A CULTURAL RESOURCE SURVEY FOR PROPOSED EXPLORATORY DRILL HOLES AND NEW ACCESS ROADS FOR THE SUGAR LOAF MINERAL EXPLORATION PROJECT, GILA NATIONAL FOREST-SILVER CITY DISTRICT, GRANT COUNTY, NEW MEXICO

PREPARED FOR
Great Basin Resources

PREPARED BY
Okun Consulting Solutions

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Okun Consulting Solutions

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Survey Conducted Under
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ABSTRACT

Great Basin Resources proposes to drill 12 exploratory holes and develop new associated access roads for the Sugar Loaf Mineral Exploration Project within Gila National Forest (Gila NF)—Silver City District lands in Grant County, New Mexico. The project area is located within the Big Burro Mountains, approximately 12 miles southwest of Silver City. It will be privately funded by Great Basin Resources and will take place on Gila NF-Silver City District lands managed by the USDA National Forest Service. Great Basin Resources will use existing forest roads (FRs), including FR 851, FR 852, and FR 136, to access the area. The total length of new access roads will be 0.68 miles divided among three different segments, each of which will access one or more drill hole sites. At each drill hole, ground disturbance will be limited to a small pad/footprint area defined by Great Basin Resources. A polygon described as a "Laydown Area" located along the existing access road will be used for staging. Per consultation with Gila NF heritage resource personnel, the area of potential effects (APE) was defined as a 100-ft-wide corridor along the new access roads and blocks extending 50 ft beyond the defined polygon for the staging area and 12 drill hole locations.

One previously documented archaeological site (AR 03-06-0669/LA 167143) and five isolated occurrences (IOs) were documented during 100-percent pedestrian survey of the APE. By definition, the five IOs lack additional data potential and are not likely to increase our understanding of local or regional history or prehistory. No further management considerations are warranted for these resources.

No evidence of a previous eligibility determination is available for AR 03-06-07-0669/LA 167143. The site contains a suite of mining features and modern artifacts dating to the 1970s and 1980s. It was not a location of long-term residence and is very unlikely to contain subsurface cultural deposits with the potential to provide significant information relating to specific research themes that could not be better obtained from other sources. General information that the site can produce has already been obtained during this thorough field recording. The mining features do not exhibit unique engineering or design characteristics and are not good examples of any specific method of construction. Furthermore, the site is unassociated with historic events or processes significant at the local, state, or national level, and even if such association could be demonstrated, the site lacks the integrity to visually convey this association because the associated mining equipment and infrastructure have been removed. The site is therefore recommended as not eligible for listing on the National Register of Historic Places (NRHP). No further management considerations are warranted for this resource.

Subject to agency consultation and comment, the proposed undertaking would have *no effect* on any historic property listed, or eligible for listing, on the NRHP. However, if buried cultural deposits are discovered during project activities, work should cease, and the Gila NF shall be notified immediately. This undertaking complies with the provisions of the NHPA of 1966, as amended through 1992, the New Mexico Cultural Properties Act (18-6-1 through 18-6-17 New Mexico Statutes Annotated 1978), and any other applicable cultural resource rules or regulations. The project was completed in accordance with the *USDA-Forest Service Region 3 Cultural Resources Handbook*, the *Forest Service Region 3 First Amended Programmatic Agreement*, and *§4.10.15 NMAC*. This report is consistent with federal and state standards for cultural resource management.

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CHAPTER 1

INTRODUCTION AND PROJECT DESCRIPTION

Great Basin Resources proposes to drill 12 exploratory holes and develop new associated access roads for the Sugar Loaf Mineral Exploration Project within Gila National Forest (Gila NF)—Silver City District lands in Grant County, New Mexico. The project area is located within the Big Burro Mountains, approximately 12 miles southwest of Silver City (Figure 1). It will be privately funded by Great Basin Resources and will take place on Gila NF-Silver City District lands managed by the USDA National Forest Service. Great Basin Resources will use existing forest roads (FRs), including FR 851, FR 852, and FR 136, to access the area. The total length of new access roads will be 0.68 miles (3,597 feet [ft]) divided among three different segments, each of which will access one or more drill hole sites (Figures 2 and 3). At each drill hole, ground disturbance will be limited to a small pad/footprint area defined by Great Basin Resources. A polygon described as a "Laydown Area" located along the existing access road will be used for staging.

