
	Lytta mirifica	Anthony blister beetle	SH	N	This beetle's distribution is restricted to sand dunes around El Paso, including in Doña Ana County, New Mexico. There will be *no effect* to this species since the project area is outside of this species' range.
Birds	*Aimophila botterii*	Botteri's sparrow	S1B, S1N, MBTA	N	This sparrow breeds in grassland and savanna habitats from southeast Arizona and northwest Mexico. It is known to breeding exclusively in the Animas Valley in Hidalgo County. Breeding habitat includes giant sacaton, and bunch grasses of floodplains and river bottoms. There will be *no effect* to this species since the project area is outside of this species' range and adequate habitat does not exist.
	Ammodramus bairdii	Baird's sparrow	S1N, MBTA	N	See Table 3.
	Ammodramus savannarum	Arizona grasshopper sparrow	S1B, S1N, MBTA	N	This sparrow prefers open grasslands with patchy bare ground. It has potential to occur in the summer in the eastern plains. There will be *no effect* to this species since the project area is outside of this species' range and adequate habitat does not exist.
	Athene cunicularia	Western burrowing owl	S3, MBTA	N	This owl is found on dry, open, shortgrass plains, with nests associated with abandoned burrows of prairie dogs, ground squirrels and other burrowing mammals. There will be *no effect* to this species due to lack of habitat and prairie dog burrows.
	Anthus spragueii	Sprague's pipit	S2N, MBTA	N	This bird is endemic to grasslands of the northern Great Plains, and prefers dry, open grasslands of intermediate grass height and thickness. It occurs sporadically in winter in southern desert grasslands, primarily in the lower Pecos River Valley, Otero Mesa (southeastern New Mexico) and the Animas Valley. There will be *no effect* to this species since the project area is outside of this species' range and adequate habitat does not exist.
	Antrostomus arizonae	Mexican whip-poor-will	SNR, MBTA	N	This bird breeds in areas of pinon/juniper woodlands, ponderosa/oak forests, and mixed conifer forests near the Rio Grande and Pecos Basins. There will be *no effect* to this species due to lack of habitat.
	Calcarius mccownii	McCown's longspur	S3N, MBTA	N	This bird prefers shortgrass prairies of the Great Plains. In New Mexico, it may occur as a transient in winter, but is more

Species category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
					common in the eastern plains and in the Animas Valley. This species is not likely to occur in the project area. There will be *no effect* to this species due to lack of nesting habitat.
	Calcarius ornatus	Chestnut-collared longspur	S3N, MBTA	N	This bird breeds in short- and mixed-grass prairies, and winters in dry grasslands, deserts, and plateaus of the south-central and southwestern U.S, including southern NM. This species is not likely to occur in the project area. There will be *no effect* to this species due to lack of nesting habitat.
	Gymnorhinus cyanocephalus	Pinyon jay	S2S3, MBTA	N	This jay occupies foothills throughout the state, which exist of pinyon-juniper woodland habitat. There will be *no effect* to this species due to lack of habitat.
	Toxostoma bendirei	Bendire's thrasher	S3B, S3N, MBTA	N	This bird inhabits sparse desert shrubland and degraded grassland vegetation, or open woodland with scattered shrubs, avoiding riparian areas and arroyos with dense shrub cover. It is most common to breeding in the northern Animas Valley. This bird is not likely to occupy the project area. There will be *no effect* to this species due to lack of adequate habitat.
	Vireo bellii arizonae	Bell's vireo	S2B, S3N, MBTA	N	See Table 3.
	Vermivora virginiae	Virginia's warbler	S3B, S4N, MBTA	N	This bird inhabits coniferous woodland or forest mixed with deciduous shrubs or trees, mostly associated with pinyon-juniper and oak woodlands, and upward into higher elevations in New Mexico. There will be *no effect* to this species due to lack of habitat.
Crustaceans	*Phallocryptus sublettei*	Salt Playa (Sublette's) fairy shrimp	SNR	N	This shrimp is an aquatic species of the Chihuahuan desert, and it is found only in Otero County. There will be *no effect* to this species due to lack of habitat, and the project area is outside of this species' known range.
	Streptocephalus moorei	Moore's fairy shrimp	SNR	N	This shrimp has been found in four tank pits in the Chihuahuan Desert in Doña Ana, Luna, and Sierra counties. No tanks to support this species were observed in the project area. There will be *no effect* to this species due to lack of habitat.
	Streptocephalus	Bowman's fairy shrimp	SNR	N	This shrimp is an aquatic species found in Hidalgo and Socorro counties. There will be *no effect* to this species since the project area is outside of this species' range.

Species category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
Fish	*Catostomus clarkii*	Desert sucker	S2	N	This fish is present in a variety of river systems. There will be *no effect* to this species due to lack of habitat.
	Catostomus insignis	Sonora sucker	S2	N	This fish is present in a variety of river systems. There will be *no effect* to this species due to lack of habitat.
	Catostomus plebeius	Rio Grande sucker	S2	N	This fish is present in a variety of river systems. There will be *no effect* to this species due to lack of habitat.
	Gila robusta	Roundtail chub	S2	N	See Table 3.
Mammals	*Choeronycteris mexicana*	Mexican long-tongued bat	S2S3	N	This bat inhabits sycamore, cottonwood, and rabbitbrush riparian habitats, as well as mines and quarries in spring, summer, and fall. It occurs in deep canyons where it uses caves and mine tunnels as day roosts, and have been found in buildings. This bat was not recorded in 2014 nor 2023 by BCI during surveys of the project area (BCI 2014, 2023).
	Corynorhinus townsendii	Townsend's big-eared bat	S3S4	Y	This bat inhabits semidesert shrublands, pinyon-juniper woodlands, and open montane forests, often associated with caves and abandoned mines, which are used for day roosts and hibernacula. It may also be found in abandoned buildings and crevices on rock cliffs, which serve as refuge. This bat is *known to occur* in the project area. Townsend's big-eared bat individuals and/or sign was documented at thirteen mine features during 2014 surveys and at 9 features in 2023 (BCI 2014, 2023).
	Cynomys ludovicianus	Black-tailed prairie dog	S2	N	This species occurs in shortgrass plains and in sacaton and desert grasslands. There will be *no effect* to this species because no prairie dog colonies were observed during biological surveys.
	Euderma maculatum	Spotted bat	S3	N	This bat inhabits a wide variety of habitats, from riparian and pinyon-juniper woodlands to ponderosa pine and spruce-fir forests. This species has been collected from the lower Rio Grande Valley near Las Cruces to near the summit of Mt. Taylor, but most records are in or near forested areas, usually near bodies of water. They prefer to roost in structures including high cliffs, caves, large rock outcrops, and manmade structures. This bat was not recorded in 2014 nor 2023 by BCI during surveys of the project area (BCI 2014, 2023).

Species category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
	Lasiurus xanthinus	Western yellow bat	S1	N	This bat occurs in wooded areas over water in Hidalgo county within Guadalupe Canyon. It is thought to nest in trees and other vegetation. There will be *no effect* to this species due to lack of open water and the project area is outside of this species' range. This bat was not recorded in 2014 nor 2023 by BCI during surveys of the project area (BCI 2014, 2023).
	Leptonycteris yerbabuenae	Lesser long-nosed bat	S3	N	This bat inhabits canyons and nearby areas in desert grassland, and shrublands including lower edges of oak woodlands. They roost in caves, mine tunnels, and occasionally old buildings. This bat was not recorded in 2014 nor 2023 by BCI during surveys of the project area (BCI 2014, 2023).
	Lepus callotis	White-sided jackrabbit	S1	N	This rabbit prefers well-developed, pure grasslands with low shrub density and level terrain. There will be *no effect* to this species due to lack of suitable habitat.
	Sorex arizonae	Arizona shrew	S1	N	This shrew occupies relatively mesic, wooded areas, associated with Douglas-fir, quaking aspen, and netleaf oak. There will be *no effect* to this species due to lack of suitable habitat.
Mollusks	*Ashmunella hebardi*	Hacheta Grande woodlandsnail	S1	N	This snail is a local endemic to the Big Hatchet Peak area. There will be *no effect* to this species since the project area is outside of this species' range.
	Ashmunella macromphala	Cooke's peak snail	S1	N	This snail is endemic to Cooke's Peak. There will be *no effect* to this species since the project area is outside of this species' range.
	Holospira crossei	Cross Holospira snail	S1	N	This snail is endemic to the Big Hatchet Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
	Holospira metcalfi	Metcalf Holospira snail	S1	N	This snail is endemic to Howells Ridge within the Little Hatchet Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
	Sonorella hachitana	New Mexico talussnail	S2	N	This snail is endemic to the Big Hatchet range. There will be *no effect* to this species since the project area is outside of this species' range.
	Sonorella hachitana flora	New Mexico talussnail	S1	N	This snail is endemic to the Florida Mountains. There will be *no effect* to this species since the project area is outside of this species' range.

Species category	Scientific name	Common name	Status*	Potential to Occur (Y/N)	Comments
	Sonorella todseni	Doña Ana talussnail	S1	N	This snail is endemic to the Doña Ana Mountains. There will be *no effect* to this species since the project area is outside of this species' range.
Reptiles	*Aspidoscelis dixoni*	Gray-checkered whiptail	S1	N	This snake is found in the Peloncillo Mountains, specifically at Antelope Pass, about 10.5 km west of Animas, Hidalgo County. There will be *no effect* to this species since the project area is outside of this species' range.
	Heloderma suspectum	Gila monster	S2	N	This species is found in deserts, grasslands, and woodlands of southwestern North America, where suitable refuge shelters are present in rock cavities and crevices or in mounds and burrows created by other reptiles or mammals. It is most widely distributed in desert and mesquite-grassland, but also occurs in pine-oak forest, tropical deciduous forest, and thorn forest. It is usually found in rocky foothills and avoids open flats. It occurs in the Gila River Basin in Arizona and in Hidalgo, Grant, Luna, and likely also Doña Ana counties in southwestern New Mexico. Records of occurrence exist from near Silver City. This species is unlikely to occur in the project area. There will be *no effect* to this species since the project area is outside of this species' range, and there is lack of adequate habitat.
	Sistrurus tergeminus	Desert massasauga	S3	N	This snake inhabits grasslands found in the Chihuahuan Desert, short-grass prairies, and high plains and tablelands. It is found primarily in eastern NM. There will be *no effect* to this species since the project area is outside of this species' range, and there is lack of adequate habitat.
	Trachemys gaigeae	Big Bend slider	S2	N	This species is an endemic aquatic turtle of the Rio Grande and Rio Conchos drainage systems in the southwestern U.S. and northeastern Mexico. There will be *no effect* to this species since the project area is outside of this species' range, and there is lack of adequate habitat.

*Unless otherwise noted, habitat and distribution data were taken from BISON-M (2022). MBTA = Migratory Bird Treaty Act.

7.0 EFFECTS ANALYSIS

Potential effects/impacts to critical habitat, federally endangered, threatened, and candidate species, and special status species are discussed in this section.

7.1 Critical Habitat

There are no designated or proposed critical habitats within the project area (USFWS 2022). The nearest final designated critical habitat is for the Mexican spotted owl, approximately 28 miles west of the project area.

7.2 Mammals

Mexican wolf—This wolf is found in a variety of habitats, particularly mountain woodlands and in the Chihuahuan and Sonoran deserts. It was historically found throughout southwestern Texas, southern New Mexico, southeastern Arizona, and as far south as central Mexico. However, currently reintroduced wolves are limited to the Gila Headwaters ecosystem in eastern Arizona and western New Mexico (Center for Biological Diversity 2022).

This wolf is not likely to occur within or adjacent to the project area due to lack of preferred habitat, and proximity to residences and major roadways in the area. Additionally, the project area is outside the current known range for this species. There would be no impact to this wolf.

7.3 Birds

Yellow-billed cuckoo This bird nests within close proximity to water in mature riparian woodlands consisting of willow, cottonwood, alder, mesquite, hackberry, soapberry, and cultivated fruit trees with dense understories that are, preferably, ≥ 17 ha, with a minimum of three hectares of closed-canopy broad-leaved forest. This bird will also nest in orchards adjacent to river bottoms (Mikesic and Roth 2008).

There is no suitable habitat within the project area based on field surveys. There is no riparian vegetation within the project area. Therefore, due to lack of suitable habitat there would be no impact to this species.

Southwestern willow flycatcher—This subspecies nests in dense riparian vegetation near surface water or saturated soil; either in monotypic or mixed stands of native (e.g., willow) and/or exotic (e.g., tamarisk or Russian olive) species, with or without an over-story. Vegetation is typically ≥ 3 m high and dense with a closed canopy, although the understory may be dispersed or clumped. Nesting habitat greatly varies in size and shape and may be as small as 0.8 ha but does not include linear riparian zones < 10 m wide. Migrant flycatchers may use riparian habitats unsuitable for breeding and non-riparian areas (Mikesic and Roth 2008).

Based on field surveys, there is no suitable habitat within the project area. There is no riparian vegetation within the project area. Therefore, due to lack of suitable habitat there would be no impact to this species

Northern Aplomado falcon—This falcon prefers habitat types that include palm and oak savannahs, various desert grassland associations, and open pine woodlands. Essential habitat elements appear to be open terrain with scattered trees, relatively low ground cover, an abundance of insects and small to medium-sized birds, and a supply of nest sites. Nest sites include abandoned stick platforms of corvids and other raptors (USFWS 2022).

The project area does not include the habitat types preferred with this species. There were no trees and a supply of substrates that could provide nesting platforms for this species. There would be no impact to this species.

Mexican Spotted Owl This owl subspecies is patchily distributed throughout Mexico, Arizona, New Mexico, and southern Utah and Colorado (Gutiérrez et al. 1995). It inhabits mature mixed-conifer forests and is typically associated with steep slopes and cliff/canyon complexes. The winter habitats of Mexican spotted owls include lower-elevation piñon–juniper habitat and mixed, uneven-aged coniferous forests. There is also a preference for downed woody debris and snags. High canopy closure and tree density is an important component in breeding and wintering habitats. Mixed-age forests are often preferred along with proximity to water (Gutiérrez et al. 1995). The breeding season for this owl is from March 1 through August 30.

The project area does not contain adequate Mexican spotted owl habitat. There are no canyon complexes with mature mixed-conifer forests preferred by this species within the project area. There would be no impact to this species.

Migratory birds—Implementation of the Proposed Action during the avian breeding season could result in impacts to migratory birds protected by the MBTA. Any of the proposed action alternatives would potentially affect multiple species. Most of this is undeveloped, Chihuahuan desert habitat and may involve the removal of vegetation. Shrub-nesting species would potentially be impacted. There are no other bird Species of Concern not shown in Tables 2-4 that would be impacted by the proposed action alternative.

Vegetation removal may affect wildlife directly by causing injury or death, and indirectly by impacting cover and food resources. Direct impacts could include the physical disturbance of active nests or territories. Indirect impacts could include the disturbance of nesting birds and territories by noise, human presence, and habitat alteration. These effects could be mitigated by limiting activities to outside the avian breeding season as much as possible. Any potential mechanical treatments within the buffer zone would be conducted outside of the breeding season (March through August).

7.4 Insects

Monarch butterfly—This butterfly feeds on the nectar from flowers as adults, which contain sugars and other nutrients. The larvae only eat milkweeds, while adult monarchs feed on a wide variety of other nectar bearing flowers, visiting many different flowers in their search for food. Monarchs require an abundant source of nectar for their preparation in migrating south to Mexico to build up fat reserves. This food source must also sustain them throughout the winter since over-wintering monarchs feed very little or not at all (USFS 2021).

The project area lacks abundant sources of milkweed to support their breeding preferences, as well as flowers that could supply nectar to adult monarchs. Additionally, their fall and spring migration routes occur outside of the project area (USFWS 2022). There would not be a significant disturbance to vegetation preferred by this species; thus, there would be no impact to this species.

7.5 Plants

Todsen's Pennyroyal—This plant is distributed in New Mexico, Sierra and Otero counties, in the San Andres Mountains and on the western slope of the Sacramento Mountains. This plant prefers loose, gypseous-limestone soils associated with or positioned immediately below the Permian Yeso Formation; usually on steep north or east-facing slopes in piñon-juniper woodland communities, at elevations between 6,200-7,400 ft (NM Rare Plants 2022).

The project does not contain adequate habitat preferred by this species. There are no piñon-juniper woodland communities, the geology type does not occur within the area, and the elevational range preferred by this species does not occur within the project area. There would be no impact to this species.

7.6 Fish

Rio Grande silvery minnow—This fish prefers shallow, low velocity habitats that are formed by debris piles, pools, oxbows, braided stretches, and backwaters with silt bottoms. This minnow was once abundant throughout the Rio Grande and Pecos basins but is now restricted to few locations of the Rio Grande in New Mexico. The minnow inhabits the Rio Grande River, currently occupying less than 10% of its historic range, and is now only found in the Rio Grande River from Cochiti Pueblo, downstream to the in-stream flow of Elephant Butte Reservoir. Water depths for this minnow are typically moderate from 0.2 to 0.8 m (8 in. to 31.5 in.) and have velocity from 0 to 30 cm (0 to 1 ft./sec). This minnow is most commonly found in nearly still water with debris cover during the winter. However, they are found in isolated pools and in watered reaches immediately down stream of diversion structures during low flows. These minnows have also been found in irrigation ditches and canals (USFWS 2019).

The decline of the Rio Grande silvery minnow may be attributed in part to destruction and modification of its habitat due to dewatering and diversion of water throughout much of its historic range. Furthermore, water impoundment and modification of the river (channelization) may be attributed to its decline. Other contributors to its decline may include competition and predation by introduced non-native species, water quality degradation, and other factors (USFWS 2007).

There is no critical habitat for this species within or near the project area. There are no streams or surface waters within the project area that could provide habitat for this species. There would be no impact to this species.

Rio Grande cutthroat trout—This fish is a subspecies of cutthroat trout, endemic to the Rio Grande, Pecos, and possibly the Canadian River Basins in New Mexico and Colorado. They occupy high-elevation headwater streams and lakes throughout southern Colorado and New Mexico. They do not usually attain large sizes since they occupy small water bodies. Mature fish generally reach a maximum length of 10-12 inches. They mature at ages 3-5 and generally spawn in late May to early June during times of receding snowmelt runoff. This fish eats a variety of aquatic and terrestrial insects as well as the occasional fish, and they require clean, cold water, ample riparian cover, and diverse in-stream cover to survive (NMGF 2021).

There is no critical habitat for this species within or near the project area. There are no streams or surface waters within the project area that could provide habitat for this species. There would be no impact to this species.

Gila trout This fish prefers small, cool water (< 25° C) perennial montane streams ranging from 1,660 m to over 2,800 m in elevation, usually occurring in mixed conifer, montane coniferous, and sub-alpine coniferous forests. Pool habitat is critical for this fish for obtaining refuge during low flow conditions and periods of thermal extremes (Arizona Game and Fish Department 2003). This fish feeds on aquatic and terrestrial invertebrates, and adults are typically smaller because of their diet and habitat limitations.

There is no critical habitat for this species within or near the project area. There are no streams or surface waters within the project area that could provide habitat for this species. There would be no impact to this species.

7.7 Amphibians

Chiricahua leopard frog This frog's habitat requirements include permanent waters in ponds, tanks, Cienega's (wet meadows), and small streams. During occasions where water is not permanent, adult frogs may persist, but reproduction is likely not successful. They prefer habitats with a variety of plants, depths, in-water structure, and other complexities. Currently this species is restricted to springs, livestock tanks, and streams in upper portions of watersheds which are free from nonnative predators, or where marginal habitat for nonnative predators exists. This frog may potentially form a metapopulation between nearby (within 5 miles) habitats with adults moving between sites through connecting waters or overland during seasonal rainfall events. Tadpoles may be washed into new habitats after rain by higher stream flows. They are usually found between 3,281- and 8,890-feet elevation (USFWS 2022).

There is no critical habitat for this species within or near the project area. There are no tanks, streams or surface waters within the project area that could provide habitat for this species. There would be no impact to this species.

7.8 Special Status Species

No general habitat associated with, or presence of the state threatened, endangered, SGCN species, or BLM sensitive species analyzed in Tables 3 and 4 were identified during the biological surveys; therefore, there was a no effect determination for all species analyzed.

Habitat is present and occurrence is known within the proposed project area for one SGCN/BLM sensitive species, the Townsend's big-eared bat. No long-term detrimental impacts to wildlife are anticipated. Townsend's big-eared bat may benefit from the proposed action in the long-term, through more effective fencing that restricts public access to underground mine features and reduces the potential for human disturbance. BCI closure recommendations for mine features at the project area should be followed (BCI 2014, 2023).

8.0 CUMULATIVE IMPACTS

The proposed action does not increase negative impacts to the surrounding environment. There are no cumulative impacts expected to any of the listed species during implementation of the proposed action.

Access roads may facilitate erosion since they may be used for recreational activities such as hunting, hiking, and riding ATVs. Thus, existing roads and trails can provide easy access to species' habitat and facilitate their illegal harvest as they continue to be utilized in the future. In addition, roads may increase human activity in the area and increase the mortality risk for protected species. All seasonal road closures should be followed. The proposed action is not likely to contribute to these issues if no new roads would be constructed.

9.0 DETERMINATION SUMMARY

A no effect determination is recommended for all the federally listed species and candidate species in Table 2 if precautions described under Section 10, Conclusions and Recommendations, are followed. A no effect determination is recommended for all state listed threatened and endangered species for Sierra County, NM listed in Table 3. A no effect determination is recommended for all BLM sensitive species and special status species for the Las Cruces District listed in Table 4.

Townsend's big-eared bat—The proposed action *may affect but is not likely to adversely affect* SGCN/BLM sensitive Townsend's big-eared bat. The proposed action is not likely to contribute to federal

listing or a loss of viability for the following reasons: 1) disturbance is temporary and localized; and 2) BCI closure recommendations would be followed.

10.0 CONCLUSIONS AND RECOMMENDATIONS

Actions would be taken to avoid spills. Equipment would be refueled at least 100 feet from surface water and drainages. Fuel, oil, hydraulic fluid, or substances of this nature would be stored within sealed, storage containers or facilities that are located outside the floodplain. Leaking equipment would be removed from the project site until repaired and cleaned.

Staging areas would be limited to existing roads, designated pullouts and parking areas, and already disturbed areas. Any disturbed slopes would be reseeded with native upland species.

Best management practices would be used to discourage the introduction of noxious weeds during and after the proposed action. Equipment would be cleaned and free of plant and soil residue. All construction equipment would be pressure washed and/or steam cleaned before entering the watershed to ensure that all equipment, machinery, rocks, gravel, and other materials are cleaned and weed free and inspected daily for leaks. If equipment is used in an area containing invasive or noxious weeds, it would be cleaned before it is moved to another location.

Caution should be taken if construction occurs during the principal avian breeding season (March 1–August 15). If constructed during the avian breeding season, disturbance of soil and vegetation could result in the destruction of bird nests and/or the mortality of eggs or nestlings. Operations should occur outside the principal avian breeding season to reduce potential impacts on nesting birds. Avoiding construction during the breeding season is perhaps the easiest solution because nest searching would be time and labor intensive and locating all active nests in the project area would be difficult. Furthermore, if nests are found late in the season, the approval processes may not be completed until the breeding season is over, and nesting could begin between the time an area is searched and when vegetation is disturbed. If construction is to occur during avian breeding and nesting season, pre-construction nest surveys would be required to avoid direct impacts to avian species. If active nests are located during the pre-construction survey, consultation with the BLM and USFWS would occur; to avoid disturbance, construction activities at the nest sites would be delayed until fledging occurs, or a nest removal permit would be obtained from the USFWS. For active nests, buffer zones would be established to minimize disturbance. Songbird and raven nests should have a minimum 100-foot buffer.

Recommendations should be followed when installing closures to allow for bat passage within abandoned mines across the project area. Refer to Section 3.8 (Appendix C) of the attached report for closure recommendations for bats provided by BCI during the bat habitat assessment conducted in July 29-30, 2014 and July11-13, 2023. Additionally, any subsequent recommendations forthcoming in the updated report would be followed.

11.0 List of Preparers

Prepared by Randy Seeley, BRIC, LLC.

CERTIFICATION

It is believed by BRIC, LLC, a Subsidiary of Diné Development Corporation, that the proposed action would not violate any of the provisions of the Endangered Species Act of 1973, as amended. Conclusions of this report are based on actual field examination and are correct to the best of my knowledge. I certify

that I have conducted field surveys for the proposed Red Hill Mine safeguarding project in Sierra County, NM.

Randy Seeley, Wildlife Biologist, BRIC, LLC

12.0 LITERATURE CITED

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APPENDIX A. Photographs of the Red Hill Mine project area.

Photo 1. Photo facing west along access road (Easting: 289582, Northing: 3634312).

Photo 2. Photo of mine entrance (Easting: 289945, Northing: 3634001).

Photo 3. Photo facing south (Easting: 289968, Northing: 3633829).

Photo 4. Photo of sign located within project area.

Photo 5. Photo facing west (Easting: 289784, Northing: 3634197).

Photo 6. Photo facing north (Easting: 289114, Northing: 3634567).

APPENDIX B. Federal and State Listed Species.

United States Department of the Interior
FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
Phone: (505) 346-2525 Fax: (505) 346-2542

In Reply Refer To: July 20, 2022
Project Code: 2022-0065717
Project Name: Red Hill Mine Biological Survey

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Thank you for your recent request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of New Mexico wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act as amended (16 USC 701-715), and the Bald and Golden Eagle Protection Act as amended (16 USC 668-668(c)). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area, and to recommend some conservation measures that can be included in your project design.

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the ESA of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the ESA is to provide a means whereby threatened and endangered species and

the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (NEPA; 42 USC 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

Candidate Species and Other Sensitive Species

A list of candidate and other sensitive species in your area is also attached. Candidate species and other sensitive species are species that have no legal protection under the ESA, although we recommend that candidate and other sensitive species be included in your surveys and considered for planning purposes. The Service monitors the status of these species. If significant declines occur, these species could potentially be listed. Therefore, actions that may contribute to their decline should be avoided.

Lists of sensitive species including State-listed endangered and threatened species are compiled by New Mexico State agencies. These lists, along with species information, can be found at the following websites.

Biota Information System of New Mexico (BISON-M): www.bison-m.org

New Mexico State Forestry. The New Mexico Endangered Plant Program: https://www.emnrd.nm.gov/sfd/rare-plants/

New Mexico Rare Plant Technical Council, New Mexico Rare Plants: nmrareplants.unm.edu

Natural Heritage New Mexico, online species database: nhnm.unm.edu

WETLANDS AND FLOODPLAINS

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value.

We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website, www.fws.gov/wetlands/Data/Mapper.html, integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

MIGRATORY BIRDS

In addition to responsibilities to protect threatened and endangered species under the ESA, there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the Service (50 CFR 10.12 and 16 USC 668(a)). For more information regarding these Acts see https://www.fenws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a Federal nexus) or a Bird/Eagle Conservation Plan (when there is no Federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php. We also recommend review of the Birds of Conservation Concern list (https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php) to fully evaluate the effects to the birds at your site. This list identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent top conservation priorities for the Service, and are potentially threatened by disturbance, habitat impacts, or other project development activities.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 thereby provides additional protection for both migratory birds and migratory bird habitat. Please visit https://www.fws.gov/migratorybirds/pdf/management/executiveordertoprotectmigratorybirds.pdf for information

regarding the implementation of Executive Order 13186.

We suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding State protected and at-risk species fish, wildlife, and plants.

For further consultation with the Service we recommend submitting inquiries or assessments electronically to our incoming email box at nmesfo@fws.gov, where it will be more promptly routed to the appropriate biologist for review.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Migratory Birds

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
(505) 346-2525

Project Summary

Project Code: 2022-0065717
Event Code: None
Project Name: Red Hill Mine Biological Survey
Project Type: Mine Closure
Project Description: The Abandoned Mine Land (AML) Program requests an itemized fee schedule reflecting the costs necessary to prepare a Biological Assessment and Biological Evaluation (BA/BE), Cultural Resource Inventory/Report, and Environmental Assessment (EA) in preparation for abandoned mine reclamation and safeguarding work at Red Hill in the Caballo Mountains Mining District. The proposed project area is located in Sierra County and is approximately 3 miles northwest of Derry, New Mexico (USGS Garfield and McLeod Tank 7.5' quadrangles, in Township 17 S, Range 4 W). The proposed Area of Potential Effect (APE) includes approximately 796 acres of land administered by the Bureau of Land Management (BLM) and State Land Office (SLO).

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.83090345,-107.25177045720869,14z

Counties: Sierra County, New Mexico

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Mexican Wolf *Canis lupus baileyi* Population: U.S.A. (portions of AZ and NM)see 17.84(k) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3916	Experimental Population, Non-Essential

Birds

NAME	STATUS
Mexican Spotted Owl *Strix occidentalis lucida* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Northern Aplomado Falcon *Falco femoralis septentrionalis* Population: U.S.A (AZ, NM) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Experimental Population, Non-Essential
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
Chiricahua Leopard Frog *Rana chiricahuensis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1516	Threatened

Fishes

NAME	STATUS
Gila Trout *Oncorhynchus gilae* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/781	Threatened
Rio Grande Cutthroat Trout *Oncorhynchus clarkii virginalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/920	Candidate
Rio Grande Silvery Minnow *Hybognathus amarus* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1391	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Todsen's Pennyroyal *Hedeoma todsenii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1081	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Jul 31
Black-chinned Sparrow *Spizella atrogularis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31

NAME	BREEDING SEASON
Cassin's Sparrow *Aimophila cassinii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9512	Breeds Aug 1 to Oct 10
Chestnut-collared Longspur *Calcarius ornatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Ferruginous Hawk *Buteo regalis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6038	Breeds Mar 15 to Aug 15
Grace's Warbler *Dendroica graciae* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 20 to Jul 20
Long-billed Curlew *Numenius americanus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Virginia's Warbler *Vermivora virginiae* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9441	Breeds May 1 to Jul 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see

below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

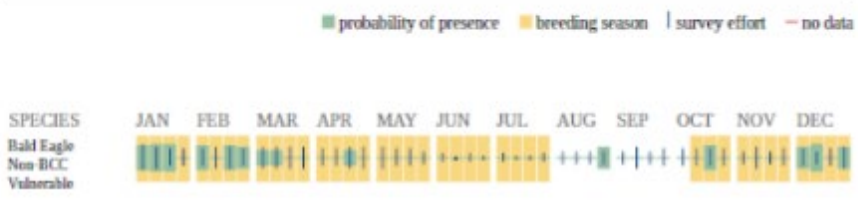
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

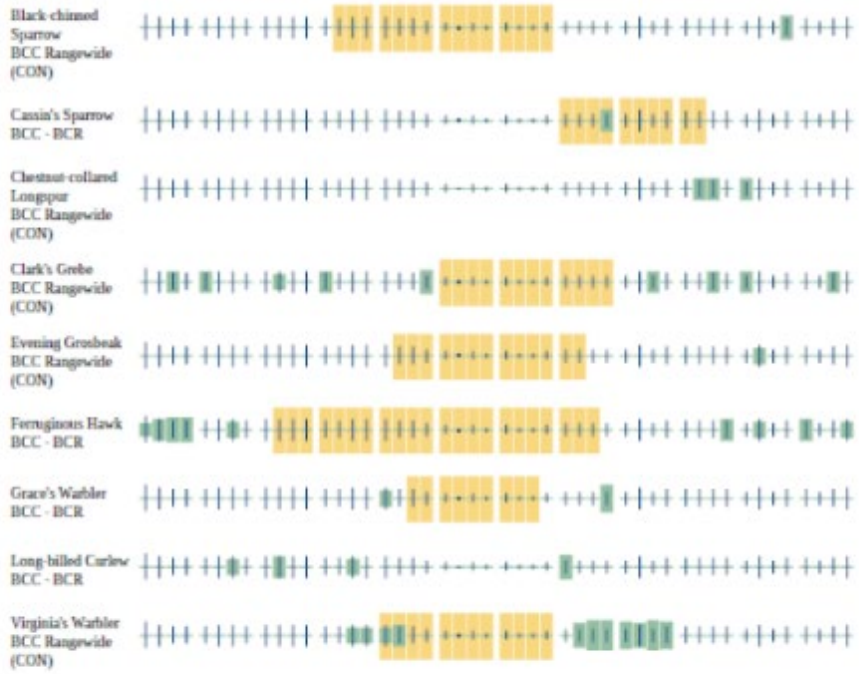
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

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2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Species of Greatest Conservation Need and Federal or State Threatened/Endangered

Sierra

Taxonomic Group	# Species	Taxonomic Group	# Species
Amphibians	1	Birds	19
Fish	3	Mammals	2
Molluscs	1	Reptiles	1

TOTAL SPECIES: 27

Common Name	Scientific Name	NMGF	US FWS	Critical Habitat	SGCN	Photo
Mexican Gray Wolf	Canis lupus baileyi	E	E		Y	View
Penasco Least Chipmunk	Neotamias minimus atristriatus	E	P		Y	View
Common Ground Dove	Columbina passerina	E			Y	View
Yellow-billed Cuckoo (western pop)	Coccyzus americanus occidentalis		T	Y	Y	View
Lucifer Hummingbird	Calothorax lucifer	T			Y	View
Costa's Hummingbird	Calypte costae	T			Y	View
Broad-billed Hummingbird	Cynanthus latirostris	T			Y	View
Least Tern	Sternula antillarum	E			Y	View
Neotropic Cormorant	Phalacrocorax brasilianus	T			Y	View
Bald Eagle	Haliaeetus leucocephalus	T			Y	View
Common Black Hawk	Buteogallus anthracinus	T			Y	View
Mexican Spotted Owl	Strix occidentalis lucida		T	Y	Y	View
Elegant Trogon	Trogon elegans	E			Y	View
Aplomado Falcon	Falco femoralis	E	E		Y	View
Peregrine Falcon	Falco peregrinus	T			Y	View
Thick-billed Kingbird	Tyrannus crassirostris	E			Y	View
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y	Y	View
Bell's Vireo	Vireo bellii	T			Y	View
Gray Vireo	Vireo vicinior	T			Y	View
Baird's Sparrow	Centronyx bairdii	T			Y	View
Varied Bunting	Passerina versicolor	T			Y	View
Mottled Rock Rattlesnake	Crotalus lepidus lepidus	T			Y	View
Chiricahua Leopard Frog	Lithobates chiricahuensis		T	Y	Y	View
Roundtail Chub (lower Colorado River populations)	Gila robusta	E			Y	View

11/8/2022 (E=Endangered, T=Threatened) Page 1 of 2

Species of Greatest Conservation Need and Federal or State Threatened/Endangered

Sierra

Common Name	Scientific Name	NMGF	US FWS	Critical Habitat	SGCN	Photo
Gila Trout	Oncorhynchus gilae	T	T		Y	View
White Sands Pupfish	Cyprinodon tularosa	T			Y	View
Mineral Creek Mountainsnail	Oreohelix pilsbryi	T			Y	No Photo

APPENDIX C. Bat Habitat Assessment conducted by Bat Conservation International in 2014 and 2023.

APPENDIX B. BCI CLOSURE RECOMMENDATIONS AND CLAIMANT REQUESTS FOR PROPOSED MINE FEATURE SAFEGUARDING

batcon.org
BAT CONSERVATION INTERNATIONAL

To: Chris Teske
Abandoned Mine Land Coordinator
Bureau of Land Management
1800 Marquess Street
Las Cruces, NM 88005

From: Jason Corbett
Director, Subterranean Programs

Shawn Thomas
Subterranean Program Manager

Bat Conservation International
PO Box 22159
Flagstaff, AZ, 86002

Subject: Report on Rincon Abandoned Mine Surveys

Dates of Evaluation: July 29-30, 2014

Overview:
This survey project assessed abandoned mines in the Rincon project area, located in the Caballo Mountains of New Mexico between Hatch and Truth or Consequences. All sites were surveyed by Bat Conservation International (BCI) staff following standardized protocols and safety procedures, for the purpose of providing biological data and closure recommendations. Surveys focused on documenting bat and other wildlife use of each feature. A total of twenty AML features represented by unique identifiers, provided by the BLM, were surveyed. In three instances, however, a group of features (either two or three) were found to be connected and were assessed with a single survey representing the group, resulting in fifteen unique sites that received a comprehensive biological survey. Closure recommendations are provided for all features. A biological survey summary and full survey results can be referenced on the following pages.

Acknowledgements:
BCI wishes to thank Chris Teske and his crew-providing maps, site inventory descriptions, and GIS data.

All surveys conducted by BCI Subterranean Program staff: Anthony Smith, Abram Haddon, and Jack Purson.

Report, datasheets, and photos provided to BLM April 2, 2015.

Conserving the world's bats and their ecosystems to ensure a healthy planet.
P.O. Box 162603, Austin, TX 78716 • Phone (512) 327-9721 Fax (512) 327-9724

SECTION 1: SURVEY SUMMARY

Biological survey summary:
Of the fifteen separate sites that received comprehensive biological surveys, seven sites contained bats (sometimes in association with other signs of bat use, such as guano and/or moth wings), and an additional six sites contained other bat sign. Two sites contained no bats or any sign of bat use. Bats observed were limited to a single species, the Townsend's big-eared bat (*Corynorhinus townsendii*). Overall, bat use of the occupied sites appears largely isolated to summer day roosting and/or night roosting by a small number of individuals. One site, however, contained a significant cluster of bats that likely represents an important maternity colony.

Bats Observed:
Townsend's big-eared bat; *Corynorhinus townsendii*; COTO
Roosts of 2, 1, 3, 2, 2, 30-40, 1:
Total of 41-51 COTO bats.

Other Wildlife Observed:
In addition to bat observations, all surveys documented other live animals encountered or other evidence of wildlife use. Beyond standard woodrat use and other small mammal sign, no other animal use of importance was noted.

Bat Habitat Assessment Summary:
Each of the fifteen unique surveys received a bat habitat assessment, which is determined based on observed bats and bat sign, along with physical characteristics of the site such as portal size and obstructions, ceiling textures that bats select for, hydrological activity (such as seasonal flooding) that may preclude bat use, and any additional observations that may influence bat use of the site. Bat habitat was classified as "poor" for a single feature, "marginal" for three features, "moderate" for seven features, "good" for three features, and "excellent" for a single feature.

Closure Recommendation Summary:
Closure recommendations generally fall into bat-friendly or destructive closure categories, and include a seasonal component that recommends the closure to occur either during the warm season, cold season, or at any time. The fifteen sites surveyed are represented by twenty entrance portals (two sites have three entrances each and one site has two entrances).

Ten sites have been recommended for bat-friendly closure to protect the bat habitat within and allow for continued bat use. These ten sites total fifteen entrance portals. All of these bat-friendly closures are recommended to occur during the cold season, "bat compatible closure cold season" (BCWS), when bats are not active and potentially aggregated in maternity colonies. The recommended date range for these closures to occur is from October 1 through March 31.

Five sites, each with a single entrance portal, have been recommended for destructive closure. Of these five sites, four are recommended for "destructive closure warm season" (DCWS). The recommended date range for these closures to occur is from April 1 through September 30. One site is recommended for "close by any means" (CBAM), which can be closed at any time.

For the warm season destructive closures, it is critical to first conduct exclusion techniques on the site to ensure any bats that might be present have an opportunity to exit the site before it is closed. If exclusion is not conducted, there is a possibility that bats could be trapped and destroyed during the closure. Exclusion techniques are detailed in BCI's "Managing Abandoned Mines for Bats" publication.

Appendices:
Appendix 1 includes a table summarizing bats and bat use observed, bat habitat assessments, and closure recommendations. Appendix 2 contains selected photos from the survey project.

SECTION 2: FULL SURVEY RESULTS

Unless otherwise noted, all features should be considered to be driven in moderate- to good-quality rock (qualitative safety assessment), contain good air*, and exhibit minimal signs of post-mining human disturbance.
* Good air is defined as no alarm sounding on the Altair 4x Multigas Detector carried during all surveys. The detector measures four gases (oxygen, carbon monoxide, hydrogen sulfide, methane) and alarms for gas levels that fall outside of safe thresholds.

Feature: BLM ID#: AMLRNMG17SR04WS15_12 (Rinc0002)
Location: WGS84 13S 289691.0002 3634087.707
Elevation: 4758'
Survey Date: 2014-07-30

Observations: This feature is a simple blind adit stretching 97 feet long. The feature stability was found to be good with some human disturbance. Graffiti was painted, written, and carved on the walls. Two bats were found to be roosting during the time of survey and were Townsend's big-eared bats (*Corynorhinus townsendii*). Scattered guano and insect parts were found to be present. Bat habitat was assessed as moderate.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS15_23 (Rinc0003)
Location: WGS84 13S 289932.1226 3634146.714
Elevation: 4923'
Survey Date: 2014-07-29

Observations: This feature is an adit composed of three rooms approximating 70 feet of workings. The stability was assessed as marginal to fair and is supported by several wooden timbers. One bat was detected at the time of the survey and was a *Corynorhinus townsendii*. Scattered guano and low human disturbance were observed. Bat habitat was assessed as moderate.

Recommendation: Destructive Closure, Warm Season (Apr 1-Sep 30) – Exclude Prior to Closure

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Feature: BLM ID#: AMLRNMG17SR04WS15_01 (Rinc0004)
Location: WGS84 13S 289531.4375 3634429.433
Elevation: 4745'
Survey Date: 2014-07-29

Observations: This feature is a shaft 57 feet deep with two drifts measuring 14 and 13 feet long. The rock stability varied with an overall assessment of marginal to fair. Guano was found to be scattered and in piles but appears old. No bats were found at the time of survey. A moderate level of human disturbance of recent clothing, trash, and beer cans littered the bottom of the shaft. The bat habitat was assessed as moderate.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS15_03 (Rinc0005)
Location: WGS84 13S 289803.7055 3634146.801
Elevation: 4942'
Survey Date: 2014-07-29

Observations: A simple adit connecting to a shaft (AMLRNMG17SR04WS15_04), measuring 141 feet of workings. Scattered guano found as well as five piles with roost staining located above. Three *Corynorhinus townsendii* were found to be roosting during the survey. Bat habitat was found to be good.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS22_01 (Rinc0006)
Location: WGS84 13S 290086.8034 3633755.202
Elevation: 4853'
Survey Date: 2014-07-30

Observations: Large open adit containing scattered and piles of guano with moth wings. Some trash found, 1940s refrigerator and mattress springs. Bat habitat was found to be good.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS22_04 (Rinc0007)
Location: WGS84 13S 290060.9027 3633872.091
Elevation: 4935'
Survey Date: 2014-07-30

Observations: Simple blind and bald shaft 7 feet deep on hillside. Wood beams found at bottom. No evidence of bat usage found. Bat habitat was found to be poor.

Recommendation: Destructive Closure, Warm Season (Apr 1-Sep 30)

Feature: BLM ID#: AMLRNMG17SR04WS15_25 (Rinc0008)
Location: WGS84 13S 289940.0616 3633994.945
Elevation: 4961'
Survey Date: 2014-07-29

Observations: Simple forked adit with 190 feet of workings. Wooden grizzly directly outside mine entrance. No guano or other evidence of prolonged bat usage. Two *Corynorhinus townsendii* were found to inhabit the feature at time of survey. Bat habitat was found to be moderate.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS15_17 (Rinc0009)
Location: WGS84 13S 289871.7266 3634087.321
Elevation: 4968'
Survey Date: 2014-07-30

Observations: Simple shaft with no collar ten feet deep connecting to adits (AMLRNMG17SR04WS15_18) and (AMLRNMG17SR04WS15_21). 163 feet of workings. No guano was found but may have been recently covered with mud. Recent moth wing accumulations and two *Corynorhinus townsendii* were found at time of survey. Bat habitat was found to be good.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS15_18 (Rinc0010)
Location: WGS84 13S 289872.0244 3634094.569
Elevation: 4968'
Survey Date: 2014-07-30

Observations: Simple adit connecting to adit (AMLRNMG17SR04WS15_21) and shaft (AMLRNMG17SR04WS15_17). 163 feet of workings. No guano was found but may have been recently covered with mud. Recent moth wing accumulations and two *Corynorhinus townsendii* were found at time of survey. Bat habitat was found to be good.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS15_20 (Rinc0011)
Location: WGS84 13S 289872.9733 3634115.952
Elevation: 4978'
Survey Date: 2014-07-30

Observations: Natural cave with 15 foot drop, after shelf it narrows down to non-human passible width. Large guano pile found measuring 4 feet by 3 feet. Bat habitat was found to be good.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS15_21 (Rinc0012)
Location: WGS84 13S 289872.7616 3634109.993
Elevation: 4962'
Survey Date: 2015-07-30

Observations: Simple adit connecting to adit (AMLRNMG17SR04WS15_18) and shaft (AMLRNMG17SR04WS15_17). 163 feet of workings. No guano was found but may have been recently covered with mud. Recent moth wing accumulations and two *Corynorhinus townsendii* were found at time of survey. Bat habitat was found to be good.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS15_04 (Rinc0013)
Location: WGS84 13S 289828.0898 3634164.1
Elevation: 4949'
Survey Date: 2015-07-29

Observations: A simple shaft connecting to an adit (AMLRNMG17SR04WS15_03), measuring 141 feet of workings. Scattered guano found as well as five piles with roost staining located above. Three *Corynorhinus townsendii* were found to be roosting during the survey. Bat habitat was found to be good.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS22_02 (Rinc0014)
Location: WGS84 13S 290083.4588 3633740.347
Elevation: 4863'
Survey Date: 2015-07-30

Observations: Simple adit with two entrances passing through ridge of mountain with 34 feet of workings. No bats or bat evidence were found. Bat habitat was assessed as marginal.

Recommendation: Destructive Closure, Warm Season (Apr 1-Sep 30) – Exclude Prior to Closure

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Feature: BLM ID#: AMLRNMG17SR04WS22_05 (Rinc0015)
Location: WGS84 13S 290050.8917 3633851.979
Elevation: 4912'
Survey Date: 2015-07-30

Observations: Simple forked adit with 180 feet of workings. The left fork was found to be damp with both sides showing mud cracks and evidence of past flooding. Scattered guano found on both sides. Bat habitat was found to be marginal.

Recommendation: Destructive Closure, Warm Season (Apr 1-Sep 30)– Exclude Prior to Closure

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Feature: BLM ID#: AMLRNMG17SR04WS15_24 (Rinc0016)
Location: WGS84 13S 289933.8329 3633993.549
Elevation: 4942'
Survey Date: 2014-07-29

Observations: Simple adit with a few short drifts. Wooden ramp leading to a grizzly just outside of entrance. Evidence of fire in front room. Total workings measuring over 350 feet. An area measuring approximately 16 square inches was covered by a *Corynorhinus townsendii* cluster estimated to be about 30-40 bats. Scattered guano found throughout feature. Bat habitat was found to be excellent.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS22_12 (Rinc0017)
Location: WGS84 13S 289967.8136 3633922.822
Elevation: 4955'
Survey Date: 2014-07-30

Observations: Simple shaft with no collar and a depth of 17 feet; connecting to adits (AMLRNMG17SR04WS22_11) and (AMLRNMG17SR04WS22_13). Evidence of periodic flooding that may be hiding additional deposits of guano beyond a single pile and some scattered in sections. Bat habitat was found to be moderate.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS15_10 (Rinc0018)
Location: WGS84 13S 289861.5869 3634097.2410
Elevation: 4976'
Survey Date: 2015-07-30

Observations: Simple adit measuring 51 feet of passage. Shaped flat like a pancake except for walking passage through the center. Guano found in piles. Bat habitat was found to be moderate.

Recommendation: Bat compatible closure, Cold Season (Oct 1-Mar 31).

Feature: BLM ID#: AMLRNMG17SR04WS22_10 (Rinc0019)
Location: WGS84 13S 289968.3210 3633886.1870
Elevation: 4935'
Survey Date: 2014-07-30

Observations: Simple ,short, blind and bald adit with 18 feet of workings. One *Corynorhinus townsendii* found inhabiting at time of survey with no other bat evidence. Bat habitat was found to be marginal.

Recommendation: Destructive Closure, Warm Season (Apr 1-Sep 30) – Exclude Prior to Closure

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Feature: BLM ID#: AMLRNMG17SR04WS22_11 (Rinc0020)
Location: WGS84 13S 289963.7402 3633900.0130
Elevation: 4976'
Survey Date: 2015-07-30

Observations: Simple adit connecting to adit (AMLRNMG17SR04WS22_13) and shaft (AMLRNMG17SR04WS22_12). Evidence of periodic flooding that may be hiding additional deposits of guano beyond a single pile and some scattered in sections. Bat habitat was found to be moderate.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

Feature: BLM ID#: AMLRNMG17SR04WS22_13 (Rinc0021)
Location: WGS84 13S 289985.8608 3633907.7600
Elevation: 4925'
Survey Date: 2015-07-30

Observations: Simple adit connecting to adit (AMLRNMG17SR04WS22_11) and shaft (AMLRNMG17SR04WS22_12). Evidence of periodic flooding that may be hiding additional

deposits of guano beyond a single pile and some scattered in sections. Bat habitat was found to be moderate.

Recommendation: Bat Compatible Closure, Cold Season (Oct 1-Mar 31)

APPENDIX 1

Table 1. Summary of bats, bat sign, bat habitat assessments, and closure recommendations in Rincon AML features.

Feature	Bats[1]	Other Bat Sign	Bat Habitat	Closure Recommendation[2]
15_12 (Rinc0002)	2 COTO	guano; moth wings	moderate	BCCS
15_23 (Rinc0003)	1 COTO	guano	moderate	DCWS
15_01 (Rinc0004)	none	guano	moderate	BCCS
15_03 (Rinc0005) / 15_04 (Rinc0013)	3 COTO	guano	good	BCCS
22_01 (Rinc0006)	none	guano; moth wings	moderate	BCCS
22_04 (Rinc0007)	none	none	poor	DCWS
15_25 (Rinc0008)	2 COTO	none	moderate	BCCS
15_17 (Rinc0009) / 15_18 (Rinc0010) / 15_21 (Rinc0012)	2 COTO	moth wings	good	BCCS
15_20 (Rinc0011)	none	guano	good	BCCS
22_02 (Rinc0014)	none	none	marginal	DCWS
22_05 (Rinc0015)	none	guano	marginal	DCWS
15_24 (Rinc0016)	30-40 COTO	guano	excellent	BCCS
22_12 (Rinc0017) / 22_11 (Rinc0020) / 22_13 (Rinc0021)	none	guano	moderate	BCCS
15_10 (Rinc0018)	none	guano	moderate	BCCS
22_10 (Rinc0019)	1 COTO	none	marginal	DCWS

[1]Bat species codes:
COTO = *Corynorhinus townsendii*; MYSP = *Myotis sp.*; EPFU = *Eptesicus fuscus*

[2]Closure recommendations:
CBAM – close by any means; BCWS – bat closure warm season; BCCS – bat closure cold season; BCAT – bat closure any time; DCWS – destructive closure warm season; DC 1CS – destructive closure cold season

APPENDIX 2

The following photos represent a subset of the full collection of project photos. All photos were provided to the BLM in digital form with this report.

Townsend's big-eared bat colony in Rinc0016.

Jack surveying in Rinc0016.

Jack next to a significant guano pile in Rinc0006.

Solitary Townsend's big-eared bat in Rinc0005 / Rinc0013

BAT CONSERVATION INTERNATIONAL

Final Report:
Red Hill
Abandoned Mine Bat Surveys
July 11-13, 2023

Agreement 22-521-0600-0005, Task Order 2-2023

AMLRNMG17SR04WS15_01: BCI employee ascends out of the shaft.
BCI Photo by Kathleen Slocum

Submitted October 13, 2023

Conserving the world's bats and their ecosystems to ensure a healthy planet.

Contents

Acknowledgements

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All surveys were conducted by BCI Subterranean Team staff: Alexi Kimiatek, Kathleen Slocum, and Harrison Tamayo. This report was authored by Alexi Kimiatek with survey protocol content and report design by Shawn Thomas. Geospatial products were created by Priyesh Patel and Bianca Signorini.

Overview

BAT SURVEYS:
This biological survey project assessed abandoned mine land (AML) features at Red Hill in southern New Mexico, managed by the Bureau of Land Management (BLM). The AML features surveyed are located southeast of the Caballo Reservoir, near Truth or Consequences, NM. All sites were surveyed by Bat Conservation International (BCI) staff following standardized protocols and safety procedures for providing subterranean biological data and closure recommendations. Surveys focused on documenting bat and other wildlife use of each feature. The field project resulted in bat surveys being conducted on 29 distinct features, comprising 36 openings to the surface (Table 1, Figures 1-3). Bat habitat assessments and closure recommendations are provided for all features. Selected photos appear in Appendix 1.

Table 1. Summary of bat survey results and closure recommendations.

Feature[1]	Alternate Feature ID	Closure Rec.[2]	Live Bats[3]	Other Bat Sign	Roost Function	Bat Habitat
AMLRNMG17SR04WS09_05	380_7	DCAT	0	none	undetermined	Poor
AMLRNMG17SR04WS15_01	F1, Rinc 0004	BCAT	0	guano, insect parts	night roost	Moderate
AMLRNMG17SR04WS15_03	365_14, Rinc 0005	BCAT	1 EPFU 2 MYSP	guano, insect parts, roost stain	day roost, night roost, warm season colony, possible hibernaculum	Good
AMLRNMG17SR04WS15_04		BCAT				
AMLRNMG17SR04WS15_09	9.2	LAI	0	none	undetermined	Poor
AMLRNMG17SR04WS15_10	F9.3, Rinc 0018	BCAT	1 COTO	guano, insect parts, roost stain	day roost, night roost	Moderate
AMLRNMG17SR04WS15_11	9.1	LAI	0	none	undetermined	Poor
AMLRNMG17SR04WS15_12	F54, Rinc 0002	BCCS	2 COTO 1 PAHE	guano, insect parts, roost stain	day roost, night roost, warm season colony, possible hibernaculum	Good
AMLRNMG17SR04WS15_20	365_9.5, Rinc 0011	BCAT	1 COTO	none	day roost	Moderate
AMLRNMG17SR04WS15_21	365_9.4	BCWS	3 COTO	guano, insect parts	day roost, night roost, possible hibernaculum	Moderate
AMLRNMG17SR04WS15_17		BCWS				
AMLRNMG17SR04WS15_18		BCWS				
AMLRNMG17SR04WS15_23	F3, Rinc 0003	BCAT	0	guano	undetermined	Marginal
AMLRNMG17SR04WS15_24a	F19.1	BCCS	4 COTO	guano, insect parts, roost stain, vocalization	day roost, night roost, possible hibernaculum, warm season colony	Good
AMLRNMG17SR04WS15_24b		BCCS				
AMLRNMG17SR04WS15_25	365_19.3, Rinc 0008	BCCS	≥8 COTO	guano, insect parts, roost stain, vocalization	day roost, night roost, warm season colony, possible hibernaculum	Excellent
AMLRNMG17SR04WS15_30	F17.1	BCAT	1 COTO	guano, insect parts	day roost, night roost	Moderate
AMLRNMG17SR04WS16_07	F12	LAI	0	none	undetermined	Poor
AMLRNMG17SR04WS16_18	387_2	LAI	1 COTO 1 PAHE	guano, insect parts	day roost, night roost	Moderate
AMLRNMG17SR04WS16_18a	387_3	LAI	0	guano	night roost	Marginal
AMLRNMG17SR04WS22_01	365_44.1, Rinc 0006	LAI	0	guano, insect parts	day roost, night roost	Good

Feature[1]	Alternate Feature ID	Closure Rec.[2]	Live Bats[3]	Other Bat Sign	Roost Function	Bat Habitat
AMLRNMG17SR04WS22_02a	365_44.2, Rinc 0014	LAI	0	none	undetermined	Marginal
AMLRNMG17SR04WS22_02b	365_44.3	LAI				
AMLRNMG17SR04WS22_03	365_47	LAI	0	guano	day roost	Marginal
AMLRNMG17SR04WS22_04	F39, Rinc 0007	LAI	0	none	none	Poor
AMLRNMG17SR04WS22_05a	365_40.2a, F40.1, Rinc 0015	BCAT	0	guano, insect parts	night roost, day roost, possible hibernaculum	Good
AMLRNMG17SR04WS22_05b	365_40.2b	BCAT				
AMLRNMG17SR04WS22_05c	365_40.1,	BCAT	0	guano, insect parts	day roost, night roost	Good
AMLRNMG17SR04WS22_10	none	BCAT	0	guano, insect parts	day roost, night roost	Marginal
AMLRNMG17SR04WS22_11	365_23, Rinc 0020	BCCS	≥10 COTO	guano, insect parts, vocalization	warm season colony, day roost, night roost, possible hibernaculum	Excellent
AMLRNMG17SR04WS22_12	Rinc 0017	BCCS				
AMLRNMG17SR04WS22_13	22_13, Rinc 0021	DCWS	0	guano	undetermined	Marginal
AMLRNMG17SR04WS22_15	365_31	LAI	0	none	none	Poor
AMLRNMG17SR04WS22_16	365_43	LAI	0	none	none	Poor
371_1	F16.1	LAI	0	none	undetermined	Poor
369_9	369_9, F9	LAI	0	none	none	Poor

[1]Feature: A distinct feature may consist of a single opening, multiple openings interconnected via underground workings, or closely related surface workings. In the "Feature" column, distinct features are separated by solid lines, and associated openings of a feature are separated by dashed lines. A feature contains shared biological and habitat characteristics and is therefore described by a single survey, whereas closure recommendations are unique to each opening.