Because the proposed project has the potential to adversely affect cultural resources and will take place on federal lands, it is defined as an undertaking under Section 106 of the National Historic Preservation Act of 1966 (NHPA; 54 U.S.C. §306108) and its implementing regulations (36 CFR Part 800). The NHPA obligates the lead federal agency (USDA Forest Service) to consider the effects a proposed undertaking may have on historic properties as defined under this legislation. To satisfy these guidelines, Okun Consulting Solutions (OCS) performed a 100-percent pedestrian (Class III) cultural resource survey of the Area of Potential Effect (APE) defined for the project. The purpose of this investigation was to identify and evaluate all cultural resources within the APE, including historic districts, archaeological sites, and historic built environment resources over 50 years in age. All discovered resources were evaluated for their eligibility to the National Register of Historic Places (NRHP).

Per consultation with Gila NF heritage resource personnel, the APE/survey area was defined as a 100-ft-wide corridor along the new access roads and blocks extending 50 ft beyond the defined polygon for the staging area and 12 drill hole locations. In addition, we have chosen to include 1.09 miles of existing roads connecting some of the drill locations in the survey area out of due diligence, as it is possible that road maintenance or improvements will be required in these areas (the same 100 ft survey width was used along these roads). The broader access to the project area was not surveyed, as these are existing and actively used Forest Roads, and they have also been inventoried for cultural resources during past projects. Including all buffers, the survey area/APE is 21.9 acres (8.9 hectares) in total size. The project area is located within Section 18 of Township 19 South, Range 15 West and is depicted on the *Wind Mountain* (32108-F4) United States Geological Survey (USGS), 7.5-minute quadrangle map (see Figure 2).

The cultural resource survey was completed by OCS archaeologists between April 26 and 29, 2023. Adam Okun served as the project manager and principal investigator. Timothy Schoonover served as the Field Supervisor. The investigation was assigned New Mexico Cultural Resource Information System (NMCRIS) Number (No.) 153016 and Forest Service Report No. 2023-06-025. Survey and heritage resource documentation were conducted in accordance with the guidelines provided in the NHPA and its implementing rules, the *USDA-Forest Service Region 3 Cultural Resources Handbook*, the *Forest Service Region 3 First Amended Programmatic Agreement (PA)*, and State of New Mexico, Office of Cultural Affairs, Historic Preservation Division (HPD) guidelines and standards, as outlined in the New Mexico Administrative Code (NMAC) and the NMCRIS *User's Guide to The New Mexico Cultural Resource Information System: Guidelines for Submitting Cultural Resource Records*.