[2]Closure recommendations:

Wildlife-compatible Closures
BCAT – bat-compatible closure, any time
BCCS – bat-compatible closure, cold season
BCWS – bat-compatible closure, warm season
OWC – other wildlife-compatible closure
CM – closure modification

No Action
LAI – leave as is

Destructive Closures
DCAT – destructive closure, any time
DCWS – destructive closure, warm season

Other Closure Type
AC – airflow closure

[3]Bat species codes:

COTO – Townsend's big-eared bat (*Corynorhinus townsendii*)
EPFU – big brown bat (*Eptesicus fuscus*)
MYSP – genus *Myotis*, species unknown
PAHE – canyon bat (*Parastrellus hesperus*)

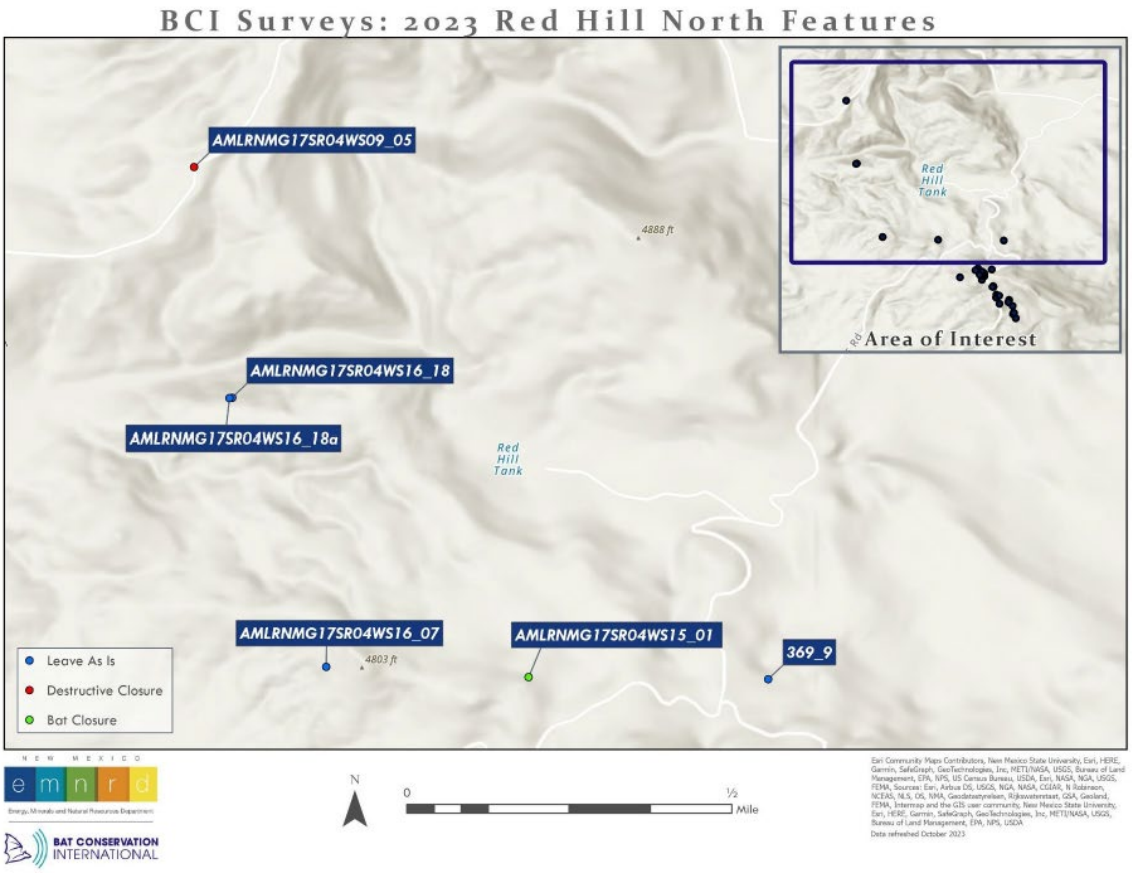

Figure 1: Map of Features Surveyed in the Northern Project Area

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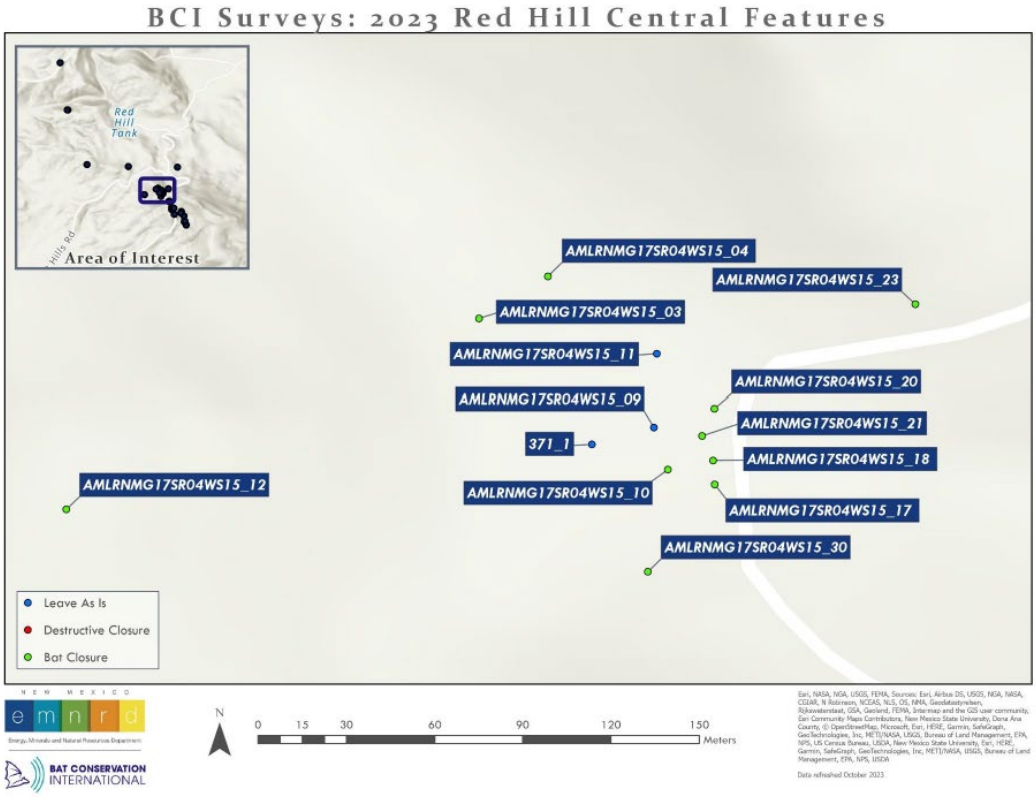

Figure 2: Map of Features Surveyed in the Central Project Area

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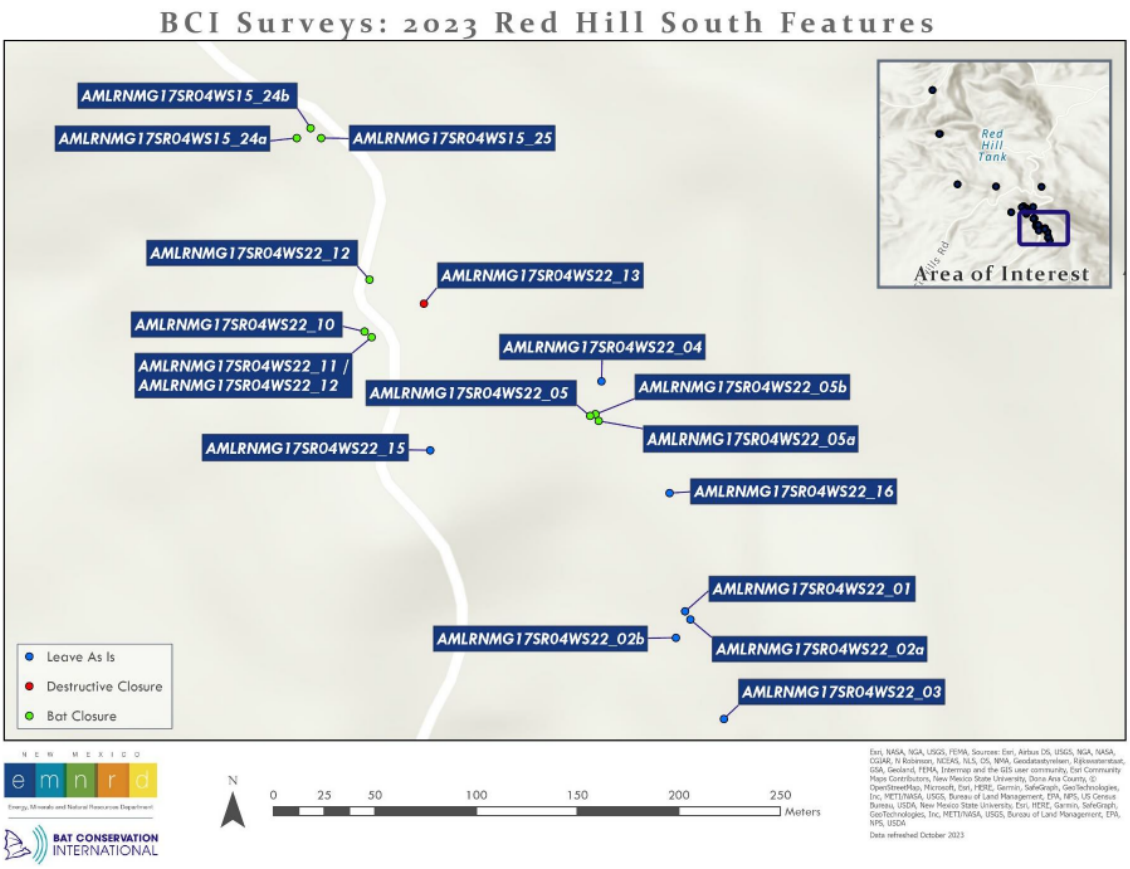

Figure 3: Map of Features Surveyed in the Southern Project Area

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Section 1: Survey Methods

BIOLOGICAL SURVEYS:
Biological data is collected via internal surveys after abandoned mine land (AML) features are assessed and determined to be safe to enter. Internal surveys are the most efficient and effective means of assessing habitat quality and wildlife use. Surveys are focused on subterranean habitat, with a primary emphasis on bat use. Surveys attempt to identify bat species present, document other bat sign (e.g., guano, insect parts, roost staining), and determine roost function of the site. Additionally, surveys document other wildlife use of features, evident by live animals, scat, nests, etc. All bat and other wildlife observations inform habitat assessments and closure recommendations.

BAT HABITAT ASSESSMENT SUMMARY:
Bat habitat assessments are determined based on observed bats and bat sign, along with physical characteristics of the site such as complexity and extensiveness of workings, portal size and obstructions, ceiling textures that bats select for, hydrological activity (such as seasonal flooding) that may preclude bat use, and any additional observations that may influence bat use of the site. A bat habitat assessment is applied to each distinct AML feature, which may include multiple openings.

- None
- Poor
- Marginal
- Moderate
- Good
- Excellent
- Unknown

See Appendix 2 for descriptions of bat habitat assessment classifications.

CLOSURE RECOMMENDATIONS:
Closure recommendations generally fall into bat-compatible or destructive closure categories and include a seasonal component that recommends the closure to occur either during the warm season, cold season, or at any time. A closure recommendation is provided for each individual opening of an AML feature and is selected from the following options:

- BCAT: Bat-compatible Closure, Any Time
- BCCS: Bat-compatible Closure, Cold Season
- BCWS: Bat-compatible Closure, Warm Season
- OWC: Other Wildlife-compatible Closure
- DCAT: Destructive Closure, Any Time
- DCWS: Destructive Closure, Warm Season
- LAI: Leave As Is
- CM: Closure Modification
- AC: Airflow Closure

See Appendix 3 for descriptions of closure recommendation classifications and Appendix 4 for guidance on conducting exclusion prior to closure.

Section 2: Survey Results

AML FEATURE DESCRIPTIONS:
Unless otherwise noted, all features are driven in moderate- to good-quality rock (qualitative safety assessment), contain good air*, and exhibit minimal signs of post-mining human disturbance. All feature locations are listed as latitude and longitude (decimal degrees) in the WGS84 datum.
* Good air is defined as no alarm sounding on the Altair 4x Multi-gas Detector carried during all surveys. The detector measures four gases (oxygen, carbon monoxide, hydrogen sulfide, methane) and alarms for gas levels that fall outside of safe thresholds.

Feature: AMLRNMG17SR04WS09_05
Alternate Feature ID: 380_7
Location: 32.83898500, -107.25589100
Date: July 12, 2023
Observations: This feature is a 12' long, low-backed prospect adit driven in friable country rock. No bat sign was observed. Other wildlife sign observed included ample bird guano, and woodrat scat. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Poor
Closure Recommendation: Destructive Closure, Any Time (DCAT)

Feature: AMLRNMG17SR04WS15_01
Alternate Feature ID: F1, Rinc 0004
Location: 32.82769500, -107.24846400
Date: July 11, 2023
BCI Survey History: July 29, 2014- guano piles, light guano scatter.
Observations: This feature is a 55' deep shaft driven in solid limestone. Two lateral drifts extend off the shaft; a 16' long drift extends from 17' below the collar, and a 19' long drift extends from 32' below the collar. Bat sign observed included light guano scatter mixed with insect parts, indicating use as a night roost. Other wildlife sign observed included live crickets, mouse scat, and woodrat scat and middens. Historical cultural artifacts observed included timbers and buckets. Modern human disturbance was high; numerous bottles and cans lay at the shaft bottom.
Bat Habitat: Moderate
Closure Recommendation: Bat-compatible Closure, Any Time (BCAT)

Feature: AMLRNMG17SR04WS15_03 / AMLRNMG17SR04WS15_04
Alternate Feature ID: 365_14, Rinc 0005
Location: 15_03: 32.82524500, -107.24543400
15_04: 32.8252401, -107.245202
Date: July 12, 2023
BCI Survey History: July 29, 2014- Three live Townsend's big-eared bats, guano piles and scatter.
Observations: This feature is an adit shaft complex with approximately 110' of total workings. From portal 15_03, the feature extends 80 to a solid rock face. A 30' drift at the face connects to the bottom of the 8' deep shaft 15_04. One live big brown bat and 2 live myotis bats were observed roosting in drill holes. Other bat sign observed included a large guano pile beneath a roost-stained dome, as well as light guano scatter and insect parts, suggesting previous use as a warm season colony, and current use as a day and night roost. Additionally, the air flow and relatively extensive workings may provide conditions ideal for hibernating bats. Other wildlife sign observed included live crickets, bighorn sheep scat, mouse scat, and woodrat scat and middens. Historical cultural artifacts observed included cans, and a cap and post stull at the portal. Modern human disturbance included miscellaneous trash.
Bat Habitat: Good
Closure Recommendation:
15_03: Bat-compatible Closure, Any Time (BCAT)
15_04: Bat-compatible Closure, Any Time (BCAT)

Feature: AMLRNMG17SR04WS15_09
Alternate Feature ID: 9.2
Location: 32.82491519, -107.2448981
Date: July 12, 2023
Observations: This feature is a 10' long, low-backed prospect adit driven in friable country rock. The prospect is actively filling with sediment from weathering. No bat sign or other wildlife sign was observed. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Poor
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Feature: AMLRNMG17SR04WS15_10
Alternate Feature ID: F9.3, Rinc 0018
Location: 32.82478700, -107.24485600
Date: July 12, 2023
BCI Survey History: July 30, 2014- guano piles
Observations: This feature is a 59' long, low-backed and wide adit accessing an orebody between rock layers. One live Townsend's big eared bat was observed roosting in a 4' dome near the mine face. Other bat sign observed included several small piles of guano scatter below roost-stained pockets, as well as light guano scatter and insect parts, indicating use as a day and night roost. Other wildlife sign observed included live crickets, a live millipede, mouse scat, and woodrat scat and middens. Historical cultural artifacts observed included a wooden stull near the portal.
Bat Habitat: Moderate
Closure Recommendation: Bat-compatible Closure, Any Time (BCAT)

Feature: AMLRNMG17SR04WS15_11
Alternate Feature ID: 9.1
Location: 32.82513754, -107.2448892
Date: July 12, 2023
Observations: This feature is a 10' long, low-backed prospect adit driven in friable country rock. No bat sign or other wildlife sign was observed. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Poor
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Feature: AMLRNMG17SR04WS15_12
Alternate Feature ID: F54, Rinc 0002
Location: 32.82466600, -107.24669200
Date: July 12, 2023
BCI Survey History: July 30, 2014- Two live Townsend's big-eared bats, guano scatter, insect parts.
Observations: This feature is a 94' long, well driven linear adit. One live canyon bat and two live Townsend's big-eared bat were observed roosting. Other bat sign observed included guano piles, roost stain, heavy guano scatter from several species, and insect parts, indicating use as a warm season colony, day roost, and night roost. Other wildlife sign observed included a bird nest, bird guano, ungulate scat, javelina scat, and woodrat scat and middens. Historical and modern graffiti was observed, in the form of etchings in soft sediment.
Bat Habitat: Good
Closure Recommendation: Bat-compatible Closure, Cold Season (BCCS)

Feature: AMLRNMG17SR04WS15_20
Alternate Feature ID: 365_9.5, Rinc 0011
Location: 32.82497229, -107.24471419
Date: July 12, 2023
BCI Survey History: July 30, 2014- large guano pile.
Observations: This feature is a 55' long natural cave with an augmented portal. The feature drops 15' immediately inside the portal. One Townsend's big-eared bat was observed roosting. No other bat sign was observed. Other wildlife sign observed included live spiders and crickets. Historical cultural artifacts observed included a can and some sheet metal. Modern beverage containers were also observed.
Bat Habitat: Moderate
Closure Recommendation: Bat-compatible Closure, Any Time (BCAT)

Feature: AMLRNMG17SR04WS15_21 / AMLRNMG17SR04WS15_17 / AMLRNMG17SR04WS15_18
Alternate Feature ID: 365_9.4, Rinc 0012
Location: 365_9.4: 32.82489000, -107.24475100
AMLRNMG17SR04WS15_17: 32.824717, -107.244719
AMLRNMG17SR04WS15_18: 32.824783, -107.244717
Date: July 11, 2023
BCI Survey History: July 30, 2014- Two live Townsend's big-eared bats, insect parts.
Observations: This feature consists of an adit/ shaft complex with approximately 175' of workings. Portal 15_21 opens into a 100' long primary drift, with a 51' lateral drift immediately beyond the portal. Two shallow shafts about 10' deep connect with the primary drift between the portal and face. Three live Townsend's big-eared bats were observed flying. Other bat sign observed included light guano scatter and insect parts, indicating use as a day and night roost. Additionally, the airflow between the three openings may provide ideal hibernation conditions in the cold season. Other wildlife sign observed included live flies, mesocarnivore scat, mouse scat, and woodrat scat and middens. Historical cultural artifacts observed included a wooden stull, scrap metal and scrap lumber. Several modern cans were also observed.
Bat Habitat: Moderate
Closure Recommendation:
15_21: Bat-compatible Closure, Warm Season (BCWS)
15_17: Bat-compatible Closure, Warm Season (BCWS)
15_18: Bat-compatible Closure, Warm Season (BCWS)
Shoulder season closure is recommended to avoid disturbing bats in the warm and cold seasons.

Feature: AMLRNMG17SR04WS15_23
Alternate Feature ID: F3, Rinc 0003
Location: 32.82528800, -107.24410100
Date: July 12, 2023
BCI Survey History: July 29, 2014- One live Townsend's big-eared bat, guano scatter.
Observations: This feature is an adit with about 51' of total workings. Immediately beyond the portal is a 17' lateral drift. The primary drift splits around a stone pillar then rejoins before a wide chamber at the face. Bat sign observed included light guano scatter, indicating use as a day roost. Other wildlife sign observed included an active bird nest with chicks, rabbit scat, ungulate scat, and woodrat scat and middens. Historical cultural artifacts observed included cap and post timbers, and some wire.
Bat Habitat: Marginal
Closure Recommendation: Bat-compatible Closure, Any Time (BCAT)

Feature: AMLRNMG17SR04WS15_24a / AMLRNMG17SR04WS15_24b
Alternate Feature ID: F19.1
Location: 15_24a: 32.82390000, -107.24406200
15_24b: 32.823951, -107.2443990
Date: July 12, 2023
Observations: This feature consists of 2 adjacent adits connected by a window in the rib between the portals. Opening 15_24a is to the west and extends 47' with a 25' lateral stope near portal. Opening 15_24b is to the east, and meanders along its 62' length. Four live Townend's big-eared bats were observed roosting in a cluster, suggesting use as a warm season colony. Other bat sign observed included light guano scatter, insect parts, and roost stain, indicating use as a day roost, night roost. Additionally, the airflow between the three openings may provide ideal hibernation conditions in the cold season. Other wildlife sign observed included mesocarnivore scat, and bird guano. Historical cultural artifacts observed included wooden stulls, and a large wooden grizzly outside the portal. Modern beverage containers were also observed.
Bat Habitat: Good
Closure Recommendation:
15_24a: Bat-compatible Closure, Cold Season (BCCS)
15_24b:Bat-compatible Closure, Cold Season (BCCS)
Shoulder season closure is recommended to avoid disturbing bats in the warm and cold seasons.

Feature: AMLRNMG17SR04WS15_25
Alternate Feature ID: 365_19.3, Rinc 0008
Location: 32.82389977, -107.24395400
Date: July 11, 2023
BCI Survey History: July 29, 2014- Two live Townsend's big-eared bats.
Observations: This feature is a wide portal adit with about 270' of total workings. The adit forks around pillar for 66' before rejoining and forking into two 77' drifts. The primary drift has large lateral excavations along both ribs and several muck walls. A warm season colony of at least 8 Townsend's big eared bats was observed. Other bat sign observed included light guano scatter of multiple species and guano piles, insect parts, and roost staining, indicating use as a day and night roost. Additionally, the extensive workings may provide hibernation habitat in the cold season. Other wildlife sign observed included bighorn sheep scat, a Say's phoebe nest, and woodrat scat and middens. Historical cultural artifacts observed included a skip rail and hopper outside the portal, rail ties, cap and post timbers, and muck walls.
Bat Habitat: Excellent
Closure Recommendation: Bat-compatible Closure, Cold Season (BCCS)
Shoulder season closure is recommended to avoid disturbing bats in the warm and cold seasons.

Feature: AMLRNMG17SR04WS15_30
Alternate Feature ID: F17.1
Location: 32.82447551, -107.24491666
Date: July 11, 2023
Observations: This feature is a 37' long adit driven in solid limestone. One live Townsend's big-eared bat was observed roosting. Other bat sign observed included light guano scatter and insect parts, indicating use as a day and night roost. Other wildlife sign observed included a dead tarantula. Historical cultural artifacts observed included matches. Modern tinfoil and cigarette butts were also observed.
Bat Habitat: Moderate
Closure Recommendation: Bat-compatible Closure, Any Time (BCAT)

Feature: AMLRNMG17SR04WS16_07
Alternate Feature ID: F12
Location: 32.82792300, -107.25296000
Date: July 13, 2023
Observations: This feature is a 20' long, linear crawlspace adit ending in solid rock. No bat sign was observed. Other wildlife sign observed included a live black-tailed rattlesnake at the portal, a live lizard, live crickets, and woodrat scat. Historical cultural artifacts observed included a tobacco tin near the portal.
Bat Habitat: Poor
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Feature: AMLRNMG17SR04WS16_18
Alternate Feature ID: 387_2
Location: 32.83386900, -107.25504700
Date: July 12, 2023
Observations: This feature is a 30' long adit driven into stone cliffs above an arroyo. An 11' long drift forks off of the primary drift near the portal. One live canyon bat and one Townsend's big-eared bat were observed roosting. Other bat sign observed included light guano scatter, small piles of guano scatter below the roosting bats, and insect parts, indicating use as a day and night roost. Other wildlife sign observed included live spiders and crickets, bighorn sheep scat, and woodrat scat. Historical cultural artifacts observed included timbers.
Bat Habitat: Moderate
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Feature: AMLRNMG17SR04WS16_18a
Alternate Feature ID: 387_3
Location: 32.83386200, -107.25510700
Date: July 12, 2023
Observations: This feature is a 6' long prosect adit immediately adjacent to feature 387_2. Bat sign observed included very light guano scatter mixed with insect parts, indicating incidental use as a night roost. Other wildlife sign observed included bighorn sheep scat, and mouse scat, and woodrat scat and middens. No historical cultural artifacts or modern human disturbance were observed.
Bat Habitat: Marginal
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Feature: AMLRNMG17SR04WS22_01
Alternate Feature ID: 365_44.1, Rinc 0006
Location: 32.82181100, -107.24234100
Date: July 11, 2023
BCI Survey History: July 30, 2014- Guano scatter, guano piles, and insect parts.
Observations: This feature is a wide adit, 40' long adit with a 21' lateral drift off of the face. Bat sign observed included light guano scatter, a large guano pile and insect parts, indicating heavy use as a day and night roost. Other wildlife sign observed included bighorn sheep scat and woodrat scat. Historical cultural artifacts observed included soot on the ceiling, a refrigerator, a mattress spring, and scrap metal.
Bat Habitat: Good
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards. Leaving this feature open is recommended to allow continued use by large mammals, including ungulates.

Feature: AMLRNMG17SR04WS22_02a / AMLRNMG17SR04WS22_02b
Alternate Feature ID: 365_44.2 / 365_44.3, Rinc 0014
Location: S22_02a: 32.82177500, -107.24231800
22_02b: 32.8216952, -107.24238141
Date: July 11, 2023
BCI Survey History: July 30, 2014- no live bats or bat sign.
Observations: This feature is a 34' long tunnel. Opening 22_02a is immediately adjacent to feature AMLRNMG17SR04WS22_01. No bat sign was observed. Other wildlife sign observed included woodrat scat. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Marginal
Closure Recommendation:
22_02a: Leave As Is (LAI)
22_02b: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Feature: AMLRNMG17SR04WS22_03
Alternate Feature ID: 365_47
Location: 32.82133600, -107.24217000
Date: July 11, 2023
Observations: This feature is a 12' long prospect adit at the end of a 25' long trench. The trench walls are 15' high at the portal but shorten to 5' at the other end. Bat sign observed included traces of bat guano, indicating incidental use as a day roost. No other wildlife sign was observed. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Marginal
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Feature: AMLRNMG17SR04WS22_04
Alternate Feature ID: F39, Rinc 0007
Location: 32.82282274, -107.24271121
Date: July 11, 2023
BCI Survey History: July 30, 2014- no live bats or bat sign.
Observations: This feature is an 8' deep shaft driven in unconsolidated sediments. No bat sign or other wildlife sign was observed. Historical cultural artifacts observed included a large log in the shaft.
Bat Habitat: Poor
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Feature: AMLRNMG17SR04WS22_05a / AMLRNMG17SR04WS22_05b
Alternate Feature ID: 365_40.2a / 365_40.2b, F40.1, Rinc 0015
Location: 22_05a: 32.82264811, -107.2427238
22_05b: 32.82267784, -107.2427374
Date: July 11, 2023
BCI Survey History: July 30, 2014- light guano scatter.
Observations: This feature is an adit with 176' of total workings. The adit has 2 adjacent portals which connect immediately inside the feature. The primary drift forks around a large rock pillar for 30' before rejoining for another 50', then turning right and ending in fill from erosion. Bat sign observed included light guano scatter, as well small piles of guano scatter mixed with insect parts, indicating use as a day and night roost. Additionally, the airflow between the two openings may provide ideal hibernation conditions in the cold season. Other wildlife sign observed included javelina scat, and mesocarnivore scat. Historical cultural artifacts observed included a cap and post stull and a muckwall. One modern can was also observed.
Bat Habitat: Good
Closure Recommendation:
22_05a: Bat-compatible Closure, Any Time (BCAT)
22_05b: Bat-compatible Closure, Any Time (BCAT)
Shoulder season closure is recommended to avoid disturbing bats in the warm and cold seasons.

Feature: AMLRNMG17SR04WS22_05c
Alternate Feature ID: 365_40.1, F40.1
Location: 32.82267000, -107.24276200
Date: July 11, 2023
Observations: This feature is a 70' long well driven adit ending in solid rock. Bat sign observed included light guano scatter and insect parts along the length of the adit, indicating sustained day and night roost use. Other wildlife sign observed included live spiders and crickets, a dead tarantula, and woodrat scat and middens. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Good
Closure Recommendation: Bat-compatible Closure, Any Time (BCAT)

Feature: AMLRNMG17SR04WS22_10
Location: 32.82304382, -107.24376297
Date: July 11, 2023
Observations: This feature is a 23' adit ending in solid rock. Bat sign observed included light guano scatter and insect parts, indicating use as a day and night roost. Other wildlife sign observed included mouse scat, and woodrat scat and middens. No historical cultural artifacts were observed. Modern disturbances observed included a beer bottle and a potato chip bag.
Bat Habitat: Marginal
Closure Recommendation: Bat-compatible Closure, Any Time (BCAT)

Feature: AMLRNMG17SR04WS22_11 / AMLRNMG17SR04WS22_12
Alternate Feature ID: 365_23, Rinc 0020 / Rinc 0017
Location: 22_11: 32.82301900, -107.24373100
22_12: 32.823253, -107.243656
Date: July 11, 2023
BCI Survey History: July 30, 2014- guano pile, guano scatter.
Observations: This feature is a shaft adit complex. A partial survey was conducted to avoid disturbing a warm season colony of bats. The adit (22_11) forks immediately inside the portal. To the right the adit appears to end in collapse after about 30'. To the left, the drift curves around to the right and and eventually joins the shallow shaft (22_12). A warm season colony of Townsend's big eared bats was observed. The bats were in a cluster about 2' in diameter. Other bat sign observed included heavy guano scatter and guano piles, insect parts, indicating use as a day and night roost. Additionally, the airflow between the two openings may provide ideal hibernation conditions in the cold season.
Bat Habitat: Excellent
Closure Recommendation:
22_11: Bat-compatible Closure, Cold Season (BCCS)
22_12: Bat-compatible Closure, Cold Season (BCCS)
Shoulder season closure is recommended to avoid disturbing bats in the warm and cold seasons.

Feature: AMLRNMG17SR04WS22_13
Alternate Feature ID: 22_13, Rinc 0021
Location: 32.82316650, -107.24350037
Date: July 11, 2023
BCI Survey History: July 30, 2014- guano pile, guano scatter.
Observations: This feature is an adit at the bottom of a shallow declining trench. This feature used to connect to AMLRNMG17SR04WS22_11 / AMLRNMG17SR04WS22_12, according to surveys conducted by BCI in 2014. A small subsidence in the trench floor exposes collapsed subterranean workings. The adit is partially filled with sediment from erosion. The portal is constricted with sediment and the adit opens into a low-backed elliptical room 27' by 22'. Bat sign observed included trace amounts of guano, suggesting very light use. Other bat sign may have been obscured by sediment deposition; the roost function of this feature is thus undetermined. Other wildlife sign observed included a live scorpion, and mouse scat. One historical wooden stull was observed.
Bat Habitat: Marginal
Closure Recommendation: Destructive Closure, Warm Season (DCWS)
Follow exclusion protocols in BCI's "Managing Abandoned Mines for Bats." See Appendix 4

Feature: AMLRNMG17SR04WS22_15
Alternate Feature ID: 365_31
Location: 32.82252375, -107.24347176
Date: July 11, 2023
Observations: This feature is a 4' deep prospect pit. No bat sign or other wildlife sign was observed. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Poor
Closure Recommendation: Leave As Is (LAI)
This feature presents no obvious structural concerns or internal physical hazards.

Feature: AMLRNMG17SR04WS22_16
Alternate Feature ID: 365_43
Location: 32.82233500, -107.24241000
Date: July 11, 2023
Observations: This feature is a 3' deep prospect adit at the end of a 10' deep, 15' long trench. No bat sign or other wildlife sign was observed. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Poor
Closure Recommendation: Leave As Is (LAI)
This feature presents no obvious structural concerns or internal physical hazards.

Feature: 371_1
Alternate Feature ID: F16.1
Location: 32.82486401, -107.2450877
Date: July 12, 2023
Observations: This feature is a 6' long, low-backed prospect adit. No bat sign or other wildlife sign was observed. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Poor
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Feature: 369_9
Alternate Feature ID: F9
Location: 32.82764800, -107.24313300
Date: July 13, 2023
Observations: This feature is a 14' long prospect adit driven in solid limestone. The adit has a skylight in the back just beyond the portal. No bat sign was observed. Other wildlife sign observed included live crickets, mouse scat, and woodrat scat and middens. No historical cultural artifacts or modern disturbances were observed.
Bat Habitat: Poor
Closure Recommendation: Leave As Is (LAI)
This feature is remotely located and presents no obvious structural concerns or internal physical hazards.

Contact

For questions on the content of this report, or for more information on bats and subterranean habitat, please contact Bat Conservation International's Subterranean Team:

Shawn Thomas
Subterranean Team Lead
sthomas@batcon.org

Alexi Kimiatek
Subterranean Specialist
akimiatek@batcon.org

Jackson Bain
Assistant Subterranean Team Lead
jbain@batcon.org

Kathleen Slocum
Subterranean Specialist
kslocum@batcon.org

Dillon Metcalfe
Subterranean Safety Lead
dmetcalfe@batcon.org

Josh Hydeman
Subterranean Specialist
jhydeman@batcon.org

BCI's Habitat Protection & Restoration Program (HP&R) works to identify, protect, restore, and conserve the above and below ground habitats that are vital to bat populations around the world. To learn more about our capabilities and partnership opportunities, please contact:

Jason Corbett
Director, HP&R
jcorbett@batcon.org

To learn more about BCI's mission to end bat extinctions worldwide, and how you can help, please visit our website:

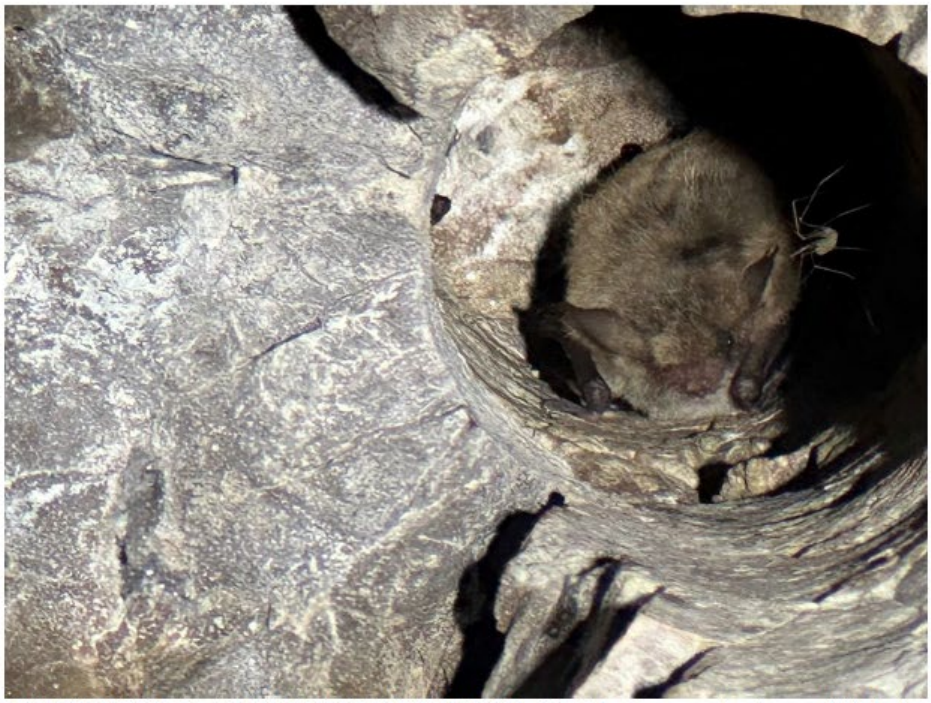
www.batcon.org

Appendix 1: Selected Photos

The full set of photos from all features was provided in digital form with this report.

AMLRNMG17SR04WS15_12: Canyon bat day-roosting in a crack.
BCI Photo by Kathleen Slocum

AMLRNMG17SR04WS15_03 / AMLRNMG17SR04WS15_04: View looking up at opening 15_04 from the bottom.
BCI Photo by Alexi Kimiatek



AMLRNMG17SR04WS15_03 / AMLRNMG17SR04WS15_04: *Myotis spp.* sharing a drill hole with a spider.
BCI Photo by Alexi Kimiatek

AMLRNMG17SR04WS22_01: Vintage refrigerator laying inside the adit.
BCI Photo by Harrison Tamayo

AMLRNMG17SR04WS15_12: Townsend's big-eared bat roosting.
BCI Photo by Kathleen Slocum

AMLRNMG17SR04WS15_03 / AMLRNMG17SR04WS15_04: View looking out towards opening 15_03.
BCI Photo by Alexi Kimiatek

AMLRNMG17SR04WS15_03 / AMLRNMG17SR04WS15_04: *Myotis spp.* roosting in a drill hole.
BCI Photo by Alexi Kimiatek

Appendix 2: Bat Habitat Assessments

Bat habitat is assessed for each feature surveyed and describes the value of that feature for bat use. Determining bat habitat is the primary objective of surveys conducted by the BCI Subterranean Program. Survey of a feature results in seven possible bat habitat classifications: excellent, good, moderate, marginal, poor, no habitat, or unknown. Each of these classifications are described below.

Excellent Bat Habitat

Description

Excellent bat habitat is very rare amongst features surveyed. For a feature to be assessed as having excellent habitat, significant bat use, usually by colonies, must be documented. Typically, this occurs when a large single species roost (>20 bats) is identified using the feature for warm season aggregation, usually in conjunction with substantial guano piles. Bats present in lower numbers but representing multi-species use of three or more species also warrants an assessment of excellent habitat. Bats need not be present to identify excellent habitat, as obvious bat sign such as large guano piles, heavily scattered guano along flyways, and roost staining on ceilings are indicators of significant bat use. Major winter use by bats cannot be confirmed during warm season surveys, though features that exhibit cold temperatures, airflow, and a high diversity of microclimates and roosting habitat can be identified as sites with good potential for serving as hibernacula. Features offering excellent bat habitat usually exhibit striking internal complexity, with extensive workings and possibly multiple levels. Due to the extensiveness of underground workings, these features nearly always offer high quality rock habitat. Exceptions, however, include small features used as maternity sites. Feature stability should be good, with little concern for future collapse that could result in loss of the roost.

Closure Recommendation

Features with excellent bat habitat should nearly always be recommended for protection (exceptions include imminent collapse or other major safety hazards). To minimize disturbance while bats are using the feature for a critical life cycle phase, bat-friendly closures should occur during the opposite season of primary use. For example, closure of a feature that hosts a maternity colony should occur during the cold season, and closure of a feature that serves as a hibernaculum should occur during the warm season. For features with multiple entrances, closures should protect all openings that are either used for bat access or necessary to preserve airflow patterns.

Good Bat Habitat

Description
Good bat habitat is represented by features that contain clear signs of persistent bat use but do not exhibit the striking evidence of significant use by bat colonies. These features often support use by one or two species of bats that use the site as a day roost or night roost. Bat sign such as guano, either scattered or in small piles, and insect parts are common in these features. The internal workings usually exhibit moderate complexity, with rock habitat quality that meets the specific needs of day or night roosting bats, such as domes, drill holes, and/or a heavily featured back. Feature stability should be good, with little concern for future collapse that could result in loss of the roost.

Closure Recommendation
Features with good bat habitat should nearly always be recommended for protection (exceptions include imminent collapse or other major safety hazards). Bat-friendly closures can usually occur at any time of the year, as bat use of these sites is persistent but dispersed and does not represent significant use for warm season maternity colony aggregation or cold season hibernation. For features with multiple entrances, closures should protect all openings that are either used for bat access or necessary to preserve airflow patterns.

Moderate Bat Habitat

Description
Moderate bat habitat generally refers to features that exhibit some signs of minor bat use or have potential for bat use due to the level of complexity and/or stable microclimate offered within. Moderate habitat features are often occupied by one or two bats, possibly on a seasonal nature, but will not display any signs of significant bat use. Guano, if present, will be lightly scattered, or in no more than a few very small piles representative of solitary bats of a single species. Insect parts may also be present, indicating night roosting. Bat sign may also be completely absent from these features at the time of survey, either due to extremely limited bat use, suspected winter use that cannot be detected during a warm season survey, or feature conditions such as flooding that may cover or destroy evidence of bat use. Complexity of the feature will range from simple, if combined with other signs of bat use, to moderately complex. Feature stability should be relatively stable, and rock habitat quality should offer some level of suitable roosting surface.

Closure Recommendation
Features with moderate bat habitat fall into the "grey area" where bat use is not necessarily prominent enough to immediately warrant a protective closure, yet the possibility for increased future bat use exists. Generally, a bat-friendly closure should be recommended for features with moderate habitat in order to maintain a conservative approach to habitat protection. Furthermore, the context of the feature relative to the surrounding landscape may elevate its importance if few other suitable habitat options are available. Scenarios that may call for destructive closure recommendations on features that meet the criteria for moderate habitat include unstable internal conditions that suggest future collapse/destruction of the feature or areas in which the feature is eclipsed by numerous other features with superior habitat. If a destructive closure is recommended, it must be accompanied by bat exclusion prior to closure.

Marginal Bat Habitat

Description
Features designated marginal bat habitat generally lack bats and bat sign. Less commonly, these features may exhibit signs of very minor, infrequent use. A single bat may be present, but there may be no accompanying signs that would allow detection if the bat was absent. Guano and insect parts, if present, will be very sparsely scattered and require diligence for detection. Complexity of the feature will always be simple, with no substantial workings; however, these features are usually extensive enough to include a dark zone, and the entire feature is not visible from the portal or collar. Marginal features are often short, simple adits or blind and bald shafts. Feature stability can be stable, but often poor rock conditions contribute to marginal habitat. Rock habitat quality will generally be poor to fair, with less than ideal roosting surfaces.

Closure Recommendation
Features with marginal bat habitat are almost invariably recommended for destructive closure due to these features lacking bat sign and/or containing unstable conditions that threaten collapse. Given the possibility for bats to be present in these features, exclusion is required prior to closures occurring in the warm season when bats are active. In rare circumstances, a protective closure may be warranted to allow for the possibility of future bat use, especially if the feature represents one of the only subterranean habitat options in the area.

Poor Bat Habitat

Description
Features classified as poor bat habitat tend to be very small prospects that exhibit no signs of bat use. While these features offer some level of subterranean habitat, the workings are so limited as to offer no true dark zone and no area of stable subterranean microclimate. Usually, the entire feature will be visible from the portal or collar. These features are so small that structural stability is often quite good, but they may also be in a state of collapse. Rock habitat quality can range the entire spectrum, but this assessment is largely irrelevant in such small features that offer little physical area from which bats can select roosting spots that have a stable microclimate.

Closure Recommendation
Features with poor bat habitat are recommended for destructive closure. Due to the lack of bat sign or potential for future bat use, a "DCAT" recommendation is usually warranted on these features.

No Bat Habitat

Description
Assessing a feature as containing no bat habitat means no subterranean habitat is available. No underground workings are present at all, and the feature would present no option for bats to roost in subterranean environments. This scenario occurs for features that are totally collapsed, prospect scrapes, entirely and permanently flooded, or some other similar circumstance. This assessment is also appropriate for portals that are almost entirely sloughed closed and/or overgrown with vegetation such that bats would be unable to access the workings.

Closure Recommendation
With no subterranean component and thus no bat habitat, a "DCAT" recommendation is always warranted. For some features, though, especially those that contain no inherent hazard, a "Leave As Is" recommendation may be most appropriate. This recommendation is most applicable to prospect scrapes and pits that contain no headwall and may be largely overgrown.

Unknown Bat Habitat

Description
If an internal survey cannot be conducted, and underground workings are likely to exist based on observations from the surface, then bat habitat cannot be assessed. This usually occurs when the feature is not accessible due to safety concerns (e.g., wildlife hazards, rock or timber hazards) at the portal or collar. Often, looking into the feature from outside confirms that underground workings are present, though inaccessible. An unknown bat habitat assessment may also be appropriate for some partial internal surveys, when a survey is terminated underground due to safety concerns. In these instances, though, if extensive workings and/or bats and bat sign are observed prior to terminating the survey, then a higher bat habitat classification and feature protection are warranted.

Closure Recommendation
Closures of features with unknown bat habitat should follow conservative recommendations to minimize the possibility of destroying potentially important bat roosts. When possible, bat-friendly closures should be recommended for these features. In cases where destructive closures are more appropriate (e.g., collapse of feature is imminent), exclusion is required prior to closures occurring in the warm season when bats are active.

Appendix 3: Closure Recommendations

Closure recommendations are assigned to each opening of a distinct feature surveyed and prescribe the appropriate remediation strategy for the site. Bat use, other wildlife use, feature stability, and overall nature of the workings are considered when determining the closure recommendations. Survey of a feature usually results in recommendation of a bat-compatible closure or destructive closure for each opening, with a seasonal component to advise suitable timing of the closure. In some cases, openings may warrant other wildlife-friendly closures or recommendation of no action (leave as is). Each of these classifications are described below.

Bat-compatible Closures

Bat-compatible closures are recommended for openings to features that contain bats / bat sign and/or exhibit characteristics that indicate high potential for bat use. These features warrant protective closures to maintain the bat habitat within and allow for continued bat use. Bat-compatible closures include a variety of methods that fall on a spectrum of high to low compatibility. No closure method is perfect for all bat species, but generally, gates designed to comply with bat-compatible specifications are preferred to 1) minimize the potential of disrupting current use patterns and 2) promote long-term access for bats and other wildlife. For openings that are unstable or present access challenges, construction of a standard bat gate may not be possible. In these instances, use of alternative methods such as culverts or cable nets may be the most feasible method; while these closure types are not ideal for bats and other wildlife, they may still facilitate moderate levels of access and habitat use and therefore present a suitable alternative to total habitat loss.

Three seasonal designations are used to recommend appropriate timing of bat-compatible closures:

- BCAT (Bat-compatible Closure, Any Time): "Any time" bat closures are recommended for openings to features in which overall bat use is relatively minor or not confined to any single season.

- BCCS (Bat-compatible Closure, Cold Season): Cold season bat closures are recommended for openings to features that display significant warm season use, typically by a maternity colony of bats. Closure is recommended to occur during the cold season to avoid disturbance of bat colonies, which could potentially lead to abandonment of the site.

- BCWS (Bat-compatible Closure, Warm Season): Warm season bat closures are recommended for openings to features that are documented as hibernacula or exhibit characteristics that indicate high potential for significant cold season use by hibernating bats. Closure is recommended to occur during the warm season to avoid disturbance of hibernating bats, which could potentially lead to bats arousing and burning critical energy reserves.

Airflow Closures

Airflow closures may be recommended for secondary openings to features with multiple openings that access habitat warranting protection. Independent, secondary openings often contribute to the microclimate and habitat suitability of the underground workings via air exchange but may not serve as important access points for wildlife. In these cases, it is appropriate to close these secondary openings in a way to maintain air exchange without preserving access to wildlife.

Other Wildlife-compatible Closures

Protection may also be recommended for openings to features that display significant use by wildlife other than, or in addition to, bats. These closure recommendations are relatively rare, and closure methods are dependent on type of wildlife use. Protection of features may be warranted for use by wildlife including, but not limited to, birds (e.g., owls, vultures), mammals (e.g., cats, foxes, porcupines, ringtails), and reptiles/amphibians (e.g., salamanders).

Closure Modifications

Closure modifications are recommended for existing closures such as bat gates or backfills that do not adequately protect or maintain habitat provided by the feature. In these cases, a modification to the existing closure is recommended to improve wildlife access to habitat assessed at the time of survey. Closure modifications are recommended to provide access to previously inaccessible habitat or to facilitate increased use of existing habitat. Seasonality is also considered in closure modification recommendations to advise suitable timing of the modification.

Destructive Closures

Destructive closures are recommended for openings to features that either offer no bat habitat, contain no evidence of bat use, or exhibit only minor, insignificant bat use. In some cases, destructive closures may also be recommended for secondary openings to features that are protected through bat-compatible closure of primary openings used for wildlife access. Two destructive closure designations are used to recommend appropriate measures based on possible bat use:

- DCAT (Destructive Closure, Any Time): These openings access features that exhibit no signs of bat use or potential for bats to be present and can be destructively closed without conducting exclusion, during any season. This recommendation may also be applied to secondary openings to features protected for wildlife habitat, provided that these openings do not serve any critical function in maintaining wildlife access or suitable habitat conditions.

- DCWS (Destructive Closure, Warm Season): These openings access features that either exhibit signs of minor, insignificant bat use or have the potential for bats to be present during destructive closure. In some cases, other wildlife such as birds may be present, and these animals should also be excluded; alternatively, closure with bat exclusion may

be timed for after the nesting season when birds are no longer using the feature. Using appropriate exclusion techniques on the features prior to closure is critical. Exclusion needs to be done during the warm season when bats are active and will be able to escape. See Appendix 4 and refer to "Managing Abandoned Mines for Bats," published by Bat Conservation International, for guidance on exclusion techniques.

No Action

"Leave as is" treatments are recommended for features that present no inherent safety concerns. A feature with this recommendation is generally either a prospect scrape/trench with no subterranean component, or the portal has completely collapsed, making the feature inaccessible.

Appendix 4: Exclusion Guidance

Exclusion Guidance as Excerpted from BCI's "Managing Abandoned Mines for Bats"

Timing of Exclusions

The exact timing of exclusions and site closures is best determined locally, given the variability in types of use by different species. As a general rule, bats must be active for exclusions to be effective, so all exclusions should be conducted outside of hibernation season. In general:

- The best time to implement exclusions and portal closures is during late summer or early fall, after cessation of maternity activities and before the onset of hibernation.

- Early-fall closures will best ensure a window for bats to find alternate hibernacula and will give females a full spring season to locate alternate maternity sites.

Exclusions for Destructive Closures

Regardless of the reason for a destructive closure of known or potential bat roosts, steps must be taken to ensure significant bat colonies are not destroyed as a direct result of closure activities. Managers should include adequate exclusions as a routine part of mine reclamation programs to minimize the risk of entombing bats in closed workings. Further, closures should be conducted immediately following exclusion to limit the chance of bats becoming reestablished in the mine. In general, these two guidelines can help determine whether exclusions should be conducted and how intense the exclusion effort should be.

Exclusions Not Required: Exclusions are generally not required if a mine does not offer potential bat habitat, as mutually agreed upon by all partners involved in the mine closure project.

Standard Exclusions: In general, exclusions are recommended at all mines that represent habitat for bats. Given the ephemeral and episodic use of some roosts, it is prudent to err on the side of caution and conduct standard exclusions efforts, especially if significant time has elapsed since biological assessments were conducted.

The use of one-inch mesh material (e.g., chicken wire, polypropylene or similar material) is most often used to exclude bats from a mine. Lighter-weight material may be used for remote mines that require physically transporting the material over long distances or rough terrain. Although this material is very effective for excluding bats, it may also entangle bats and other wildlife. Managers may need to develop a plan to periodically check exclusion materials at sites with large bat colonies or high use by other wildlife to prevent loss of entangled bats, amphibians, reptiles or birds.

Exclusion materials should be maintained for at least three nights prior to portal closure at mines that provide habitat and where little or no bat use has been detected. Simultaneously covering all external openings with exclusion materials and leaving it in place for at least one week is an effective method for excluding most bat species from roosts. Difficulties in

navigating through exclusion materials should cause bats to seek alternate roosts rather than continuing to access the mine through the wire.

For most species, simply spreading exclusion materials across portals will be sufficient to allow bats to exit a mine while effectively discouraging their return. However, not all bats in all roosts across all landscapes will respond in an identical manner. As a general rule, smaller colonies in areas where roosts are abundant tend to quickly abandon roosts after exclusion materials are installed. For example, exclusion materials left in place for three to five nights will usually cause small colonies of Townsend's big-eared bat roosting in small mines in Nevada to abandon the roosts.

APPENDIX C. PALEONTOLOGY ASSESSMENT

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT—LAS CRUCES DISTRICT

Paleontology Assessment

General Information

Paleo Case #:	BLM-NM-L000-2023-PALEO-029	**NEPA Number:**	-
Project Name:	**Red Hill Mine Safeguarding Project**		
Project Lead:	OSMRE and BLM	**Applicant:**	OSMRE and BLM
Description:	To safeguard approximately 35 Priority 1(P1) hazardous abandoned mine openings and features at Red Hill throughout 796 acres in the Caballo Mountains and Rincon Mining Districts. Safeguarding activities for mine closures would utilize a variety of methods, including manually or mechanically filling mine openings with surrounding waste material or polyurethane foam, and building structural barriers that restrict human ingress, such as locking gates, cupolas, high-tensile steel mesh coverings, gated culverts, or other wildlife-compatible closures. Mining features filled with existing waste rock or polyurethane foam would remain visible as shallow depressions, and residual waste rock material would be recontoured in place. Existing access routes would be used to the greatest extent possible to access the mine features proposed for closure.		
Paleontology Analyst:	Colin Dunn, LCDO Paleontologist	**Assessment Date:**	5/18/2023

PLSS:

- Sections 9, 15, 16, 21, and 22, T17S R04W, NMPM

Potential Fossil Yield Classification:

[1:24,000]: Seager and Mack (1991) *Geologic descriptions from cited source

- PFYC 2 (Low)

[Qvy] Younger Valley-fill alluvium—*Holocene*—Arroyo, Fan, and Terrace deposits (from boulder gravel to clay-silt) associated with surfaces graded to or within a few feet of the modern Rio Grande floodplain; unit intertongues with and overlaps Qvyf; as much as 12 m (40ft) thick.

[Qpg] Palomas Formation, upper piedmont-slope facies—*Middle Pleistocene*—Boulder to pebble conglomerate and gravel with zones of well-developed (stage IV) soil carbonate; as much as 0.8 m (2.5 ft) or more thick near mountain fronts, thinning basinward.

[Sf] Fusselman Dolomite—*Silurian*—Basal unit of tan, sandy dolomite approximately 5 m (16.5 ft) thick overlain by dark brownish-gray, cherty dolomite approximately 21 m (69 ft) thick. Dolomitization has destroyed many of the original sedimentary features of the Fusselman, inhibiting interpretation of depositional environment. The coral and brachiopod fauna, observed elsewhere in southern New Mexico, suggests a shallow-marine environment

- PFYC 3 (Moderate)

[IP] "Magdalena Group"—*Pennsylvanian*—Total thickness approximately 277 m (909 ft).