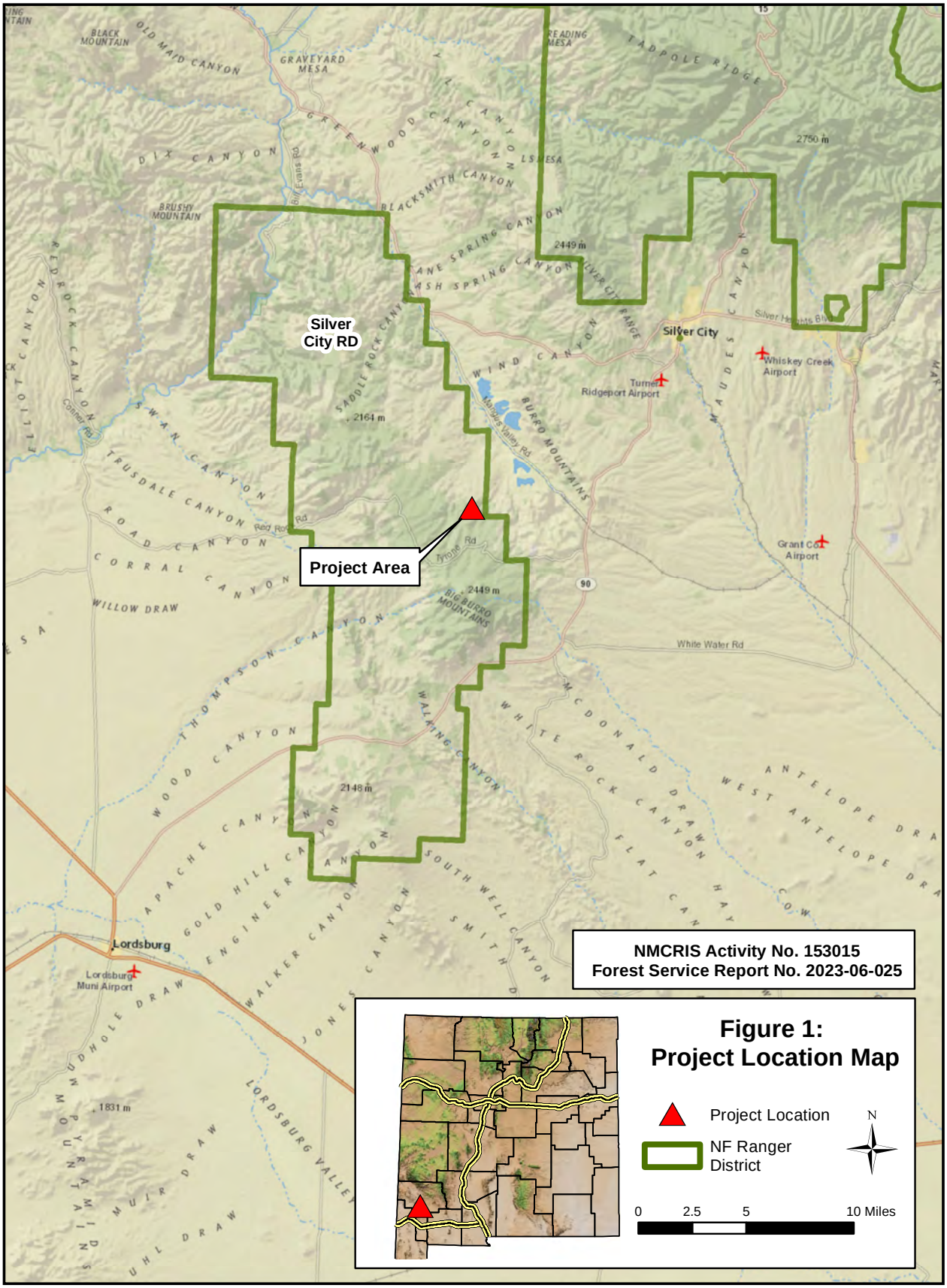

Figure 1. Project Location Map

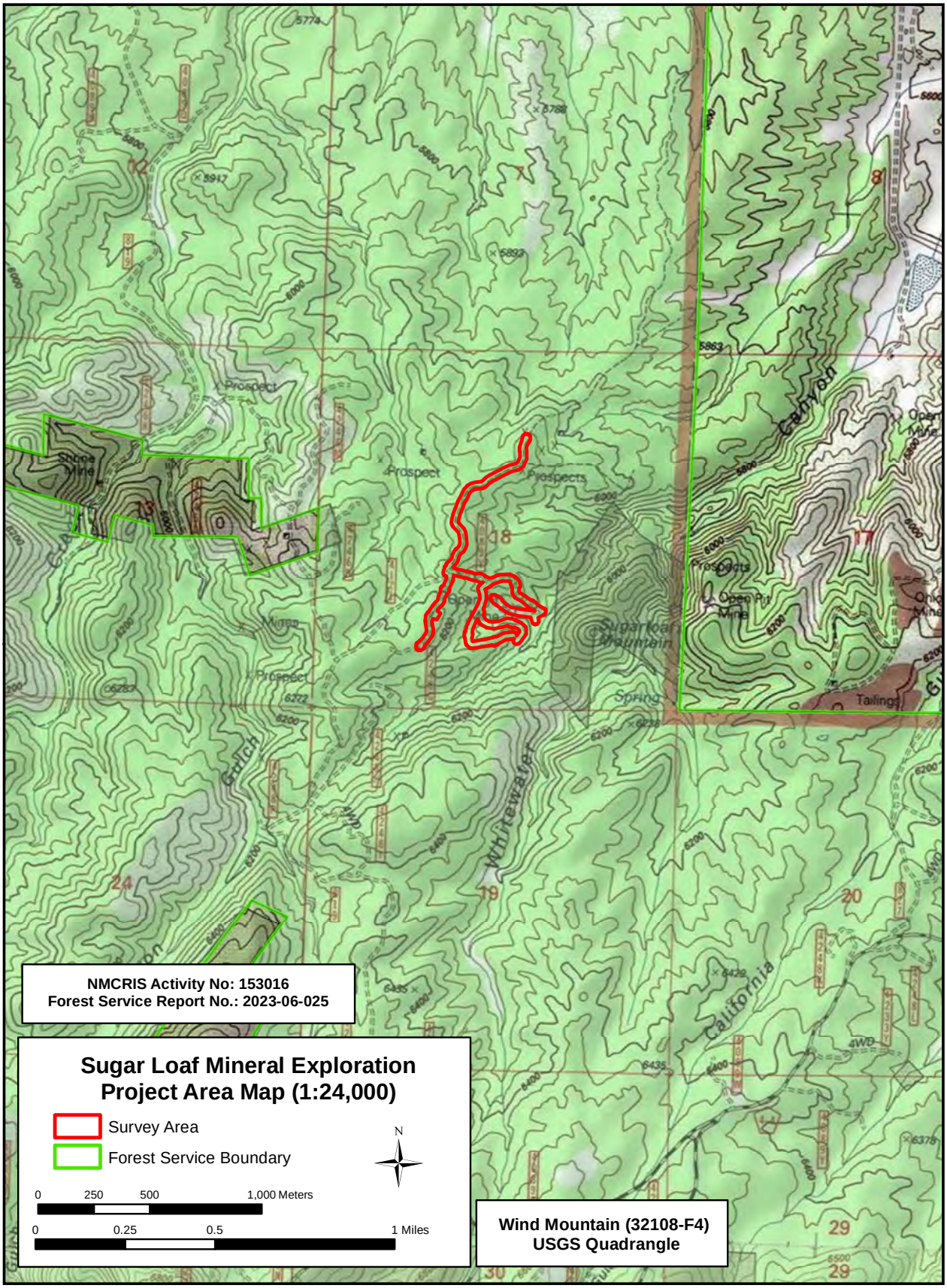

Figure 2. Project Area Map on USGS Quadrangle (1:24:000)