Bar-B Formation: upper unit, consists of soft, gray to purple, argillaceous limestone and calcareous shale with interbedded fossiliferous limestone ledges and chert-pebble conglomerate and is approximately 62 m (204 ft) thick. A few beds of micrite contain whole brachiopod and gastropod shells, as well as large (1.5 cm wide, 15 cm long) horizontal burrows (Fig. 8), but the majority of beds are unfossiliferous.

Nakaye Formation: medial unit, medium- to thick-bedded, fossiliferous, gray limestone, which is often cherty, and interbedded shale, approximately 151 m (496 ft) thick. The limestones are primarily fossiliferous packstones, although wackestones are also present. The diverse fauna includes brachiopods, echinoderm columnals, solitary and colonial corals, fenestrate and branching bryozoa, fusulinids, and gastropods. Brachipods and corals are commonly silicified.

Red House Formation: Lower unit, gray to green shale, thin- to medium-bedded limestone, and tan quartzite approximately 64 m (210 ft) thick. Fossils include brachiopods, echinoderm columnals, bryozoa, and fusulinids.

[Om] Montoya Formation—*Ordovician*—Total thickness is approximately 116 m (381 ft).

Cutter Member: upper unit is 43 m (141 ft) of light- to medium-gray, medium-bedded dolomite. Also present are thin (<2cm) laminae with whitish intraclasts. The laminae are locally disrupted by burrows, and the uppermost beds display light-gray and medium-gray mottling that resembles bioturbation.

Aleman Member: 46 m (151 ft) of cherty, light- to dark-gray, fine- to medium-grained dolomite. The abrupt disappearance of chert nodules marks the contact between the Aleman and Cutter Members.

Upham Member: 21 m (69 ft) thick, massive dark dray, coarse-grained dolomite. A few small-scale cross-beds are present, as are scattered fossil fragments and burrows. The upper part of the member is composed of gray, thick-bedded, locally heavily bioturbated, coarse-grained dolomite. There are a few silicified fragments of brachiopods, echinoderm columnals, and solitary corals, as well as a few brown chert nodules.

Cable Canyon Member: Basal unit, tan to brown, coarse-grained approximately 6 m (20 ft) thick. Bioturbation is common, and a few thin (10–20cm) trough cross-beds are present.

[Oe] El Paso Formation—*Early Ordovician*—Total thickness is ~ 152 m (499 ft).

McKelligon Member: upper unit, 54 m (178 ft) thick and is largely light-colored, fine-grained dolomite.

Jose Member: medial unit, approximately 7 m (23 ft) thick, is dark-gray, burrowed and mottled, oolitic limestone. Seager and Mack (2003) states that the Jose also contains bioturbated, fossiliferous packstone.

Hitt Canyon Member: basal unit, consists of approximately 91 m (299 ft) of medium-bedded, burrowed, mottled limestone, sandy at base. Fossils recognizable in hand specimen include trilobites and echinoderm columnals. Oncolites are also present. Seager and Mack (2003) state: The most common rock types are fossiliferous wackestone and packstone that contain whole and broken fossils of trilobites and echinoderms, as well as gastropods, cephalopod siphuncles, sponges, and *Nuia*.

- PFYC 4 (High)

  [QTpf] Palomas Formation, fluvial and associated facies—*Late Pliocene to Middle Pleistocene*—Light-gray, yellow, and pink to tan sand, sandstone, gravel, conglomerate, conglomeratic sandstone, and mudstone representing fluvial-channel and overbank deposits of the ancestral Rio Grande as well as adjacent alluvial-flat and eolian environments; tongues of piedmont-slope conglomerate (QTpc) are imbedded with the unit; as much as 100 m (329 ft) thick.

  [QTpu] Qpg and QTpc, undifferentiated—*Late Pliocene to Middle Pleistocene*—Locally contains tongues of QTpf

  [QTpc] Palomas Formation, piedmont-slope fanglomerate—*Late Pliocene to Middle Pleistocene*—Well- to moderately-cemented, tan to red or pink boulder to cobble-pebble conglomerate; derived largely from Caballo Mountain fault blacks and Derry Hills; intertongues with QTpf and QTp; at least 100 m (329 ft) thick and perhaps thicker in the subsurface.

  [Pa] Abo Formation—*early Permian*—Reddish-brown to light-brown sandstone interbedded with grayish-red shale, claystone, and siltstone; chert- and limestone-pebble conglomerate, coarse-grained arkosic sandstone, and fresh-water limestone are present at the base; approximately 141 m (463 ft) thick. Contains numerous vertebrate and invertebrate tracks and plants.

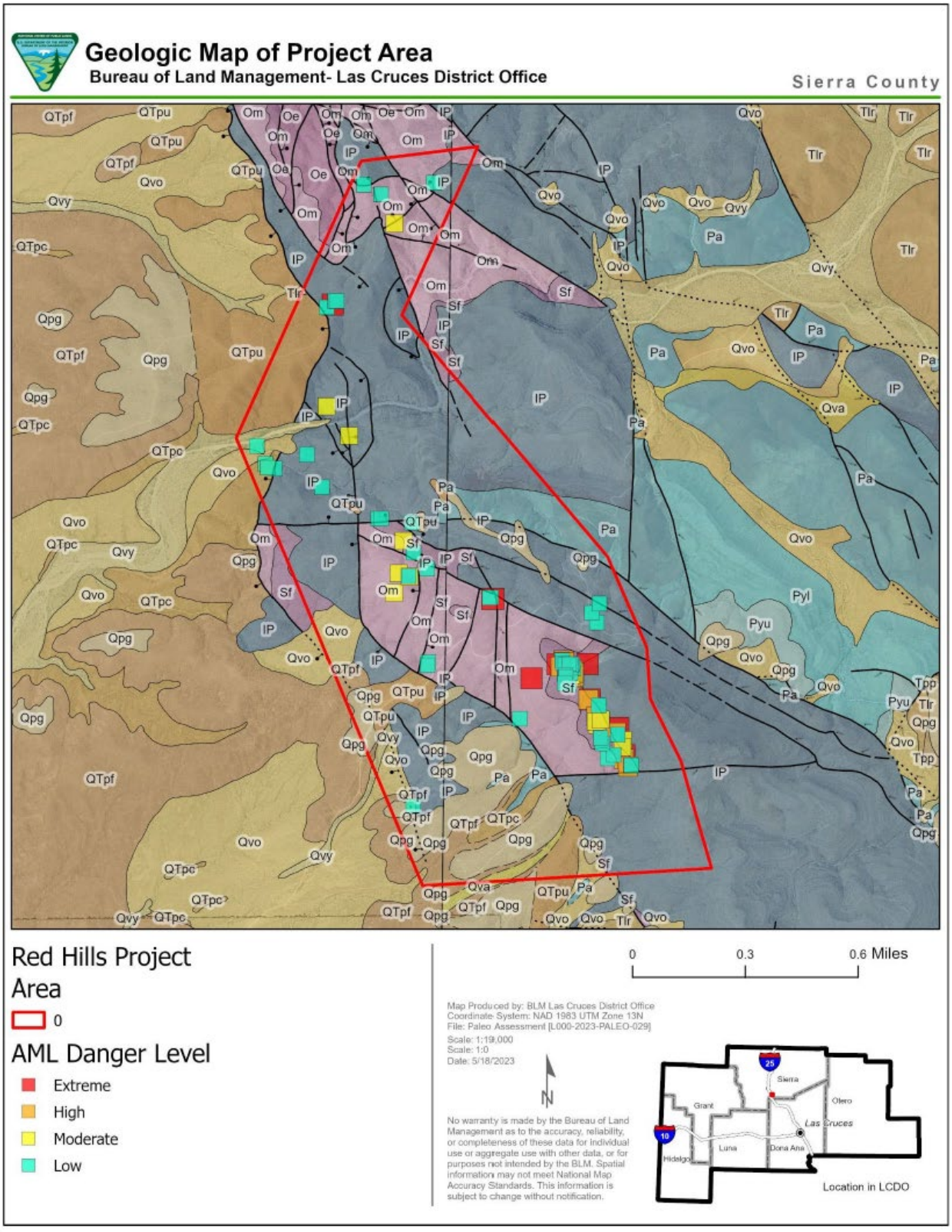
- PFYC U (Unknown)

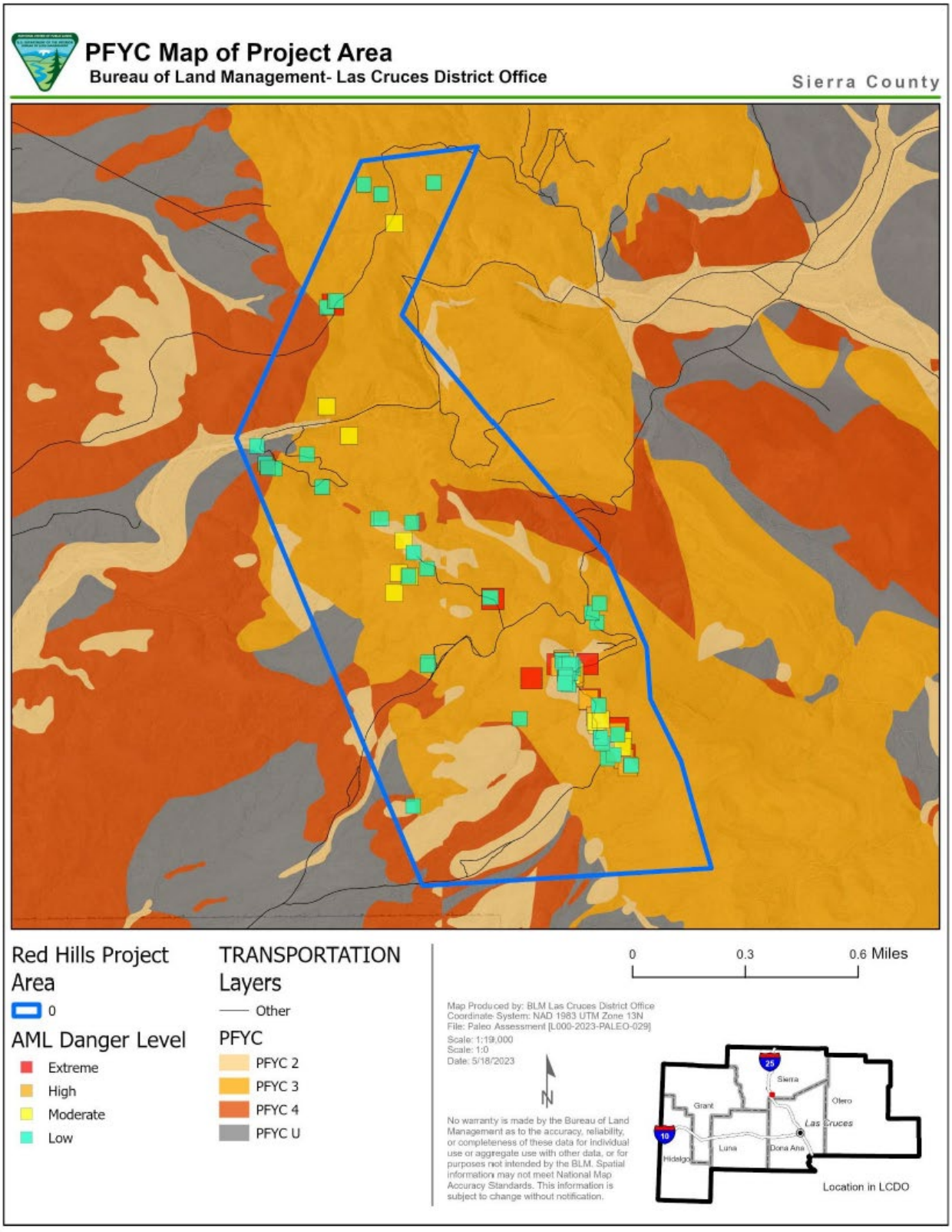
  [Qva] Qvo and Qvy, undifferentiated—*Late Pleistocene to Holocene*—See individual units for descriptions.

  [Qvo] Older valley-fill alluvium—*Late Pleistocene*—Arroyo, fan, and terrace deposits and erosion-surface veneers (from boulder gravel to silt-clay) associated with graded surfaces forms during at least three major episodes of valley entrenchment and partial backfilling; pedogenic lime cements uppermost parts of the deposits, especially the older (higher) ones; as much as 30m (99 ft) thick.

  [Tlr] Love Ranch Formation—*Eocene*—Reddish-brown to reddish-gray cobble-boulder conglomerate, conglomeratic sandstone, and arkosic sandstone, siltstone, and mudstone; derived largely from Precambrian granite and Paleozoic carbonates and sandstone; only 30 m (99 ft) are exposed in Garfield quadrangle, but the formation may be more than 150 m (493 ft) thick in adjacent parts of the Caballo Mountains.

  Fossils have been reported from the Love Ranch, but most of the formation has not been targeted for survey and the literature does not indicate the presence or absence of fossil resources.


Geologic Map of Project Area
Bureau of Land Management- Las Cruces District Office
Sierra County
Red Hills Project Area
0
AML Danger Level
Extreme
High
Moderate
Low
0
0.3
0.6 Miles
Map Produced by: BLM Las Cruces District Office
Coordinate System: NAD 1983 UTM Zone 13N
File: Paleo Assessment [L000-2023-PALEO-029]
Scale: 1:19,000
Scale: 1:0
Date: 5/18/2023
N
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.
Sierra
Grant
Otero
Las Cruces
Luna
Dona Ana
Hidalgo
Location in LCDO



5

Form Version 4.3, updated 31Aug2022

Paleo Analysis:

The extreme, high, and moderate hazards in the project area fall within PFYC 2 or 3, which contain mostly common marine invertebrate fossils. Most of the low hazard areas also fall in PFYC 2 and 3 units. A couple low hazard points are within the PFYC 4 QTpu, which can contain fluvial Palomas Formation. Portions of the roads that access the project area also cross QTpu, but a caliche layer is expected near the surface. Two localities are recorded in the Abo Fm (PFYC 4), but no hazards are located in this formation. A route does pass through the Abo Formation, but so long as new disturbance (e.g., road maintenance) doesn't occur there, no further impacts to paleontological resources would be expected to occur. Overall, the standard design features (i.e., the Unanticipated Paleontological Resource Discovery) should be sufficient to protect the resource in the project area.

Design Features / Stipulations / Requirements:

1) **Unanticipated Paleontological Resource Discovery:** The operator shall immediately notify the BLM Authorized Officer of any paleontological resources discovered as a result of operations under this authorization. The operator shall suspend all activities in the vicinity of such discovery until notified to proceed by the Authorized Officer and shall protect the discovery from damage or looting. The operator may not be required to suspend all operations if activities can be adjusted to avoid further impacts to a discovered locality or be continued elsewhere. The Authorized Officer will evaluate, or will have evaluated, such discoveries as soon as possible, but not later than 10 working days after being notified. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the Authorized Officer after consulting with the operator. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (1) following the Authorized Officer's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (2) following the Authorized Officer's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

Colin Dunn — Date
BLM LCDO Paleontologist

References:

Seagar, W.R. and Mack, G.H., 1991, Geologic map of Garfield quadrangle, Sierra and Dona Ana Counties, New Mexico, New Mexico Bureau of Mines and Mineral Resources, Bulletin 128, 1:24,000

Seager, W.R. and Mack, G.H., 1998, Geology of McLeod Tank quadrangle, Sierra and Dona Ana Counties, New Mexico, New Mexico Bureau of Mines and Mineral Resources, Geologic Map 77, 1:24,000

Seager, W.R. and Mack, G.H., 2003, Geology of Caballo Mountains, New Mexico, New Mexico Bureau of Mines and Mineral Resources, Memoir 49, 134 p.

APPENDIX D. CONSULTATION LETTERS

SHPO Consultation

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd Leahy, JD, PhD
Deputy Secretary

Albert Chang, Director
Mining and Minerals Division

August 14, 2023

HPD Log 120391
Received 8/14/2023

Mr. Jeff Pappas Ph. D.,
State Historic Preservation Officer and Director
Historic Preservation Division
407 Galisteo Street, Suite 236
Bataan Memorial Bldg.
Santa Fe, NM 87501
Jeff.pappas@dca.nm.gov

RE: *Determination of Eligibility and Project Effects for Safeguarding Abandoned Mine Lands within the Red Hill Safeguard Project*

Dr. Pappas,

The Abandoned Mine Land (AML) Program is preparing abandoned mine reclamation and safeguarding work at Red Hill Mine in the Caballo Mountains Mining District. The proposed project area is located in Sierra County and is approximately 3 miles northwest of Derry, New Mexico (USGS Garfield and McLeod Tank 7.5' quadrangles, in Township 17 S, Range 4 W). The proposed Area of Potential Effect (APE) includes approximately 796 acres of land administered by the United States Department of the Interior-Bureau of Land Management-Socorro Field Office (BLM) and New Mexico State Land Office (SLO). As a federally funded program this proposed AML undertaking is subject to Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. 300101 et seq.) and its implementing regulations (36 CFR Part 800: Protection of Historic Properties, as revised August 2004).

The Project area includes the Caballo Mountains Mining District where the earliest recorded mineral production dates to 1918 but was primarily mined for manganese and fluorspar between 1940 through the 1980s. The proposed closure/safeguarding project is designed to protect the public from dangers associated with historical hard rock mining features such as adits, shafts, subsidence features, and other mine openings. The APE for these activities is encompassed within a ~796-acre block (Attachment 1) that consists of public lands managed by the United State Department of Intiorior (USDI) Bereau of Land Management, Las Cruces District Office

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3400 • Fax (505) 476-3402 • www.NMMines.com

(BLM-LCDO) (~470-acres) and State Trust Land (STL) managed by the New Mexico State Land Office (SLO) (~326-acres).

The AML is requesting SHPO review AML's identification and treatment of historic properties as documented in the above referenced report, and associated LA and HCPI Forms. Table 1 provides a summary of AML's National Register of Historic Places (NRHP) eligibility determinations based on our review of the accompanying cultural resources report and site forms. AML has assessed that the proposed undertaking will result in ***no adverse effect to historic properties*** or the mining landscape. The AML is seeking concurrence from the SHPO on our site eligibility determinations and effect assessment.

Because the Area of Potential Effect (APE) involves STL, this AML undertaking is subject to review by the New Mexico Commissioner of Public Lands (Commissioner) under Rule 19.2.24 NMAC; *Cultural Properties Protection*, in accordance with the New Mexico Cultural Properties Protection Act, Sections 18-6A-6 NMSA 1978. The portion of BLM Land addressed in the Red Hill Mine Mitigation and Safeguarding activity (T:17S, R:4W, S:9, 15, 21, & 22) include activities covered in *Memorandum of Understanding between the State of New Mexico Energy, Minerals, and natural Resources Department (EMNRD) and the United states department of the Interior Bureau of Land management, New Mexico State Office Concerning Abandoned Mine Land Reclamation* (BLM MOU NM- 920-2019-004/EMNRD No. 19-521-0620-0200). Attachements 2a and 2b summarizes the AMLP's consultations with both the SLO and BLM-LCDO respectively.

Pueblo of Isleta (Attachment 2c) also requested the opportunity to comment on the cultural resource inventory report. As of this letter, the AMPL has not received commet on the report from the Peublo of Isleta.

As part of their preliminary studies, the EMNRD retained PaleoWest, LLC (PaleoWest), to perform a cultural resources inventory of the proposed project APE, and a full-coverage pedestrian survey was performed between September 22, 2022, and February 16, 2023, under the supervision of PaleoWest archaeologists Heather Seltzer-Rogers and Jacob Borchardt.

During the current investigation, PaleoWest documented 24 newly recorded sites (LA202364–LA202387) and eight HCPIs (HCPI53734–HCPI53741). Of the 24 newly recorded archaeological sites, 11 date to the prehistoric period, 10 date to the historic period, and 3 date to both the prehistoric and historic period. Eight HCPIs were recorded within the Project area (Attachment 1). In addition to sites and the HCPIs, a total of 93 Isolated Occurrences (IOs) were encountered in the project area and are not considered eligible for listing in the NRHP.

PaleoWest recommended historic period mining sites *eligible, unevaluated*, and *not eligible* based on National Register of Historic Places (NRHP) criteria and site/resource integrity (Table 1). PaleoWest recommended the sites *not eligible* for listing in the NRHP if the mining features present were not unique or significant and were shallow and lacked significant subsurface potential. Sites that were recommended *eligible* have a depth and a diversity of features. Because there is a potential for individual historic mining sites to contribute to what is currently an undefined historic mining district and/or landscape, and because PaleoWest did not address this potential directly in there NRHP eligibility evaluations, the AML left many of the historic mining sites as *unevaluated* though PaleoWest recommended them as *not eligible*. The SLO archaeologciats agreed with this assessment for the sites they manage stating, "normally for a

situation like this on STL we would be hesitant to list the site as *not eligible* and would prefer to leave it as unevaluated until future landscape-level assessments could be made." Conversely, the BLM-LCDO did not want *unevaluated* sites as they were unsure how to review the AML's effect assessment for sites without a definitive NRHP eligibility determination. Therefore, we determined several hiostoric mining sites located on BLM-LCDO managed lands to be *not eligible* for listing in the NRHP but suggest they could contribute to an undefined historic district and should be managed as if they were National Register *eligible*. Given certain integrity standards can be met, prehistoric site eligibility evaluations are primarily evaluated for their information potential under NRHP eligibility Criterion D, but can also be eligible for listing under Criteria A, B, and C.

PaleoWest recommended six sites *eligible* for listing in the NRHP. The AML agrees with these six recommendations. LA 202365 is a historic period mining site assigned an Anglo/Euro-American cultural affiliation (A.D. 1940-1975) and is determined eligible under Criteria A, C, and D. LA 202370 is a historic period mining site assigned an Anglo/Euro-American cultural affiliation (A.D. 1900-1975) and is determined eligible under Criteria C and D. LA 202376 and LA 202377 are non-structural prehistoric lithic scatters with unspecified prehistoric cultural and temporal affiliations that have been determined eligible for listing under Criterion D. LA 202382 is a multicomponent non-structural prehistoric lithic scatter with Archaic and Jornada Mogollon cultural affiliations (1200 B.C. – A.D. 700), and determined eligible for listing under Criterion D. The last site eligible for listing under Criterion D is LA 202382, a multicomponent site consisting of a non-structural prehistoric lithic scatter and historic mining features and artifacts. LA 202382 prehistoric component is assigned an unspecified prehistoric cultural and temporal affiliation while its historic cultural affiliation is Anglo/Euro-American.

LA 202374 and LA 202375 are two sites PaleoWest recommended as *not eligible* for listing to the NRHP. AML does not agree with these recommendations and will maintain the opinion these sites' NRHP eligibility remain *unevaluated* until more information is collected. Both LA 202374 and LA 202375 are large lithic scatters (n = >400) with Unspecified Prehsistiorc cultural affiliations (9500 B.C. – A.D. 1550). Neither site had a full inventory of their artifacts nor an analysis of the spatial distribution of the assemblage. Both sites have the potential to address landscape level questions regarding prehistoric lithic procurement within a lithic technological organization context.

Roughly a third of these 32 cultural resources require additional information for the AML to provide a fully informed NRHP eligibility evaluation. Consequently, AML has left 11 resources as *unevaluated* for listing in the NRHP. Sources of additional information include inadequate artifact inventories and spatial analysis, unfulfilled feature documentation (e.g., mine shafts), and incomplete recordings (e.g., road extents). These resources include LA 202371, LA 202374, LA 202375, LA 202378, LA 202381, LA 202385, LA 202387, HCPI 53735, HCPI 53737, HCPI 53738, and HCPI 53740.

Fourteen resources have been determined *not eligible* for listing to the NRHP. These include LA 202364, LA 202366, LA 202367, LA 202369, LA 202372, LA 202373, LA 202379, LA 202380, LA 202384, LA 202386, HCPI 53734, HCPI 53736, HCPI 53739, and HCPI 53741.

In general, AML safeguards mine features that are eight (8) feet or more in depth or length, which descend into the ground surface. AML safeguarding activities include a variety proposed methods such as mechanically or manually filling mine openings with surrounding waste

material or polyurethane foam (PUF) and building structural barriers that restrict human access such as fences, locking gates, cupolas, or other wildlife compatible closures (Attachment 3). These safeguarding measures minimize exposure of hazardous abandoned mine openings to the public, while also working to preserve the visual and informational integrity of cultural manifestations, and wildlife habitat, if present.

Mining features filled with existing waste rock or PUF will remain visible as shallow depressions and residual waste rock material will be recontoured in place. In addition, mine openings with highly visible waste piles, particularly on steep slopes, will be closed by an alternate method (PUF or other structural closure), thereby leaving the viewshed of the mining landscape intact. Structural closures are typically built on site to BLM Visual Resource Management specifications (https://www.blm.gov/programs/recreation/recreation-programs/visual-resource-management). Whenever possible, AML will use existing roads to access the features scheduled for closure. Field photos of several dangerous mine features from this project are provided in Attachement 4.

During the construction phase AML will treat all archaeological sites, regardless of their NRHP determination, as if they are *eligible* for listing in the NRHP. As with the NRHP eligible sites, AML will institute safeguarding methods that protect the visual and informational integrity of the site. AML proposes to avoid any remaining mine related features outside the treatment areas with all equipment, vehicles, foot traffic, and any other ground surface disturbing activities during construction. Designated avoidance areas that extend up to 50 feet (15 meters) from cultural resources will be established prior to construction. When working near designated avoidance areas and where construction access routes pass next to these locations, high visibility barrier/indicators will be installed around the avoidance perimeter. The Contractor, AML Cultural Resource Manager/Archaeologist, and AML Project Manager shall cooperate fully with avoidance practices to preserve archaeological and historic artifacts found within the project area. Moving, removal, or collecting of archaeological or historic materials from the project area or vicinity is prohibited.

Lastly, if previously unidentified archaeological sites, deposits, or in situ artifacts are encountered, all operation in that immediate area shall be terminated (100-ft. radius, 30 meters) until the proper preservation agencies and Native American groups have been notified and offered the opportunity to assess the discovery site.

Table 1 provides a summary of AML's NRHP eligibility determinations based on our review of the accompanying cultural resources report and site forms provided by PaleoWest. Further, following the above protocol, AML has assessed that the proposed undertaking will result in ***no adverse effect to historic properties*** or the mining landscape. The AML is seeking concurrence from the SHPO on our site eligibility determinations and effect assessment. Accordingly, please review PaleoWest's report, LA Forms and HCPI Forms and provide AML with any comments, recommendations, or corrections for these recordings. The report and cultural resource documentation can be accessed through the AML's file share site linked in the accompanying email.

Alternatively, if the SHPO has no objections, please return a signed copy of this correspondence to concur with the AML determinations as presented.

If you would like additional information or have any questions, please feel free to contact me by email at andrew.zink@emnrd.nm.gov or by phone at 505-490-7379.

Sincerely,

Andrew Zink
AMLP Cultural Resources Manager
EMNRD-MMD

Concurrence: _____ Date: 8/21/2023

For: New Mexico State Historic Preservation Officer

Comments: Concur with recommendations of eligibility and effects as proposed
If you are on the ground out there and have the opportunity, keep an eye out for shallow, probably largely filled in subtle quarry pits at sites like LA202374/202375. They might be tough to spot but at sites like that it would have been good strategy to get to some of the non weathered clasts if the deposition was sufficient.

Enc:

Attachement 1:	Project Area Overview Map
Attachement 2a – 2c:	SLO, BLM, & Pueblo of Isleta Consultation Records
Attachement 3:	Examples of Past Safeguarding Results
Attachement 4:	Project Area Photos
Table 1:	Site Summary Table

From: Cunnar, Geoff, DCA
To: Zink, Andrew, EMNRD
Subject: HPD Log 120391 Determination of Eligibility and Project Effects for Safeguarding Abandoned Mine Lands Within the Red Hill Safeguard Project
Date: Monday, August 21, 2023 12:37:47 PM
Attachments: 120391.pdf

Good Morning Andrew,
Attached please find the stamped consultation letter in regards to the above proposed undertaking.
Please let me know if you have any questions or concerns.