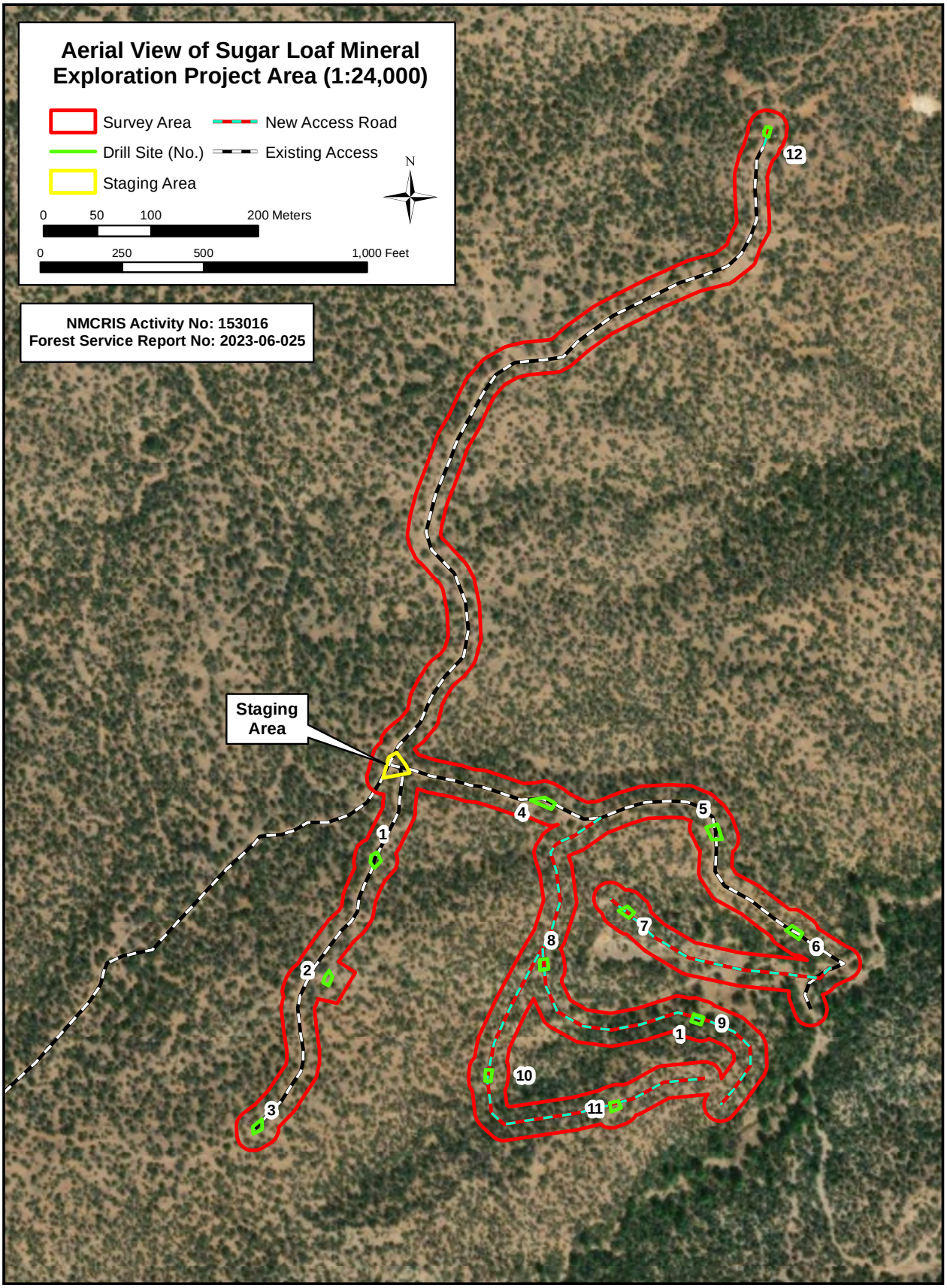

Figure 3. Aerial View of Project Area Showing Proposed Project Elements

CHAPTER 2

ENVIRONMENTAL SETTING

The project area is located on the northeastern side of the Big Burro Mountains, near Sugar Loaf Mountain, approximately 12 miles southwest of Silver City. The area is characterized by a series of low northeast-southwest oriented ridges with short, steep slopes that lead into narrow northeast-flowing drainages. Elevation ranges from a minimum of 5,980 ft above mean sea level (amsl) at the eastern ends of the new access roads to a maximum of 6,250 ft along the existing road to the southwest. The existing access roads are lightly-maintained routes in varying conditions (Photograph 1). Some of the proposed new access routes contain faint two-tracks or unmaintained, user-generated roads (Photograph 2), while other segments currently do not contain a road. Proposed exploratory drill sites are currently undeveloped. Sugarloaf Mountain (6,280 ft) is located just to the east and is the most prominent small peak near the project area, dominating the viewshed to the east (Photograph 3). Some project segments are densely forested, while other areas provide open views of the surrounding landmarks, including the Tyrone Mine to the northeast (Photograph 4).

The Big Burro Mountains are a northwest-to-southeast trending mountain range that is bordered by the Mangas Valley to the northeast and the Lordsburg Valley and Lordsburg Mesa to the southwest. Mangas Creek is a perennial stream that flows northwest into the Gila River and separates the isolated Big Burro Mountains from the larger Mogollon Mountains and other parts of the Gila NF. More broadly, the Big Burro Mountains are at the southern edge of the Mogollon-Datil Section of the Basin and Range Physiographic Province (Kelley 2023). To the north is the Mogollon-Datil volcanic field, which includes the Gila Watershed and separates the Colorado Plateau from the Basin and Range province. This is a mountainous area of volcanic highlands containing large structural basins and block-faulted ranges (Hawley 1986). To the south, the Mexican Highland Section of the Basin and Range Province contains lower terrain consisting of basin-floor depressions separated by north-south trending uplifted mountain ranges dominated by sedimentary rock types.

The geologic history of the Big Burro Mountains is well-studied due to the presence of porphyry copper deposits and a history of mining. During the late Jurassic to Early Cretaceous, the Big Burro Mountains were a highland on the flank of a northwest-trending Bisbee Basin. The Upper Cretaceous rocks (90-105 million years ago) preserve a history of the oscillating landward-seaward shoreline migration of an inland sea (the Western Interior Seaway) within the basin. Between 70 and 40 million years ago, a period of magmatic intrusion and deformation began due to the rapid eastward migration of the Farallon plate beneath the North American plate, a period that produced mountain ranges across the American West. In southwestern New Mexico, Laramide compression of the crust resulted in the formation of northwest-trending mountain ranges (Kelley 2023). Between 57 and 53 million years ago, the Cretaceous and older rocks of the Big Burro Mountains experienced magmatic intrusions that formed the quartz monzonite porphyry known as the Tyrone Stock. Faults developed that uplifted a central block in the Big Burro Mountains (the Tyrone-Burro Peak Block), bringing mineralized rocks to the surface and creating a zone of enriched copper mineralization between 47 and 44 million years ago (Kelley 2023).

Between 45 and 24 million years ago, violent caldera-forming eruptions occurred in the Mogollon-Datil volcanic field. The Big Burro Mountains were covered in tuffs and lava flows, resulting in a second period of mineralization in the region, this time depositing fluorite, gold, and uranium. During the Miocene (between 23 and 2.3 million years ago), volcanic deposits were eroded from the mountains and deposited in the Gila Conglomerate in nearby valleys, leading to a second phase of mineral enrichment 19 million

years ago. The numerous mines in the area are part of the Burros Mountains Mining District (mrdata.usgs.gov). Small operations located within 1 mile or less of the project area include the Beaumont Shaft to the west, the Bolton Mine to the southwest, and the National Copper Mine to the east (mindat.org/feature-5482298.html). Major open pit mines include the Ohio Mine (0.8 miles to the east) and the Tyrone Mine (2.0 miles to the east). These mines and the current project area are located within the zone of uplift known as the Tyrone-Burro Block that contains the economically important Tyrone Stock with supergene-enriched copper mineralization.

According to the Natural Resource Conservation Service (NRCS) Web Soil Survey website, nearly the entire project area (99 percent) contains Lithic Haplustolls with minor components of Loamy-Skeletal, mixed, mesic-lithic soils. Lithic Haplustoll soils are shallow, well-drained, and found on 15 to 40 percent mountain slopes (NRCS 2023). The soil profile includes gravelly sandy clay loams (0-6 inches) and clay (6-12 inches), with bedrock typically reached at 12 to 16 inches below ground surface. The parent material is mixed alluvium and/or colluvium that is derived from igneous, metamorphic, and sedimentary rock.

According to Griffith et al. (2006), the project area is within the Madrean Lower Montane Woodlands, which stretch south of the Silver City area. This ecoregion contains evergreen woodlands and shrublands, with typical vegetation including Mexican piñon pine, one-seed juniper, alligator juniper, gray oak, Gambel oak, Emory oak, manzanita, mixed grama grasses, and three-awn grasses. Surface visibility within the project area ranges from 25 to 75 percent, with surface exposures most common in erosional areas on colluvial slopes and along roads or trails with sparse vegetation.

Southwestern New Mexico has a semiarid continental climate, characterized by high temperatures and high degrees of seasonal and topographic variation. The mean annual precipitation at the Silver City weather station is 16.0 inches (Table 1) (Western Regional Climate Center [WRCC] 2023). Precipitation is highest during winter and summer periods, with summer moisture coming in the form of monsoonal thunderstorms and winter moisture in the form of snowfall. During the summer, moisture originating in the Gulf of Mexico produces intense convectional storms that deliver heavy but localized and sporadic rainfall. More than 6 inches of rainfall (over one third of annual precipitation) occurs in July and August during these monsoon storms. Temperatures in the area range from lows of around 24 degrees Fahrenheit (F) in the winter months to highs of 87 degrees (F) during the summer.

Table 1. Monthly Historical Climate Data for Silver City, New Mexico (WRCC 2023)

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual
Average Maximum Temp	50.8	54.6	58.8	68.1	77.2	86.8	87.5	85.4	81.2	71.2	59.3	51.4	69.4
Average Minimum Temp	23.9	25.8	30.2	36.9	44.8	54.2	59.5	57.8	51.6	41.6	30.1	24.9	40.1
Total Precipitation (inches)	1.05	1.15	0.96	0.58	0.36	0.69	3.03	3.00	1.92	1.27	0.75	1.24	16.02
Total Snowfall (inches)	3.5	3.8	1.5	1.0	0	0	0	0	0	0	07	4.1	14.5

Photograph 1. Existing Access Road at Southwestern Corner of Project Area

Photograph 2. Example of Faint Two-track Road that will be Improved (Access Road 4)

Photograph 3. View to the East along a Proposed Access Road with Sugar Loaf Mountain in Background

Photograph 4. View of the Tyrone Mine from the Project Area

CHAPTER 3

CULTURE HISTORY

The culture history of southwestern New Mexico extends back for at least 11,000 years and is typically divided into five broad cultural periods: Paleoindian, Archaic, Mogollon, Protohistoric, and Historic. These periods are distinguished on the basis of changing settlement patterns, subsistence strategies, technology, social structure, and cultural/ethnic affiliations. However, the only resource documented during this project is a twentieth century mining site, and the following discussion is therefore restricted to the historic period and the development of mining communities in southwestern New Mexico.