Regards,

Geoff

Geoffrey Cunnar, PhD RPA
Staff Archaeologist
Dept. of Cultural Affairs
Historic Preservation Division
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Phone: 505-476-0530
Email: geoff.cunnar@dca.nm.gov

From: SHPO, NM, DCA <NM.SHPO@dca.nm.gov>
Sent: Monday, August 14, 2023 4:15 PM
To: Cunnar, Geoff, DCA <Geoff.Cunnar@dca.nm.gov>
Subject: FW: EMNRD CentreStack Shared folder Invitation from andrew.zink@emnrd.nm.gov

Log# 120391

From: Cunnar, Geoff, DCA <Geoff.Cunnar@dca.nm.gov>
Sent: Monday, August 14, 2023 10:25 AM
To: SHPO, NM, DCA <NM.SHPO@dca.nm.gov>
Subject: FW: EMNRD CentreStack Shared folder Invitation from andrew.zink@emnrd.nm.gov

Good Morning Irene,
Could I get a log number for the below. It is from the NM Abandoned Mine Land Program and the NMCRIS number is 152175

Thanks,

geoff

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Monday, August 14, 2023 10:20 AM
To: Cunnar, Geoff, DCA <Geoff.Cunnar@dca.nm.gov>
Subject: EMNRD CentreStack Shared folder Invitation from andrew.zink@emnrd.nm.gov

EMNRD CentreStack Shared folder Invitation

You have received a shared folder from Andrew Zink (andrew.zink@emnrd.nm.gov).

Dr. Pappas, The Abandoned Mine Land Program (AMLP) is requesting NM SHPO review under Section 106 of the AMLP's proposed safeguarding of dangerous abandoned mine features in the Red Hill Mining district near Derry, NM. Included here is a link to the AMLP's consultation letter, Letter attachments, and the CRM report for NMCRIS Activity 152175 and the associated site forms. The report and site forms are uploaded to NMCRIS but are provided here for your convenience. The proposed project includes lands managed by the SLO and the BLM-LCFO. Both agencies have been consulted and these records are included with the attachments to this submission. The BLM has entered their DOEs into NMCRIS but the SLO has not. Please note, in the response from the SLO archaeologist, they state they agreed with our DOEs and affect assessment. Subsequent attempts to have the SLO enter DOEs in NMCFRIS have not resulted in a response from the SLO. Please let me know if there are questions or issues with the consultation and/or acquiring access to the AML file-share site. Sincerely, Andrew


Red Hill Mine Safeguard - *Expiration: Never*

Sincerely,

Andrew Zink

Click on the following link to see the folder.

https://fs.emnrd.nm.gov/portal/s/0298152403716164243

Having trouble with the above link? Try copying-and-pasting the above URL into your web browser.

If you have any questions, please contact the sender (andrew.zink@emnrd.nm.gov) or EMNRD CentreStack support.

Thank you for using EMNRD CentreStack, the Secure Data Sync, Share, and Collaboration company.

Attachment 2a

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd Leahy, JD, PhD
Deputy Secretary

Albert Chang, Director
Mining and Minerals Division

June 14, 2023

Stephanie Garcia Richard
Commissioner of Public Lands
New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501
505-827-5760

RE: A Class III Cultural Resource Inventory of 862.21 Acres for the Abandoned Mine Land Red Hill Mine Safeguarding Project, Sierra County, New Mexico (NMCRIS 152175)

Dear Ms. Richard,

The New Mexico Abandoned Mine Land Program (AML), in partnership with the U.S. Department of the Interior (USDI), Office of Surface Mining Reclamation and Enforcement (OSMRE), is conducting preliminary environmental studies involving New Mexico State Trust Lands (STL) near Red Hill Tank in the Caballo Mountains Mining District, Sierra County, New Mexico, prior to planned mine closures (Attachment 1). The portion of the Red Hill Mine Mitigation and Safeguarding activity involving STL (T:17S, R:4W, S:16) has been authorized by the New Mexico Commissioner of Public Lands (Commissioner) under a Natural Resource Authorization (NRA) agreement (#FOD-NR-329) (Attachment 2) between the State of New Mexico Energy, Minerals, and Natural Resources Department, Mining and Minerals Division and the Commissioner.

Because the Area of Potential Effect (APE) involves STL, this AML undertaking is subject to review by the Commissioner under Rule 19.2.24 NMAC; *Cultural Properties Protection*, in accordance with the New Mexico Cultural Properties Protection Act Sections 18-6A-6 NMSA 1978. To encourage coordination, the AML is requesting input from the New Mexico State Land Office (SLO) regarding any concerns you might have with the project regarding the identification and treatment of historic properties on STL as documented in the above referenced report, associated LA and HCPI Forms, and proposed in this letter.

As a federally funded program this proposed AML undertaking is subject to Section 106 (54 U.S.C. 306108) of the National Historic Preservation Act (NHPA) (54 U.S.C. 300101 et seq.) and its implementing regulations (36 CFR Part 800: Protection of Historic Properties, as revised August 2004). Aside from STL, the APE also includes land managed by Las Cruces District Office of the USDI-Bureau of Land Management (BLM) who will be consulted as a coordinating agency. Pueblo

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3400 • www.emnrd.nm.gov

of Isleta (Attachment 3) has also requested the opportunity to comment on the cultural resource inventory report.

The Project area includes the Caballo Mountains Mining District where the earliest recorded mineral production dates to 1918 but was primarily mined for manganese and fluorspar between 1940 through the 1980s. The proposed closure project is designed to protect the public from dangers associated with historical hard rock mining features such as adits, shafts, subsidence features, and other mine openings. The APE for these activities is encompassed within a ~796-acre block (Attachment 1) that consists of public lands managed by the BLM (~470-acres) and State Trust Land managed by the SLO (~326-acres).

As part of their preliminary studies, the EMNRD retained PaleoWest, LLC (PaleoWest), to perform a cultural resources inventory of the proposed project APE, and a full-coverage pedestrian survey was performed between September 22, 2022, and February 16, 2023, under the supervision of PaleoWest archaeologists Heather Seltzer-Rogers and Jacob Borchardt.

During the current investigation, PaleoWest documented 24 newly recorded sites (LA202364–LA202387) and eight HCPIs (HCPI53734–HCPI53741). Of the 24 newly recorded archaeological sites, 11 date to the prehistoric period, 10 date to the historic period, and 3 date to both the prehistoric and historic period. Eight HCPIs were recorded within the Project area (Attachment 4). In addition to sites and the HCPIs, a total of 93 Isolated Occurrences (IOs) were encountered in the project area and are not considered eligible for listing in the NRHP.

PaleoWest recommended historic period mining sites eligible, unevaluated, and not eligible based on National Register of Historic Places (NRHP) criteria and site/resource integrity (Table 1/Attachment 5). PaleoWest recommended the sites not eligible for listing in the NRHP if the mining features present were not unique or significant and were shallow and lacked significant subsurface potential. Sites that were recommended eligible have a depth and a diversity of features. Because there is a potential for individual historic mining sites to contribute to what is currently an undefined historic mining district and/or landscape, and because PaleoWest did not address this potential directly in there NRHP eligibility evaluations, the AML left many of the historic mining sites as unevaluated though PaleoWest recommended them as not eligible. Given certain integrity standards can be met, prehistoric site eligibility evaluations are primarily evaluated for their information potential under NRHP eligibility Criterion D, but can also be eligible for listing under Criteria A, B, and C.

Six sites were determined *eligible* for listing in the NRHP. LA 202365 is a historic period mining site assigned an Anglo/Euro-American cultural affiliation (A.D. 1940-1975) and is determined eligible under Criteria A, C, and D. LA 202370 is a historic period mining site assigned an Anglo/Euro-American cultural affiliation (A.D. 1900-1975) and is determined eligible under Criteria C and D. LA 202376 and LA 202377 are non-structural prehistoric lithic scatters with unspecified prehistoric cultural and temporal affiliations that have been determined eligible for listing under Criterion D. LA 202382 is a multicomponent non-structural prehistoric lithic scatter with Archaic and Jornada Mogollon cultural affiliations (1200 B.C. – A.D. 700), and determined eligible for listing under Criterion D. The last site eligible for listing under Criterion D is LA 202382, a multicomponent site consisting of a non-structural prehistoric lithic scatter and historic mining features and artifacts. LA 202382 prehistoric component is assigned an unspecified prehistoric cultural and temporal affiliation while its historic cultural affiliation is Anglo/Euro-American.

Half of these 32 cultural resources require additional information for the AML to provide a fully informed NRHP eligibility evaluation. Consequently, AML has left 16 resources as *unevaluated* for listing in the NRHP. Sources of additional information include inadequate artifact inventories and spatial analysis, unfulfilled feature documentation (e.g., mine shafts), and incomplete recordings (e.g., road extents). These resources include LA 202369, LA 202371, LA 202374, LA 202375, LA 202378, LA 202380, LA 202381, LA 202384 – LA 202387, HCPI 53735, HCPI 53737, HCPI 53738, and HCPI 53740.

Ten resources have been determined *not eligible* for listing to the NRHP. These include LA 202364, LA 202366, LA 202367, LA 202372, LA 202373, LA 202379, HCPI 53734, HCPI 53736, HCPI 53739, and HCPI 53741.

In general, AML safeguards mine features that are eight (8) feet or more in depth or length, which descend into the ground surface. AML safeguarding activities include a variety proposed methods such as mechanically or manually filling mine openings with surrounding waste material or polyurethane foam (PUF) and building structural barriers that restrict human access such as fences, locking gates, cupolas, or other wildlife compatible closures (Attachment 6). These safeguarding measures minimize exposure of hazardous abandoned mine openings to the public, while also working to preserve the visual and informational integrity of cultural manifestations, and wildlife habitat, if present.

Mining features filled with existing waste rock or PUF will remain visible as shallow depressions and residual waste rock material will be recontoured in place. In addition, mine openings with highly visible waste piles, particularly on steep slopes, will be closed by an alternate method (PUF or other structural closure), thereby leaving the viewshed of the mining landscape intact. Structural closures are typically be built on site to BLM Visual Resource Management specifications (https://www.blm.gov/programs/recreation/recreation-programs/visual-resource-management). Whenever possible, AML will use existing roads to access the features scheduled for closure.

During the construction phase AML will treat all archaeological sites with an unevaluated NRHP determination as eligible for listing in the NRHP and like with the NRHP eligible sites, institute safeguarding methods that protects the visual and informational integrity of the site. AML proposes to avoid any remaining mine related features (structural foundations) outside the treatment areas with all equipment, vehicles, foot traffic, and any other ground surface disturbing activities during construction. Designated avoidance areas that extend up to 50 feet (15 meters) from cultural resources will be established prior to construction. When working near designated avoidance areas and where construction access routes pass next to these locations, high visibility barrier/indicators will be installed around the avoidance perimeter. The Contractor, AML Cultural Resource Manager/Archaeologist, and AML Project Manager shall cooperate fully with avoidance practices to preserve archaeological and historic artifacts found within the project area. Moving, removal, or collecting of archaeological or historic materials from the project area or vicinity is prohibited.

Lastly, if previously unidentified archaeological sites, deposits, or in situ artifacts are encountered, all operation in that immediate area shall be terminated (100-ft. radius, 30 meters) until the proper preservation agencies and Native American groups have been notified and offered the opportunity to assess the discovery site.

Table 1 provides a summary of AML's NRHP eligibility determinations based on our review of the accompanying cultural resources report and site forms provided by PaleoWest. Further, following the

above protocol, AML has assessed that the proposed undertaking will result in ***no adverse effect to historic properties*** or the mining landscape. The AML is seeking concurrence from the Commissioner on site eligibility determinations for sites located on State Trust Land, the AML's effect assessment. Accordingly, please review PaleoWest's report, LA Forms and HCPI Forms and provide AML with any comments, recommendations, or corrections for sites administered by the SLO and the Commissioner (See Table 1. for Land Status). The report and cultural resource documentation have been uploaded to the NMCRIS database and can be downloaded for you viewing.

Alternatively, if the Commissioner has no objections, please return a signed copy of this correspondence to concur with the AML determinations as presented. Along with Commissioner's, BLM's, and Pueblo of Isleta's responses, the AML will forward copies of the final report and administrative documents to the SHPO for final review and concurrence. Lastly, the AML will forward any project related correspondence it receives from the SHPO to the Commissioner for the State Land Office project file.

If you would like additional information or have any questions, please feel free to contact me by email at andrew.zink@emnrd.nm.gov or by phone at 505-490-7379

Thank you for your coordination in this project.

Sincerely,

Andrew Zink
AMLP Cultural Resources Manager
EMNRD-MMD

CC: Ethan Ortega (New Mexico State Land Office, Director of Cultural Resources)

Concurrence: DocuSigned by: Stephanie Garcia Richard 80A84ED7FDCE465... Date: 7/18/2023

For: New Mexico Commissioner of Public Lands

Comments: The NMSLO Cultural Resources Office concurs with the DOE and management recommendations for the cultural properties within the APE of this project on State Trust Land.

From: Ortega, Ethan O.
To: Zink, Andrew, EMNRD
Cc: Moiola, Lloyd, EMNRD
Subject: [EXTERNAL] RE: AML Red Hill Mine Safeguarding Project
Date: Monday, July 17, 2023 7:25:40 AM

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hello Andrew,

Thank you for checking in. This has been submitted to the Commissioner for signature and you will receive a signed copy via DocuSign when she has completed it. The NMSLO CRO concurs with the DOE and management recommendations for the cultural properties within the APE of this project on State Trust Land.

Best,

Ethan Orlando Ortega
Pronouns: He, Him, His
Division Director & Archaeologist
Cultural Resources Office
505.827.5781
New Mexico State Land Office

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Friday, July 14, 2023 2:48 PM
To: Ortega, Ethan O. <eortega@slo.state.nm.us>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: [EXTERNAL] RE: AML Red Hill Mine Safeguarding Project

Hi, Ethan-

This is just a follow-up email. I wanted to check in on the status of the review and if you had any questions.

Sincerely,

Andrew

From: Zink, Andrew, EMNRD
Sent: Wednesday, June 14, 2023 2:40 PM
To: Ortega, Ethan O. <eortega@slo.state.nm.us>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: AML Red Hill Mine Safeguarding Project

Ethan-

Please see the attached consultation letter requesting SLO review of the below report and associated site forms (Uploaded to NMCRIS). AML requests a review of the AML's NRHP eligibility determinations for site's on STL and AML's project effect assessment.

- *A Class III Cultural Resource Inventory of 862.21 Acres for the Abandoned Mine Land Red Hill Mine Safeguarding Project, Sierra County, New Mexico.*

Sincerely,

Andrew Zink
Cultural Resource Manager
New Mexico Abandoned Mine Land Program
Energy, Minerals and Natural Resources Department
8801 Horizon Blvd. NE, Suite 260
Albuquerque, NM 87113
(505)490-7379
andrew.zink@emnrd.nm.gov

From: DocuSign NA3 System on behalf of Ethan Ortega via DocuSign
To: Zink, Andrew, EMNRD
Subject: [EXTERNAL] Complete with DocuSign: Red Hill Agency NAE Cultural Consultation Letter.pdf
Date: Monday, July 17, 2023 7:24:19 AM

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Ethan Ortega sent you a copy.

REVIEW DOCUMENT

Ethan Ortega
eortega@slo.state.nm.us

Hello Commissioner,

This is a consultation letter from EMNRD for an NRA mine safety project on STL. I see no cultural issues with the plans for this project, they have done their surveys and consultation.

Thanks,
Ethan

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This message was sent to you by Ethan Ortega who is using the DocuSign Electronic Signature Service. If you would rather not receive email from this sender you may contact the sender with your request.

From: Ortega, Ethan O.
To: Zink, Andrew, EMNRD
Cc: Moiola, Lloyd, EMNRD
Subject: RE: [EXTERNAL] RE: AML Red Hill Mine Safeguarding Project
Date: Wednesday, July 26, 2023 9:01:41 AM

Hello Andrew,

I'm glad they got you access to DocuSign! That is how we do all of our paperwork, so I'll just route these requests to send you a copy after they are completed moving forward.

Only the very tip of this cultural property extends on to STL. The vast majority of cultural resources and features are located on BLM managed lands, so the NMSLO will follow their lead with the DOE. FYI – normally for a situation like this on STL we would be hesitant to list the site as not eligible and would prefer to leave it as unevaluated until future landscape-level assessments could be made.

I just entered the NMSLO's concurrence on this DOE in NMCRIS.

Thanks,

Ethan Orlando Ortega
Pronouns: He, Him, His
Division Director & Archaeologist
Cultural Resources Office
505.827.5781
New Mexico State Land Office

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Tuesday, July 25, 2023 1:58 PM
To: Ortega, Ethan O. <eortega@slo.state.nm.us>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: RE: [EXTERNAL] RE: AML Red Hill Mine Safeguarding Project

Hi, Ethan-

I have been granted access to DocuSign from DOiT so I was able to retrieve the actual signed documents. Thanks again.

For the Red Hill project, the BLM would like to not have any 'Unevaluated' sites for those sitting on BLM managed lands. I knew this before my review and should have had the foresight to submit the less than intact sites that are likely NE individually but have the potential to contribute to an undefined historic district (UHD), as NE and have them managed during the current undertaking as eligible. Instead, I left the NR eligibility as 'unevaluated' since they were not evaluated for their potential to contribute to an UHD… and still treat as if eligible.

With that background, LA 202380 sits on both BLM and STL. I'm proposing to change my eligibility determination to NE and treat it as if eligible due to not being evaluated for contributing to an UHD. Would this be a change you can agree with? This way, the SLO and BLM would be on the same page for a site that traverses lands managed by both agencies.

LA202380	Historic mining operation, Structural	Anglo/Euro-American, Statehood–WWII to Recent Historic Period (A.D.1940–1970)	BLM-LCDO & STL	Not Eligible	SLO Unevaluated/Not Eligible? / BLM Not Eligible	Not Eligible	**Institute safeguarding methods that protects the visual and informational integrity of the site. All future activities should avoid disturbances to the site. Individually Not Eligble to the NRHP but could contribute to an undefined historic district

Sincerely,

Andrew

From: Zink, Andrew, EMNRD
Sent: Wednesday, July 19, 2023 8:30 AM
To: Ortega, Ethan O. <eortega@slo.state.nm.us>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: RE: [EXTERNAL] RE: AML Red Hill Mine Safeguarding Project

Hi, Ethan-

I know you're away until the 25th but, on your return to the office, can you or someone in the office there enter the SLO's DOEs into the NMCRIS database for the sites on STL? NMCRIS DOE entries are the official agency determinations and having them there for all interested and eligible viewers to see avoids delays and confusion. I plan to enter the AMLP's DOE once I have both the SLO's and BLM's submitted… this way, when SHPO is reviewing our submission, they'll see we have consulted and are in concurrence.

Thanks, and enjoy the time off… stay cool!

Andrew

From: Ortega, Ethan O. <eortega@slo.state.nm.us>
Sent: Monday, July 17, 2023 7:25 AM
To: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: [EXTERNAL] RE: AML Red Hill Mine Safeguarding Project

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hello Andrew,

Thank you for checking in. This has been submitted to the Commissioner for signature and you will receive a signed copy via DocuSign when she has completed it. The NMSLO CRO concurs with the DOE and management recommendations for the cultural properties within the APE of this project on State Trust Land.

Best,

Ethan Orlando Ortega
Pronouns: He, Him, His
Division Director & Archaeologist
Cultural Resources Office
505.827.5781
New Mexico State Land Office

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Friday, July 14, 2023 2:48 PM
To: Ortega, Ethan O. <eortega@slo.state.nm.us>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: [EXTERNAL] RE: AML Red Hill Mine Safeguarding Project

Hi, Ethan-

This is just a follow-up email. I wanted to check in on the status of the review and if you had any questions.

Sincerely,

Andrew

From: Zink, Andrew, EMNRD
Sent: Wednesday, June 14, 2023 2:40 PM
To: Ortega, Ethan O. <eortega@slo.state.nm.us>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: AML Red Hill Mine Safeguarding Project

Ethan-

Please see the attached consultation letter requesting SLO review of the below report and associated site forms (Uploaded to NMCRIS). AML requests a review of the AML's NRHP eligibility determinations for site's on STL and AML's project effect assessment.

- *A Class III Cultural Resource Inventory of 862.21 Acres for the Abandoned Mine Land Red Hill Mine Safeguarding Project, Sierra County, New Mexico.*

Sincerely,

Andrew Zink
Cultural Resource Manager
New Mexico Abandoned Mine Land Program
Energy, Minerals and Natural Resources Department
8801 Horizon Blvd. NE, Suite 260

Attachment 2b

State of New Mexico
Energy, Minerals and Natural Resources Department

June 14, 2023

David Wallace
Assistant District Manager
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005
dwallace@blm.gov

RE: A Class III Cultural Resource Inventory of 862.21 Acres for the Abandoned Mine Land Red Hill Mine Safeguarding Project, Sierra County, New Mexico (NMCRIS 152175)

Dear Mr. Wallace,

The New Mexico Abandoned Mine Land Program (AML), in partnership with the U.S. Department of the Interior (USDI), Office of Surface Mining Reclamation and Enforcement (OSMRE), is conducting preliminary environmental studies involving land managed by Las Cruces District Office of the USDI-Bureau of Land Management (BLM-LCDO) near Red Hill Tank in the Caballo Mountains Mining District, Sierra County, New Mexico (Attachment 1). The portion of BLM Land addressed the Red Hill Mine Mitigation and Safeguarding activity (T:17S, R:4W, S:9, 15, 21, & 22) include activities covered in *Memorandum of Understanding between the State of New Mexico Energy, Minerals, and natural Resources Department (EMNRD) and the United states department of the Interior Bureau of Land management, New Mexico State Office Concerning Abandoned Mine Land Reclamation* (BLM MOU NM- 920-2019-004/EMNRD No. 19-521-0620-0200). .

As a federally funded program this proposed AML undertaking is subject to Section 106 (54 U.S.C. 306108) of the National Historic Preservation Act (NHPA) (54 U.S.C. 300101 et seq.) and its implementing regulations (36 CFR Part 800: Protection of Historic Properties, as revised August 2004). In continued coordination under the MOU, the AML is requesting input from the BLM-LCDO regarding any concerns you might have with the project regarding the identification and treatment of historic properties on BLM land as documented in the above referenced report, associated LA and HCPI Forms, and proposed in this letter.

Aside from BLM land, the APE also includes State Trust Land (STL) managed by the New Mexico State Land Office (SLO). Because the Area of Potential Effect (APE) involves STL, this AML undertaking is subject to review by the New Mexico Commissioner of Public Lands (Commissioner) under Rule 19.2.24 NMAC; *Cultural Properties Protection*, in accordance with the New Mexico

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The Project area includes the Caballo Mountains Mining District where the earliest recorded mineral production dates to 1918 but was primarily mined for manganese and fluorspar between 1940 through the 1980s. The proposed closure project is designed to protect the public from dangers associated with historical hard rock mining features such as adits, shafts, subsidence features, and other mine openings. The APE for these activities is encompassed within a ~796-acre block (Attachment 1) that consists of public lands managed by the BLM (~470-acres) and State Trust Land managed by the SLO (~326-acres).

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above protocol, AML has assessed that the proposed undertaking will result in ***no adverse effect to historic properties*** or the mining landscape. The AML is seeking concurrence from the BLM-LCDO on site eligibility determinations for sites located on BLM Land, and on the AML's effect assessment. Accordingly, please review PaleoWest's report, LA Forms and HCPI Forms and provide AML with any comments, recommendations, or corrections for sites managed by the BLM-LCDO (See Table 1. for Land Status). The report and cultural resource documentation can be accessed through the AML's file share site linked in the accompanying email.

Alternatively, if the BLM-LCDO has no objections, please return a signed copy of this correspondence to concur with the AML determinations as presented. Along with BLM-LCDO's, Commissioner's, and Pueblo of Isleta's responses, the AML will forward copies of the final report and administrative documents to the SHPO for final review and concurrence. Lastly, the AML will forward any project related correspondence it receives from the SHPO to the BLM-LCDO for their project file.

If you would like additional information or have any questions, please feel free to contact me by email at andrew.zink@emnrd.nm.gov or by phone at 505-490-7379.

Thank you for your coordination in this project.

Sincerely,

Andrew Zink
AMLP Cultural Resources Manager
EMNRD-MMD

CC: Trinity Miller (Archaeologist, BLM-LCDO)

Concurrence: _____ Date: _____

For: BLM-LCDO District manager

Comments: _____

From: Zink, Andrew, EMNRD
To: Miller, Trinity A
Cc: Moiola, Lloyd, EMNRD
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance
Date: Thursday, July 27, 2023 2:39:00 PM
Attachments: LA202385_152175.pdf
LA202375_152175.pdf
LA202374_152175.pdf

Hi, Trinity-

Here are the three sites I was referencing in the previous email that involve BLM-LCDO lands and I had as 'unevaluated'. I'm proposing LA 202374 and LA 202375 be considered eligible under D and will concede NR eligibility to the BLM-LCDO for LA 202385. LA 202385 only has 33 lithic artifacts and the mining component is like other mining sites we've agreed to go with NE on...and there's nothing to safeguard there. There will be complete avoidance of all three sites. Once we get these three sites hashed out, I can start finalizing my SHPO consultation.

Thank you,

Andrew

LA202374"	Prehistoric lithic scatter, Non-structural	Unspecific Prehistoric (9500 B.C.–A.D. 1550)	BLM-LCDO	Not Eligible	?	Unevaluated / Change to Eligible D	**Avoid - Large lithic scatter ~400 pcs. with an incomplete recordation of the assemblage suggesting information potential beyond the current recording exists (lithic technological organization). Horizontal spatial integrity present to a certain extent (concentrations) and the extent of impact from erosion is unknown. Potential lithic procurement/quarry and/or retooling/processing site that may best be evaluated for eligibility to the NRHP within a landscape level context.
LA202375"	Prehistoric lithic scatter, Non-structural	Unspecific Prehistoric (9500 B.C.–A.D. 1550)	BLM-LCDO & STL	Not Eligible	SLO (Unevaluated) / BLM (?)	Unevaluated / Change to Eligible D	**Avoid - Large lithic scatter ~500 pcs. with an incomplete recordation of the assemblage suggesting information potential beyond the current recording exists (lithic technological organization). Horizontal spatial integrity present to a certain extent (concentrations) and the extent of impact from erosion is unknown. Potential lithic procurement/quarry and/or retooling/processing site that may best may best be evaluated for eligibility to the NRHP within a landscape level context.
LA202385	Prehistoric lithic scatter/ Historic mining operation, Structural	Unspecific Prehistoric Period (9500 B.C.–A.D. 1550), Anglo/Euro-American, Recent Historic Period (A.D. 1950–1975)	BLM-LCDO	Undetermined	?	Unevaluated / Change to ? (will concede to BLM-LCFD but	**Avoid - All future activities should avoid disturbances to area near AC1.

From: Zink, Andrew, EMNRD
Sent: Friday, July 21, 2023 4:30 PM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <James.Hollen@emnrd.nm.gov>; Teske, Christopher D <cteske@blm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Great-

In looking over my spreadsheet, there are three other BLM-LCDO sites that are undetermined: LA 202374, LA 202375, and LA 202385. The first two are large lithic scatters >400 pcs.. I would lean towards E, D for both. The third site, LA 202385 has a small prehistoric assemblage in AC1, while the remainder is mining. I can role with whatever DOE the BLM decides is appropriate for this site. I think PW went with undetermined because they didn't test the concentration. The fully prehistoric sites will be completely avoided, and we plan to avoid AC1 from LA 202385 and treat the site as eligible if it receives any safeguarding attention.

Andrew

From: Miller, Trinity A <tamiller@blm.gov>
Sent: Friday, July 21, 2023 4:17 PM
To: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <james.hollen@emnrd.nm.gov>; Teske, Christopher D <cteske@blm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Andrew, thanks! I was able to download them.

Trinity A. Miller (*she/her*)
Archaeologist
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
Phone: 575-525-4409
Email: tamiller@blm.gov

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Friday, July 21, 2023 4:12 PM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <james.hollen@emnrd.nm.gov>; Teske, Christopher D <cteske@blm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

I placed a GIS Shapefile folder in the FTP site... let me know if you need another invite to access. I think your access was open ended and you should be able to access. There's shapes for sites, roads, and the APE.

Andrew

From: Zink, Andrew, EMNRD
Sent: Friday, July 21, 2023 4:06 PM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <James.Hollen@emnrd.nm.gov>; Teske, Christopher D <cteske@blm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Will do.

From: Miller, Trinity A <tamiller@blm.gov>
Sent: Friday, July 21, 2023 4:05 PM
To: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <james.hollen@emnrd.nm.gov>; Teske, Christopher D <cteske@blm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Andrew,

Can you please upload to the FTP site/email me the shapefiles for the surveyed project area and site boundaries?

Thank you,
Trinity

Trinity A. Miller (*she/her*)
Archaeologist
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
Phone: 575-525-4409
Email: tamiller@blm.gov

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Friday, July 21, 2023 3:49 PM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <james.hollen@emnrd.nm.gov>; Teske, Christopher D <cteske@blm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Thanks, trinity-

If there are other BLM-CFO sites besides the four below you run into eligibility questions with, let me know, and we'll work on a resolution.

Andrew

From: Miller, Trinity A <tamiller@blm.gov>
Sent: Friday, July 21, 2023 3:35 PM
To: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <james.hollen@emnrd.nm.gov>; Teske, Christopher D <cteske@blm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi Andrew,

Thank you for your email and additional information. Our goal with the cultural resources at BLM is to come to an Eligible or Not Eligible determination whenever possible. Yes, it would be best for the BLM to determine that sites LA 202369, LA 202380, LA 202384, and LA 202386 are Not Eligible. I will enter the DOE for the BLM sites into NMCRIS. You bring up a good point regarding UHD, which unfortunately at this time we cannot address. Treating all sites as eligible during the safeguarding procedures sounds great to me!

Thanks again for the dialogue.

Have a great weekend,
Trinity

Trinity A. Miller (*she/her*)
Archaeologist
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
Phone: 575-525-4409
Email: tamiller@blm.gov

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Friday, July 21, 2023 2:09 PM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <james.hollen@emnrd.nm.gov>; Teske, Christopher D <cteske@blm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi, Trinity-

Lloyd emailed me wanting me to get ahold of Chris Teske to discuss our effect assessments regarding the 'Undetermined' sites. In particular, LA 202369, LA 202380, LA 202384, and LA 202386 which are the BLM managed sites. We are not against determining these four sites as Not Eligible for listing in the NR. We can do that if that's the BLM's inclination... especially if it clears things up a bit on your end. I understand the E or NE emphasis with no room for undetermined sites. These four sites are likely NE but could contribute to an undefined historic district (UHD). Whether they can contribute can't be determined until these resources are evaluated within that type of context which currently doesn't exist (that I know of). It's fine if we enter Not Eligible in NMCRIS but I would provide a comment that they could contribute to an UHD. With that, all the sites, regardless of our determinations shall be treated as if they are eligible for listing in the NR. This way, there won't be any confusion in the field to which sites should be protected and safeguarded according to our scripted methods and which should not.

I hope this is getting us somewhere and clarifies in-field procedures regardless of NR eligibility.

Andrew

From: Zink, Andrew, EMNRD
Sent: Thursday, July 20, 2023 9:03 AM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <James.Hollen@emnrd.nm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Good morning, Trinity-

Regarding the below email, I have no idea where I got site LA 228057 from. The site I meant to reference is LA 202365, the large site in the southern portion of the APE. Also, based on the staff's experience here, most of the closures will be bat gates with only a few backfills. There are no plans to mechanically (or otherwise) re-contour any portion of the landscape.

Andrew

From: Zink, Andrew, EMNRD
Sent: Wednesday, July 19, 2023 11:08 AM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Hollen, James, EMNRD <James.Hollen@emnrd.nm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi, Trinity-

We're still in the process of identifying the specific features that will be treated and the method for each individual feature, but the methods will be chosen from the suite of examples sent in the initial consultation letter.. The avoidance and monitoring measures along with the methods and techniques that will be utilized at the sites, regardless of the feature were summarized in the letter and will be the basis for all activities. The impression I have now is that most, if not all, the proposed safeguarding will occur within LA 228057, which on BLM Land. It will likely be 6 months to a year before we have specific safeguarding designs for specific features and even then, there will be a need to have the flexibility to make in-field design adjustments (based on the rock, accessibility, in-field experience judgements, etc...), all of which would be governed by the safeguarding methods and procedures outlined in the letter. The design specifics (safeguarding methods) are not finalized until after the EA is signed for which the NEPA, thus section 106, needs completed.

What would the BLM NOT want to happen, that they would consider an adverse effect? Maybe we need to work on the precision of the management summary wording to better reflect the end goals of the processes followed in avoiding and minimizing the adverse visual and physical effects to the eligible and undetermined sites?

As for the DOEs and management recommendations provided by the contractor in their report and site forms, they won't change... those are their recommendations, and we have no obligation to accept or follow them. They really shouldn't be edited as they are not official but simply a professional's opinion. NMCRIS DOE entries are the official agency determinations and having them entered in NMCRIS for all interested and eligible viewers to see avoids delays and confusion. I plan to enter the AMLP's DOEs once I have both the SLO's and BLM's submitted... this way, during SHPO review, they'll see we have consulted and are in concurrence. Can you or someone in the office there enter the BLM's DOEs into the NMCRIS database for the sites on BLM Lands? As of this email I didn't see any BLM entries.

The official management procedures will be those provided in my letter and site summary table which will also be provided to SHPO with our DOEs for review.

The development of historic contexts is always the best route in managing a specific type of resources. In this case, historic mining sites and their potential to contribute to a historic district. I think a site's integrity will be the deciding factor to whether it not it could contribute to a historic district, and a context could/would address those integrity questions in evaluating a sites contributions to a historic district. Until such contexts can be developed, I'd recommend avoidance.

Sincerely,

Andrew Zink
Cultural Resource Manager
New Mexico Abandoned Mine Land Program
Energy, Minerals and Natural Resources Department
8801 Horizon Blvd. NE, Suite 260
Albuquerque, NM 87113
(505) 490-7379
andrew.zink@emnrd.nm.gov

Andrew

From: Miller, Trinity A <tamiller@blm.gov>
Sent: Tuesday, July 18, 2023 3:27 PM
To: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi Andrew,

Thanks for your patience. I have finished my review and concur with the AML Eligibility recommendations for the sites and HCPIs as stated in the consultation letter: Attachment 4. However, I would like more information regarding the specific safeguarding methods for each individual site that would avoid adverse impacts to Eligible/Unevaluated sites.

Once consultation with all parties is complete, will the report/site forms be revised to reflect the updated DOE and management recommendations?

At some point I would enjoy talking with you in general about undefined historic mining districts and what the BLM as a land manager can do to manage/assess these sites in the mean time.

Thank you,

Trinity

Trinity A. Miller (she/her)
Archaeologist
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
Phone: 575-525-4409
Email: tamiller@blm.gov

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Friday, July 14, 2023 3:19 PM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Thanks, Trinity!

From: Miller, Trinity A <tamiller@blm.gov>
Sent: Friday, July 14, 2023 3:18 PM
To: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi Andrew,

I hope you've been staying cool in this heat. It's been hitting 104-106 down here in Cruces... crazy!

Sorry for the delay with submitting comments. I am wrapping up my review and I will get back with you early next week. Thank you for your patience.

I hope you have a great weekend,
Trinity

Trinity A. Miller (she/her)
Archaeologist
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
Phone: 575-525-4409
Email: tamiller@blm.gov

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Friday, July 14, 2023 2:48 PM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi, Trinity-

This is just a follow-up email. I wanted to check in on the status of the review and if you had any questions.

Sincerely,

Andrew

From: Miller, Trinity A <tamiller@blm.gov>
Sent: Thursday, June 15, 2023 6:52 PM
To: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi Andrew,

Thank you! I received the link and successfully downloaded the files. I will be in touch.

Take care,
Trinity

Trinity A. Miller (she/her)
Archaeologist
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
Phone: 575-525-4409
Email: tamiller@blm.gov

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Wednesday, June 14, 2023 3:35 PM
To: Miller, Trinity A <tamiller@blm.gov>

Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi, Trinity-

I just sent a FTP file share email with a link to the folder holding our consultation letter, the PaleoWest report, and their site forms.

If you don't receive the email soon or have difficulty downloading the files, let me know.

Andrew

From: Miller, Trinity A <tamiller@blm.gov>
Sent: Monday, June 12, 2023 1:09 PM
To: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi Andrew,

Hope you had a good weekend.

David Wallace
Assistant District Manager
dwallace@blm.gov
office: 575-525-4393
mobile: 575-343-2938

Best,
Trinity

Trinity A. Miller (*she/her*)
Archaeologist
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
Phone: 575-525-4409
Email: tamiller@blm.gov

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Monday, June 12, 2023 11:47 AM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi, Trinity... Happy Monday-

Do you have contact info for David you can share? Phone, email?

Andrew

From: Zink, Andrew, EMNRD
Sent: Thursday, June 8, 2023 4:32 PM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi, Trinity-

I'm still getting settled in so I'm still catching up on the in-house process for consultation... but plan to get you something here in the near future. I know AMLP has an FTP site, but I have yet to get familiarized on accessing it and its use.

Stay tuned.

Andrew

From: Miller, Trinity A <tamiller@blm.gov>
Sent: Thursday, June 8, 2023 11:52 AM
To: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi Andrew,

Congrats on your new position! I look forward to working with you in this new role and appreciate your email.

Speaking of retirements, Bill Childress retired December 2022. The position is currently vacant, but I've heard that BLM is trying to fill the position by September. Please address the Red Hill consultation letter to David Wallace, Assistant District Manager.

You are correct, I have not seen the official consultation letter if it was sent to BLM LCDO. The only response that I had given was an email to Rick requesting an opportunity to review the survey and site forms when they were ready. I look forward to reviewing these and appreciate you reaching out to touch base about the Red Hill Mine. A digital submission is preferred. Do you have a file transfer site? The BLM does not have a site that works outside of our agency, but we can access most FTP sites. Most of the time the cultural contractors who did the survey have an FTP site that can be used to transfer large files and BLM tends to get links that way.

Thanks for the question on how to properly consult with the BLM. A consultation letter addressed to the District Manager (or in our case the Assistant District Manager) is the preferred method. However if you send the letter digitally to me in an email or if you include me as a CC then I will be able to respond more quickly. This is the case if you know I am the POC as the

archaeologist for a specific project. However if it is a new project or you aren't sure who will be the BLM LCDO contact, you can send the letter to the District Manager and my supervisor, Kendrah Madrid will sort out who will be the assigned BLM Archaeologist.

Best,
Trinity

Trinity A. Miller (*she/her*)
Archaeologist
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
Phone: 575-525-4409
Email: tamiller@blm.gov

From: Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Sent: Tuesday, June 6, 2023 1:50 PM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Maiola, Lloyd, EMNRD <lloyd.maiola@emnrd.nm.gov>
Subject: FW: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Hi, Trinity-

Rick retired and I have moved over from the SHPO's office to the AML to replace him. I'm catching up here on the Red Hill Mine reclamation project and the below email thread is the last correspondence with the BLM-LC office I can scrounge up. We have the final report in and a set of LA Forms that will be ready for BLM review here shortly (I have some IT hurdles to get over first) and am curious how to properly consult with your office. Should I send the consultation to you and Cc Bill, or is there another way to do this… we might have to use a file share site?

Also, I have found an initial letter from the AML to your office seeking coordination with your office on this project, but I can't find any response other than this email thread. Was there a BLM signed letter sent in response you know of or is this email thread the extent of the initial consultation? This thread alludes to you not receiving the letter that reached Bill.

Anyways, once I can get access back into NMCRIS under this new department and finalize our review and consultation letter, I'll have this report and site forms out to you for review…. Digitally of course, unless you want it submitted otherwise. Once I receive responses from your office, the State Land Office, and any interested tribes (I think Isleta the only one interested in the final report), I'll get a consultation sent off to the SHPO.

I don't have a phone number yet so please respond by email until I get set up with one of those communication devices.

Sincerely,

Andrew Zink
Cultural Resource Manager
New Mexico Abandoned Mine Land Program
Energy, Minerals and Natural Resources Department
8801 Horizon Blvd. NE, Suite 160
Albuquerque, NM 87113
andrew.zink@emnrd.nm.gov

From: Wessel, Richard, EMNRD
Sent: Friday, January 6, 2023 8:41 AM
To: Miller, Trinity A <tamiller@blm.gov>
Cc: Madrid, Kendrah M <kmadrid@blm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Very good, Trinity. I have yet to receive either the LA Site forms or the report. I'll let you know when I do.

Thank you,

Rick Wessel
Cultural Resources Manager
EMNRD-MMD-Abandoned Mine Land Program
1220 S. St. Francis Dr., Santa Fe, NM 87505
richard.wessel@emnrd.nm.gov
Cell: 505.819.8856

From: Miller, Trinity A <tamiller@blm.gov>
Sent: Wednesday, January 4, 2023 3:46 PM
To: Wessel, Richard, EMNRD <Richard.Wessel@emnrd.nm.gov>
Cc: Madrid, Kendrah M <kmadrid@blm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Good afternoon Rick,

Thank you for reaching out to the BLM regarding the Red Hill project. I was contacted by Heather Seltzer from PaleoWest on 9/19/22. PaleoWest submitted a BLM fieldwork authorization and it was processed on 9/27. I have been in contact with Heather and was aware they would be conducting cultural surveys.

However, I do not have a copy of the consultation letter or survey report. That would be great if you could send that over to me for review.

I appreciate the coordination,
Trinity

Trinity A. Miller (*she/her*)
Archaeologist
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street

Las Cruces, New Mexico 88005
Phone: 575-525-4409
Email: tamiller@blm.gov

From: Wessel, Richard, EMNRD <Richard.Wessel@emnrd.nm.gov>
Sent: Tuesday, January 3, 2023 1:01 PM
To: Madrid, Kendrah M <kmadrid@blm.gov>; Miller, Trinity A <tamiller@blm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Okay, thank you!

Thank you,

Rick Wessel
Cultural Resources Manager
EMNRD-MMD-Abandoned Mine Land Program
1220 S. St. Francis Dr., Santa Fe, NM 87505
richard.wessel@emnrd.nm.gov
Cell: 505.819.8856

From: Madrid, Kendrah M <kmadrid@blm.gov>
Sent: Tuesday, January 3, 2023 12:54 PM
To: Wessel, Richard, EMNRD <Richard.Wessel@emnrd.nm.gov>; Miller, Trinity A <tamiller@blm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

I am not sure if she has the letter, so it would probably be best if you sent her all the information. She is out today, but will return tomorrow.

Thank you,

Kendrah

Kendrah M. Madrid
Branch Chief Recreation & Cultural
Bureau of Land Management
Las Cruces District Office
1800 Marquess St.
Las Cruces, NM 88005
Work: (575) 525-4340
Cell: (575) 494-2524
kmadrid@blm.gov

From: Wessel, Richard, EMNRD <Richard.Wessel@emnrd.nm.gov>
Sent: Tuesday, January 3, 2023 12:08 PM
To: Madrid, Kendrah M <kmadrid@blm.gov>
Subject: RE: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Thank you for your response, Kendra. Does Trinity have the letter now? Or should I copy her? I hope she's aware of the project since the cultural resource contractor was supposed to check in with her.

Thank you,

Rick Wessel
Cultural Resources Manager
EMNRD-MMD-Abandoned Mine Land Program
1220 S. St. Francis Dr., Santa Fe, NM 87505
richard.wessel@emnrd.nm.gov
Cell: 505.819.8856

From: Madrid, Kendrah M <kmadrid@blm.gov>
Sent: Tuesday, January 3, 2023 11:39 AM
To: Wessel, Richard, EMNRD <Richard.Wessel@emnrd.nm.gov>; Miller, Trinity A <tamiller@blm.gov>
Cc: Wallace, David L <dwallace@blm.gov>
Subject: Fw: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Richard,

Please work with Trinity Miller, District Archaeologist for this request. Also, please cc me on your correspondence.

Thank you,

Kendrah

Kendrah M. Madrid
Branch Chief Recreation & Cultural
Bureau of Land Management
Las Cruces District Office
1800 Marquess St.
Las Cruces, NM 88005
Work: (575) 525-4340
Cell: (575) 494-2524
kmadrid@blm.gov

From: Childress, William T <wchildre@blm.gov>
Sent: Thursday, December 22, 2022 11:13 AM
To: BLM_NM_LCDO_Mail <BLM_NM_LCDO_Mail@blm.gov>; Wallace, David L <dlwallace@blm.gov>; Madrid, Kendrah M <kmadrid@blm.gov>
Subject: Re: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Dave and Kendrah,

Per Mr. Wessel request please reach out to him to address his request and questions.

Bill Childress
District Manager, Las Cruces
Bureau of Land Management
1800 Marquess Street
Las Cruces, NM 88005
email: *wchildre@blm.gov*
Office: 575-525-4499
Cell: 575-644-8777
Facebook: *http://www.facebook.com/BLMLasCruces*

From: BLM_NM_LCDO_Mail <BLM_NM_LCDO_Mail@blm.gov>
Sent: Thursday, December 22, 2022 10:02 AM
To: Childress, William T <wchildre@blm.gov>
Subject: Fw: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Sir,

Do you have a plan on how to handle this or to whom it should be sent too to contact?

Bill Wight

From: Wessel, Richard, EMNRD <Richard.Wessel@emnrd.nm.gov>
Sent: Tuesday, December 6, 2022 10:15 PM
To: BLM_NM_LCDO_Mail <BLM_NM_LCDO_Mail@blm.gov>
Subject: [EXTERNAL] OSMRE Red Hill- Rincon Manganese Abandoned Mine Lands Safeguard NHPA compliance

Good afternoon Mr. Childress-

The New Mexico Abandoned Mine Land Program (AML), in partnership with the U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE), is conducting preliminary environmental studies Near Red Mountain in the Derry Mining District, Sierra County, New Mexico. Prior to safeguarding previous mine closures. As a federally funded program this proposed AML undertaking is subject to Section 106 (54 U.S.C. 306108) of the National Historic Preservation Act (NHPA) (54 U.S.C. 300101 et seq.) and its implementing regulations (36 CFR Part 800: Protection of Historic Properties, as revised August 2004). In so doing, we are requesting input from the Las Cruces Field Office (LCFO) regarding any concerns the LCFO might have with the project regarding the identification and treatment of historic properties.

We wish to invite you to be a consulting party to the project historic preservation efforts. Usually, Ms. Trinity Miller has represented the LCFO in such efforts, however protocol directs us to your office. The attached letter more fully describes this undertaking. A cultural resources inventory of the project area of potential effects is currently underway and, should the LCFO wish to participate, we will send you the report.

Thank you,

Rick Wessel
Cultural Resources Manager
EMNRD-MMD-Abandoned Mine Land Program
1220 S. St. Francis Dr., Santa Fe, NM 87505
richard.wessel@emnrd.nm.gov
Cell: 505.819.8856

Attachment 2c

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd Leahy, JD, PhD
Deputy Secretary

Albert Chang, Director
Mining and Minerals Division

June 14, 2023

Dr. Henry Walt
Tribal Historic Preservation Officer
Pueblo of Isleta
P.O. Box 1270
Isleta, NM 87022
(505) 869-9767
henryj@toast.net

RE: A Class III Cultural Resource Inventory of 862.21 Acres for the Abandoned Mine Land Red Hill Mine Safeguarding Project, Sierra County, New Mexico (NMCRIS 152175)

Dear Dr. Walt,

The New Mexico Abandoned Mine Land Program (AML), in partnership with the U.S. Department of the Interior (USDI), Office of Surface Mining Reclamation and Enforcement (OSMRE), is conducting preliminary environmental studies in preparation for a mine safeguarding project involving land managed by Las Cruces District Office of the USDI-Bureau of Land Management (BLM-LCDO) and the New Mexico State Land Office (SLO). The undertaking is near Red Hill Tank in the Caballo Mountains Mining District, Sierra County, New Mexico (Attachment 1). As a federally funded program this proposed AML undertaking is subject to Section 106 (54 U.S.C. 306108) of the National Historic Preservation Act (NHPA) (54 U.S.C. 300101 et seq.) and its implementing regulations (36 CFR Part 800: Protection of Historic Properties, as revised August 2004). The purpose of this letter is to make available for review a copy of the above referenced cultural resource inventory report in continued consultation between the AML and the Pueblo of Isleta as requested in your response dated May 6, 2022, to our initial consultation (Attachment 2).

The proposed project area lies along the western foothills of the Caballos Mountains in Sierra County, NM approximately 3 miles northeast of Derry, NM. The proposed safeguarding project is designed to protect the public from dangers associated with historical hard rock mining features such as adits, shafts, subsidence features, and other mine openings. The APE for these activities is encompassed within a ~796-acre block (Attachment 1) that consists of public lands managed by the BLM (~470-acres) and State Trust Land managed by the SLO (~326-acres).

As part of their preliminary studies, the EMNRD retained PaleoWest, LLC (PaleoWest), to perform a cultural resources inventory of the proposed project's area of potential effect (APE), and a full-coverage pedestrian survey was performed between September 22, 2022, and February 16, 2023.

During this investigation, PaleoWest documented 24 newly recorded sites (LA202364–LA202387) and eight HCPIs (HCPI53734–HCPI53741). Of the 24 newly recorded archaeological sites, 11 date to the prehistoric period, 10 date to the historic period, and three date to both the prehistoric and historic period. Eight HCPIs were recorded within the project area (Attachment 3). In addition to sites and the HCPIs, a total of 93 Isolated Occurrences (IOs) were encountered in the project area. Many of the documented features and IO's are associated with historic mining and the Caballo Mountains Mining District where the earliest recorded mineral production dates to 1918 but was primarily mined for manganese and fluorspar between 1940 through the 1980s. What remains of these activities are the abandoned mining features, and when an IO recordation is inadequate these manifestations are recorded as archaeological sites.

Native American occupation and use of the proposed project area preceded the mining activities discussed above. Evidence for Native American occupation and use of the area is recognized by 11 discrete archaeological sites displaying prehistoric materials indicative of human activity and by three multi-component sites with both Anglo/Euro American and Native American manifestations. Spatially, the Native American sites are located along the periphery of Green Canyon which runs through the north-central portion of the proposed project area. Only a few smaller sites are in the south half of the APE. In all but one instance (LA 202382), the temporal affiliation for the Native American sites is unknown and are represented by lithic artifact scatters lacking temporally diagnostic artifacts or other clearly definable temporal markers.

As mentioned above, LA 202382, is the only Native American site that displays material culture characteristic of a temporally distinct Native American lithic technology. The earliest occupation of LA 202382 occurred during the Late Archaic Period (1200 B.C. – A.D 200) and continued to be utilized through the Early Formative Period (A.D. 200 – A.D. 700). The remaining 13 Native American site components are indiscreet lithic scatters with an unknow temporal affiliation and could have been occupied anywhere between 9500 B.C. and A.D. 1880. Taken together Native American occupation and use of the project area appears transient in nature and suggest the repeated use of the project area for hunting and foraging.

Three sites with a Native American occupation component are superimposed by extensive Euro American materials related to the mining activities. One such site, LA 202383, will not be subject to safeguarding activities and will be avoided. However, a portion of two sites (LA 202368 and LA 202385) may potentially be affected by AML safeguarding efforts. In both instances, the Native American component primarily consists of an artifact concentration, each situated away from any dangerous mining features potentially requiring safeguarding. These artifact concentrations will be areas designated for avoidance within their respective site.

During the construction phase AML will treat all sites as eligible for listing in the NRHP and institute safeguarding methods that protect the informational integrity of these sites. AML proposes to avoid any remaining untreated mine related features outside the treatment areas with all equipment, vehicles, foot traffic, and any other ground surface disturbing activities during construction. Designated avoidance areas that extend up to 50 feet (15 meters) from cultural resources will be established prior to construction. When working near designated avoidance areas and where construction access routes pass next to these locations, high visibility barrier/indicators will be installed around the avoidance perimeter. The Contractor, AML Cultural Resource Manager/Archaeologist, and AML Project Manager shall cooperate fully with avoidance practices to preserve archaeological and historic artifacts found within the project area. Moving, removal, or collecting of archaeological or historic materials from the project area or vicinity is prohibited.

Lastly, if previously unidentified archaeological sites, deposits, or in situ artifacts are encountered, all operation in that immediate area shall be terminated (100-ft. radius, 30 meters) until the proper preservation agencies and Native American groups have been notified and offered the opportunity to assess the discovery site.

Based on the results of the CRM survey, we welcome any concerns or comments you may have pertaining to the project and continue to encourage your input in identifying issues of cultural importance to your tribe.

Please also feel free to contact us at (505) 490-7379 (Andrew.zink@emnrd.nm.gov), or at (505) 629-3757 (Lloyd.moiola@emnrd.nm.gov), respectively if you have any questions or need additional information.

Sincerely,

Andrew Zink
AMLP Cultural Resources Manager
EMNRD-MMD

Comments: _____

State of New Mexico
Energy, Minerals and Natural Resources Department

RECEIVED
MAY 26 2022
MINING & MINERALS DIVISION

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd Leahy, JD, PhD
Deputy Secretary

Jerry Schoeppner, Director
Mining and Minerals Division

27 April 2022

Dr. Dr. Henry Walt
Isleta Pueblo
P.O. Box 1270

Isleta Pueblo, NM 87022

RE: Historic preservation efforts for the **Red Hill Mine Safeguard Project** in the Caballo Mountains in Southern Sierra County, New Mexico.

Dear Dr. Dr. Henry Walt;

The New Mexico Abandoned Mine Land Program (AML), in partnership with the U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE), is conducting preliminary environmental studies Near Red Mountain in the Derry Mining District, Sierra County, New Mexico. Prior to safeguarding previous mine closures (Figure 1). As a federally funded program this proposed AML undertaking is subject to Section 106 (54 U.S.C. 306108) of the National Historic Preservation Act (NHPA) (54 U.S.C. 300101 et seq.) and its implementing regulations (36 CFR Part 800: Protection of Historic Properties, as revised August 2004). In so doing, we are requesting input from the <Tribe/Nation> regarding any concerns the tribe might have with the project regarding the identification and treatment of historic properties.

The proposed project area is located in Sierra County and is approximately 3 miles northwest of Derry, New Mexico (USGS Garfield and McLeod Tank 7.5' quadrangles, in Township 17 S, Range 4 W). The proposed Area of Potential Effect (APE) includes approximately 796 acres of land administered by the Bureau of Land Management (BLM) and State Land Office (SLO).

The proposed Red Hillproject is designed to help protect the general public from the hazards associated with abandoned mines by safeguarding shafts, adits, open trench areas, and other physical openings associated with the mining landscape. In general, AML safeguards mine features that are eight (8) feet or more in depth or length, which descend into the ground surface. AML safeguarding activities include a variety proposed methods such as mechanically or manually filling mine openings with surrounding waste material or polyurethane foam (PUF) and building structural barriers that restrict human access such as locking gates, cupolas, or other wildlife compatible closures. These safeguarding measures minimize exposure of hazardous abandoned mine openings to the general public, while also working to preserve cultural manifestations and wildlife habitat, if present.

Mining features filled with existing waste rock or PUF will remain visible as shallow depressions and residual waste rock material will be recontoured in place. In addition, mine openings with highly visible waste piles, particularly on steep slopes, will be closed by an alternate method (PUF

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3400 • Fax (505) 476-3402 • www.NMMines.com

or other structural closure), thereby leaving the viewshed of the mining landscape intact. Structural closures are typically be built on site to BLM Visual Resource Management specifications. Whenever possible, AML will use existing roads to access the features scheduled for closure.

During the construction phase AML proposes to avoid any remaining mine related features (structural foundations, artifact scatters, etc.) with all equipment, vehicles, foot traffic, and any other ground surface disturbing activities during construction. In addition, designated avoidance areas that extend up to 50 feet (15 meters) from cultural resources will be established prior to construction. When working near designated avoidance areas and where construction access routes pass next to these locations, high visibility barrier/indicators will be installed around the avoidance perimeter. The Contractor and AML Project Manager shall cooperate fully with avoidance practices to preserve archaeological and historic artifacts found within the project area. Moving, removal or collecting of archaeological or historic materials from the project area or vicinity is prohibited.

Lastly, if previously unidentified archaeological sites, deposits, or in situ artifacts are encountered, the AML Project Manager and Contractor shall terminate all operation in that immediate area (100 foot radius, 30 meters) until the proper preservation agencies and Native American groups have been notified and offered the opportunity to assess the discovery site.

AML is inviting Isleta Pueblo to participate the project as a consulting party aid us in identifying historic properties in the project APE and surrounds and in identifying potential project effects. Accordingly, please notify us of the Tribe's interest in becoming a consulting party for the. Should the Isleta Pueblo wish to participate, Cultural Resource investigation reports will be presented for your review as they are received.

Alternatively, if the Isleta Pueblo has no objections or proposed changes please return a signed copy of this correspondence to concur with AML determinations as presented. Along with tribal concurrence, the AML will forward copies of the final report and administrative documents to the SHPO for final review and concurrence.

If you would like additional information or have any questions, please feel free to contact me by email at richard.wessel@state.nm.us or by phone at 505-819-8856.

Thank you for your assistance in this project. We look forward to working with you and any tribal historic preservation representative on this project.

Sincerely,

Richard L. Wessel
AML Cultural Resources Manager

April 27, 2022
Page 3

☒ Yes, the Isleta Pueblo wishes to be a consulting party to the Red Mountain Mine Safeguard Project and would like to review and comment in the cultural resources inventory report

☐ The Isleta Pueblo does not have concerns with the proposed project and does not wish to be a consulting party unles conditions specified below are met.

[signature], THPO Date: 5/6/2022

Isleta Pueblo Reprenentative:

Comments/Conditions:

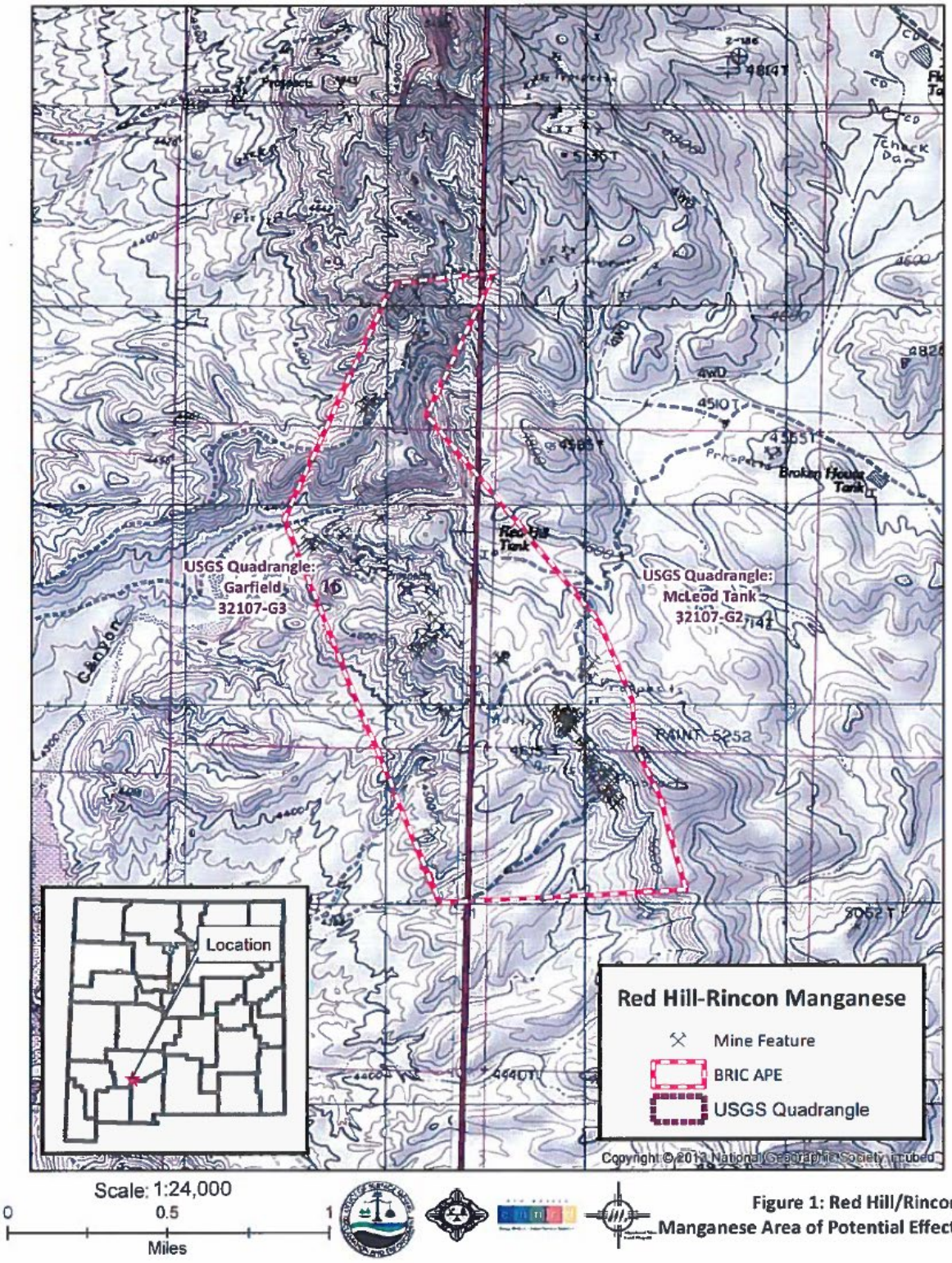


Figure 1: Red Hill/Rincon Manganese Area of Potential Effects

Attachment 3

Typical AML Closures

Structures can be modified to accommodate any potential visual resources issues to make them less obtrusive on the landscape.

Closeup of typical weathered steel picket fence.

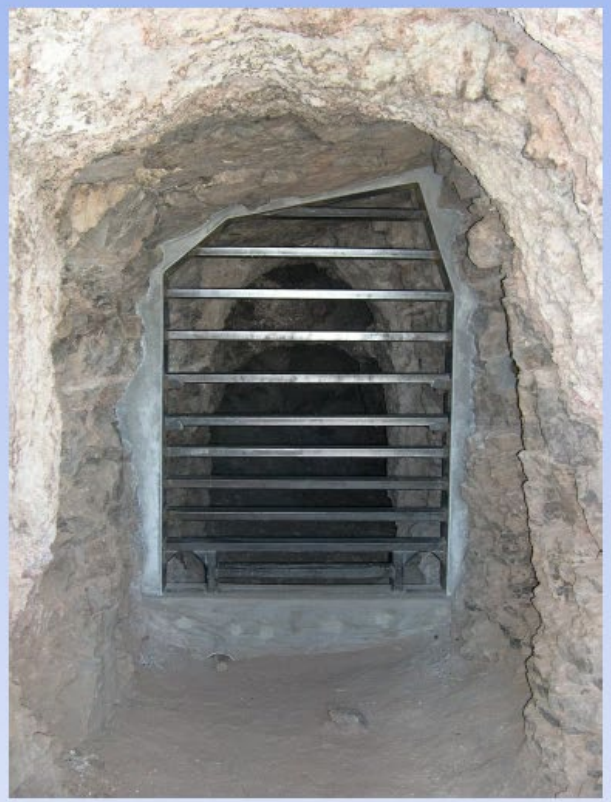
Weathered steel picket fence enclosure around a partially filled shallow shaft (Cerrillos Hills State Park)

Typical AML Closures

Bat cupola – stepped into hillside for a less visually obtrusive feature.

Rock bulk-headed culvert with bat-friendly gate. Cemented rocks assist with blending into landscape

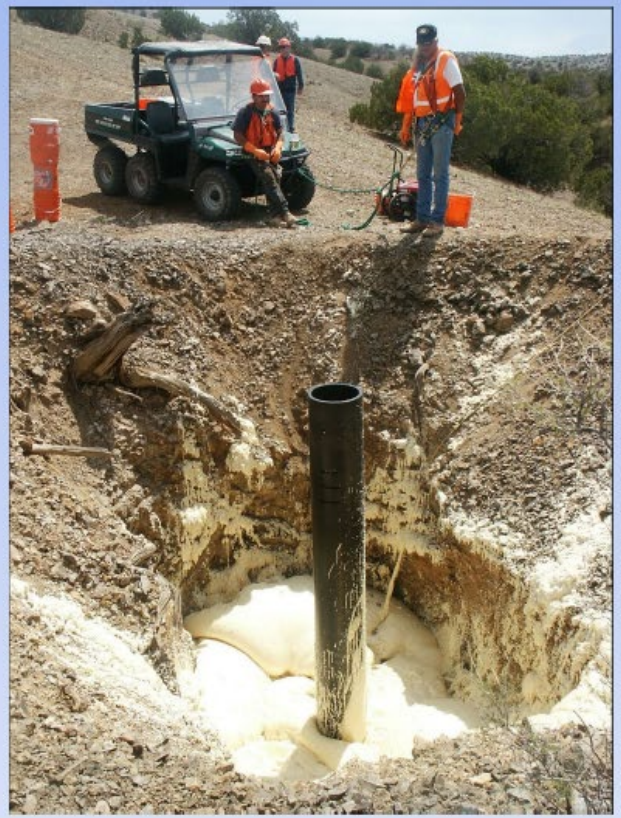
Typical AML Closures



Bat and wildlife friendly gate enclosure

Culvert with bat and wildlife-friendly gate

Typical AML Closures



Polyurethane foam plug with a drain pipe (Cerrillos Hills State Park)

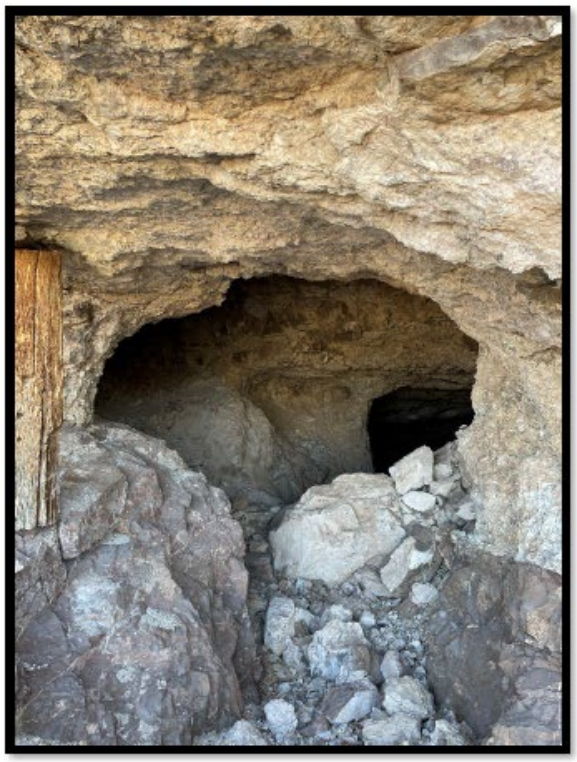
A complete polyurethane foam closure with beehive grate and concrete collar

Typical AML Closures

Installation of high-strength steel mesh with rock anchors. Note the partially completed bridge abutments on two sides of the shaft opening.

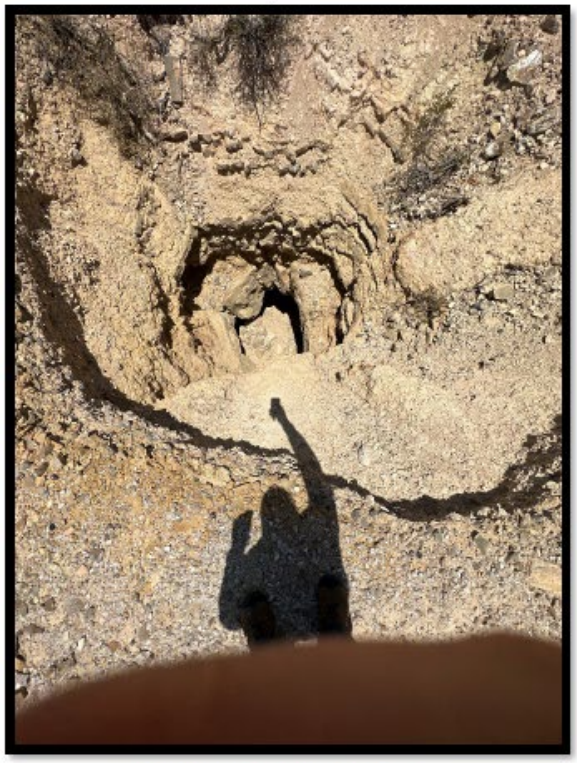
The completed mesh and bridge installation over a shaft (Cerrillos Hills State Park)

Attachment 4: Feature Photo Examples from LA 202365

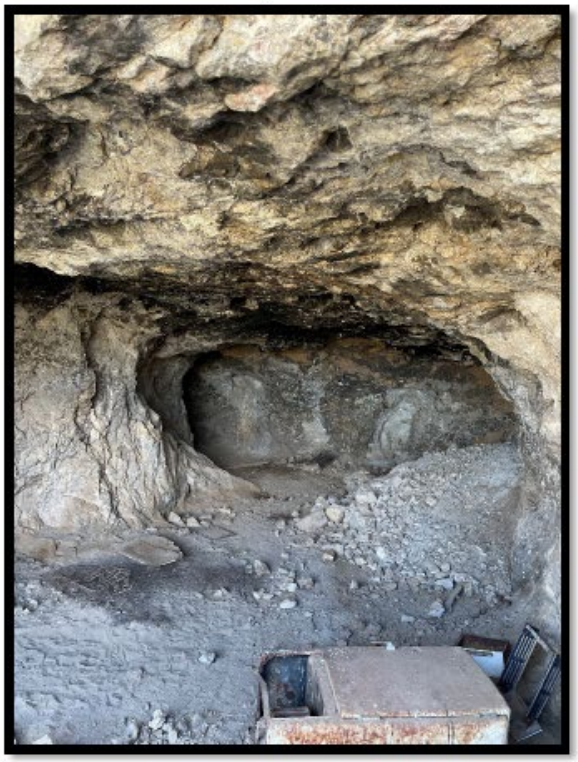


Feature 14, LA 202365

Feature 24, LA 202365



Feature 25, LA 202365



Feature 44.1, LA 202365

NMDFW Consultation

GOVERNOR
Michelle Lujan Grisham

DIRECTOR AND SECRETARY
TO THE COMMISSION
Michael B. Sloane

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way, Santa Fe, NM 87507

Tel: (505) 476-8000 | Fax: (505) 476-8180

For information call: (888) 248-6866

www.wildlife.state.nm.us

STATE GAME COMMISSION

TIRZIO J. LOPEZ
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Los Ranchos

SHARON SALAZAR HICKEY
Santa Fe

13 September 2023

James Hollen, NEPA Coordinator
New Mexico Abandoned Mine Land Program (AML)
Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Red Hill Mine Safeguarding Project, Draft Environmental Assessment, Sierra County, New Mexico. NMDGF Project No. NMERT-2740.

Dear Mr. Hollen,

The New Mexico Department of Game and Fish (Department) has reviewed the above referenced project. The New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division, Abandoned Mine Land Program (AML), in cooperation with the U.S. Department of Interior, Office of Surface Mining Reclamation and Enforcement, is proposing to mitigate impacts from historical mining within the boundaries of the Red Hill Mine Safeguarding Project Area (Area) in the Caballo Mountains, Rincon Mining District. AML estimates that there are 52 low risk, 13 medium risk, 12 high risk, and 8 extreme risk mine features within the proposed Area. BRIC, LLC (BRIC) submitted a Draft Biological Assessment (BA) for the project area in 2023. In 2014, Bat Conservation International (BCI) conducted abandoned mine surveys in the Area to identify bat habitat. AML has contracted BCI to conduct additional surveys to update bat habitat data prior to project implementation to identify where bat gate installation is warranted. Staff from the Department and AML conducted a site inspection on 23 August 2023.

The Department concurs with the Mitigation/Avoidance recommendations in the BA and provides the following, more specific, recommendations for protecting migratory birds and post-project reseeding of the areas proposed for reclamation:

- To minimize the likelihood of adverse impacts to migratory bird nests, eggs, or nestlings during project construction activities, the Department recommends that ground disturbance and vegetation removal activities be conducted outside of the primary breeding season. That season for migratory songbirds and most raptors is 1 March – 1 September; for golden eagle and great horned owl it is 1 January – 15 July. If ground disturbing and clearing activities must be conducted during the breeding season, the area should be surveyed for active nest sites (with birds or eggs present in the nesting territory) and avoid disturbing active nests until young have fledged. For active nests, establish adequate buffer zones to minimize disturbance to nesting birds. Buffer distances should be a minimum of 100 feet from songbird and raven nests; 0.25 miles from most raptor nests; and 0.5 miles for ferruginous hawk, golden eagle, peregrine

falcon, and prairie falcon nests. Active nest sites in trees or shrubs that must be removed should be mitigated by qualified biologists or wildlife rehabilitators. Department biologists are available to consult on nest site mitigation and can facilitate contact with qualified personnel.

- For post-construction reclamation of the disturbed sites, the Department recommends that AML use only native plant species and that the reclamation seed mix is designed to enhance local pollinator habitat. The Department also recommends that only certified weed-free seed be used to avoid inadvertently introducing non-native species to the reclamation site. Any alternate seeds used to substitute for primary plant species that are unavailable at the time of reclamation should also be native. When possible, the Department recommends using seeds that are sourced from the same region and habitat type as the reclamation site or from a region that represents potential future climatic conditions at the site.

Department staff observed an eastern black-tailed rattlesnake and Townsend's big-eared bat during the August, 2023 site inspection. Staff also observed tracks and/or scat from cougar, bear, and desert bighorn sheep. Mine feature 22-01 is an adit that has a large, cave-like entrance where bighorn sheep tracks were observed. The adit tapers down to a narrow passageway where the Townsend's big-eared bat was observed. The cave-like area appears to be frequented by large mammals, providing shelter and a refuge from the summer heat and adverse weather. The Department recommends recessing bat gating at this site back to where the adit narrows, so that wildlife can continue to access this cave-like area.

Thank you for the opportunity to review and comment on the proposed mine safeguarding project. If you have any questions, please contact Ron Kellermueller, Mining and Energy Habitat Specialist, at (505) 270-6612 or ronald.kellermueller@dgf.nm.gov.

Sincerely,

Matt Wunder, Ph.D. Digitally signed by Matt Wunder, Ph.D.
Date: 2023.09.13 09:10:09 -06'00'

Matt Wunder, Ph.D.
Chief, Ecological and Environmental Planning Division
cc: USFWS NMES Field Office

New Mexico State Land Office

From: Rose, Kyle M. <krose@slo.state.nm.us>
Sent: Monday, December 4, 2023 2:36 PM
To: Hollen, James, EMNRD <james.hollen@emnrd.nm.gov>; Adamczyk, Katrina D. <kadamczyk@slo.state.nm.us>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Subject: [EXTERNAL] RE: Requests Review and Comment - Draft EA Red Hill Mine Safeguarding Project

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good afternoon,

Thank you for reaching to NMSLO for comments regarding the Red Hills EA. Please see attached for a PDF with comments. If you need this in a different format, as I mentioned in an email last week, please just let me know and I can do that. I didn't want to miss this deadline, so I'm sending you this PDF.

We did not have many comments and no major concerns, but we hope these comments are helpful.

Have a great day and thank you all for the great work you are doing on state trust land.

Sincerely,

Kyle Rose, PhD
Assistant Director of Stewardship
Surface Resources Division
Office: 505.827.3827
Cell: 505.490.5704
New Mexico State Land Office
310 Old Santa Fe Trail
P.O. Box 1148
Santa Fe, NM 87504-1148
krose@slo.state.nm.us
nmstatelands.org

From: Hollen, James, EMNRD <james.hollen@emnrd.nm.gov>
Sent: Friday, October 20, 2023 9:26 AM
To: Rose, Kyle M. <krose@slo.state.nm.us>; Adamczyk, Katrina D. <kadamczyk@slo.state.nm.us>
Cc: Moiola, Lloyd, EMNRD <lloyd.moiola@emnrd.nm.gov>; Peralta, Matthew, EMNRD <Matthew.Peralta@emnrd.nm.gov>; Zink, Andrew, EMNRD <Andrew.Zink@emnrd.nm.gov>
Subject: [EXTERNAL] Requests Review and Comment - Draft EA Red Hill Mine Safeguarding Project

October 20, 2023

Via email: krose@slo.state.nm.us

Kyle Rose, PhD
Assistant Director of Stewardship – Surface Resources Division
New Mexico State Land Office
310 Old Santa Fe Trail

Santa Fe, NM 87501

Dr. Rose,

The New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division, Abandoned Mine Land (AML) Program, in cooperation with the US Department of Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE), is planning to mitigate impacts from historical mining within the boundaries of the Red Hill Mine Safeguarding Project Area in the Caballo Mountains/Rincon Mining District. The proposed project area is located in Sierra County and is approximately 3 miles northwest of Derry, New Mexico (USGS Garfield and McLeod Tank 7.5' quadrangles, in Township 17 S, Range 4 W). The proposed Area of Potential Effect (APE) includes approximately 796 total acres of land administered by the Bureau of Land Management (BLM) and State Land Office (SLO).

Based on recent BLM inventory data, the AML Program estimates there are 52 low risk, 13 medium risk, 12 high risk and 8 extreme risk mines within the proposed APE. The Proposed Action involves safeguarding measures utilizing a variety of methods, including manually or mechanically filling mine openings with surrounding waste material or polyurethane foam, and building structural barriers that restrict human ingress, such as locking gates, cupolas, high-tensile steel mesh coverings, gated culverts, or other wildlife-compatible closures while limiting disturbance to other resources on adjacent county, federal and private lands.

Throughout the past 40 years, the OSMRE and AML have addressed public safety and environmental concerns associated with the open abandoned mine adits and shafts throughout New Mexico. As a federally funded program this proposed AML project constitutes an undertaking subject to review under NEPA. Under the Proposed Action, the OSMRE would approve a Federal Grant for use by the state of New Mexico in implementing the Proposed Action. Based on our draft EA and the proposed construction, the AML Program finds that remediation activities proposed for the Red Hill Mine Safeguarding Project will not have significant effects on the quality of the human or natural environment, and proposed construction for the Red Hill Project is estimated to start Spring, 2024.

AML is in the process of coordinating a public meeting, date to be determined; however, the public meeting will likely take place in Truth or Consequences within the next couple of months. A draft Environmental Assessment (EA) has been completed, including a Biological Analysis and Evaluation in addition to a report from Bat Conservation International documenting bat use and habitat of the abandoned mine features within the project area. The AML Program is aware of bat activity and the presence of bats in many of the mine features within the project area and plans to install gated, bat-friendly closures where applicable. The EA and its supporting documents are available for your review via the following link:

https://fs.emnrd.nm.gov/portal/s/0512837483408558268

AML requests that you review the draft EA and provide any comments you may have by December 4, 2023.

Please contact me at (505) 231-8332 or via email at: james.hollen@emnrd.nm.gov with any problems accessing the documents, questions or comments you may have regarding the project or this request.

Sincerely,

James Hollen <> NEPA Coordinator
New Mexico Abandoned Mine Land Program
Energy, Minerals & Natural Resources Department <> Mining & Minerals Division
1220 South St. Francis Drive <> Santa Fe, NM 87505
Cell: 505-231-8332 <> Email: james.hollen@emnrd.nm.gov
Web: www.emnrd.nm.gov

Cc via email:
Lloyd Moiola, AML Environmental Manager lloyd.moiola@emnrd.nm.gov
Andrew Zink, AML Cultural Resources Manager andrew.zink@emnrd.nm.gov
Matthew Peralta, AML Project Manager matthew.peralta@emnrd.nm.gov

BLM Carlsbad Field Office

From: Hollen, James, EMNRD
To: dwallace@blm.gov
Cc: cteske@blm.gov; Moiola, Lloyd, EMNRD; Zink, Andrew, EMNRD; Peralta, Matthew, EMNRD
Subject: Requests Review and Comment - Draft EA Red Hill Mine Safeguarding Project
Date: Thursday, October 5, 2023 11:45:00 AM

October 5, 2023

Via email: dwallace@blm.gov

David Wallace
District Manager (acting)
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

Dear Mr. Wallace,

The New Mexico Energy, Minerals and Natural Resources Department, Mining and Minerals Division, Abandoned Mine Land (AML) Program, in cooperation with the US Department of Interior, Bureau of Land Reclamation (BLM) Office of Surface Mining Reclamation and Enforcement (OSMRE), is planning to mitigate impacts from historical mining within the boundaries of the Red Hill Mine Safeguarding Project Area in the Caballo Mountains/Rincon Mining District. The proposed project area is located in Sierra County and is approximately 3 miles northwest of Derry, New Mexico (USGS Garfield and McLeod Tank 7.5' quadrangles, in Township 17 S, Range 4 W). The proposed Area of Potential Effect (APE) includes approximately 796 total acres of land administered by the Bureau of Land Management (BLM) and State Land Office (SLO).

Based on recent BLM inventory data, the AML Program estimates there are 52 low risk, 13 medium risk, 12 high risk and 8 extreme risk mines within the proposed APE. The Proposed Action involves safeguarding measures utilizing a variety of methods, including manually or mechanically filling mine openings with surrounding waste material or polyurethane foam, and building structural barriers that restrict human ingress, such as locking gates, cupolas, high-tensile steel mesh coverings, gated culverts, or other wildlife-compatible closures while limiting disturbance to other resources on adjacent county, federal and private lands.

Throughout the past 40 years, OSMRE, the BLM and AML have addressed public safety and environmental concerns associated with the open abandoned mine adits and shafts throughout New Mexico. As a federally funded program this proposed AML project constitutes an undertaking subject to review under NEPA. Under the Proposed Action, the OSMRE would approve a Federal Grant for use by the state of New Mexico in implementing the Proposed Action. Based on our draft EA and the proposed construction, the AML Program finds that remediation activities proposed for the Red Hill Mine Safeguarding Project will not have significant effects on the quality of the human or natural environment, and proposed construction for the Red Hill Project is estimated to start Spring, 2024.

AML is in the process of coordinating a public meeting, date yet to be determined; however, the public meeting will likely take place in Truth or Consequences within the next couple of months before the end of the year. To date, the AML Program has consulted with the BLM LCDO Archaeologist and has recd. concurrence from both SHPO and the SLO regarding site eligibility recommendations and overall disposition of the cultural resources. A draft Environmental Assessment (EA) has been completed, including a Biological Analysis and Evaluation and a Paleontological Assessment, in addition to a report from Bat Conservation International documenting bat use and habitat of the abandoned mine features within the project area. The AML Program is aware of bat activity and the presence of bats in many of the mine features within the project area and plans to install gated, bat-friendly closures where applicable. Also, AML has an updated bat habitat survey report underway with our consultant (Bat Conservation International) that is scheduled to be completed in the coming weeks documenting the updated conditions observed in the project area.

The EA and other critical supporting documents are available for your review via the following link:

https://fs.emnrd.nm.gov/portal/s/0512837483408558268

AML requests that you review the draft EA and provide any comments you may have by November 17, 2023.

Please contact me at (505) 231-8332 or via email at: james.hollen@emnrd.nm.gov with any problems accessing the documents, questions or comments you may have regarding the project or this request.

Sincerely,

James Hollen <> NEPA Coordinator
New Mexico Abandoned Mine Land Program
Energy, Minerals & Natural Resources Department <> Mining & Minerals Division
1220 South St. Francis Drive <> Santa Fe, NM 87505
Cell: 505-231-8332 <> Email: james.hollen@emnrd.nm.gov
Web: www.emnrd.nm.gov

Cc via email:
Lloyd Moiola, AML Environmental Manager lloyd.moiola@emnrd.nm.gov
Andrew Zink, AML Cultural Resources Manager andrew.zink@emnrd.nm.gov
Matthew Peralta, AML Project Manager matthew.peralta@emnrd.nm.gov