SPANISH COLONIAL AND MEXICAN PERIODS

The first European contact with the indigenous inhabitants of the Southwest occurred during the Spanish expedition led by Coronado in AD 1540 and continued with additional expeditions in the late 1500s, followed by the establishment of the New Mexico Colony at Santa Fe and in the Northern Rio Grande region. Following the Pueblo Revolt of 1680 and subsequent reconquest, the goal of the Spanish shifted to securing the New Mexico colony rather than extracting wealth, and this shift required a larger settlement population and establishment of self-sufficient communities. The survival of the colony, then, was tied to the success and self-sufficiency of small agrarian communities and ranches along the Rio Grande Valley. New Mexico became a region of small Hispanic communities and pueblos, held together by the land grant system and the need for common defense (Wozniak 1998). During the 1700s, Spanish settlement spread to the Albuquerque Basin and south down the Rio Grande. Throughout this period, southwestern New Mexico was occupied by the Apaches; Spanish activities were restricted to sporadic raids into Apache territory, and settlement was confined to the Rio Grande Valley.

In 1821, the Treaty of Cordova brought New Mexico under the control of the newly independent Republic of Mexico. Although there was little change in the daily lives of most northern New Mexicans, significant changes did occur on a broader scale. First, the formerly outlawed trade with America was legalized, and the Santa Fe Trail was opened (Cordell 1979). Trade with the United States brought inexpensive goods to New Mexico and broke the monopoly of the Chihuahuan merchants, while also allowing many New Mexicans to make their fortunes moving cargo along the Santa Fe Trail. In addition to goods, Anglo merchants, ranchers, and settlers also began arriving in New Mexico. The second major change was a more lenient land-grant policy, and Mexico began deeding large areas of grazing land beyond the river valleys, which eventually led to the expansion of settlement beyond the Rio Grande and its tributaries. A drawback to Mexican independence was an increase in raiding by nomadic groups such as the Apache and Comanche, as the Mexican government could not afford the protective measures that Spain had taken (Cordell 1979).

Spanish activity in southwestern New Mexico increased when copper deposits were discovered on the southern flank of the Pinos Altos Mountains in 1799 (McElmore et al. 1996). A land grant was established, and 600 men were soon working the Santa Rita del Cobre Mine, located approximately 15 miles east of Silver City. Copper was shipped by mule to Chihuahua and then on to Mexico City. The mine was closed in the 1830s due to increased conflict with the local Apache, but it was reopened after the United States obtained the territory in 1848 following the Treaty of Guadalupe Hidalgo (Sinclair 1985).

US TERRITORIAL PERIOD

In 1846, Mexican rule of New Mexico was terminated when the Kearny Expedition claimed the territory for the United States. The US government, as part of its westward expansion, seized upon the liberal Mexican open-door policy and general weakness in its post-revolution government. The Treaty of Guadalupe Hidalgo ended the Mexican-American War and formalized the ceding of New Mexico to the US government in 1848. Following the war, the US government took an active role in making the area safe for commercial interests and settlement, and new settlements began to appear across New Mexico.

The copper mines at Santa Rita were reopened after the United States acquired the territory, and Fort Webster was established to protect miners and new settlers from Apache raids (Wilson 1975). However, mining efforts remained sporadic, and conflict with the Apache continued, particularly during the Civil War when few troops were available along the frontier. During this time, General James H. Carleton—commander of the California Column and later the New Mexico Military Department—pursued small-scale raids or "scouts" into the Apache's Gila strongholds (Kammer 2001:35). After the Civil War, the focus once again shifted to the western frontier, and Fort Bayard was established in 1866 to protect miners in the nearby Santa Rita and Pinos Altos mining districts. A large military reservation land grant was issued for the lands surrounding the fort, which would be instrumental as a base for Apache War operations for the next 20 years until the surrender of Geronimo in 1886.

The site of present-day Silver City contained a series of springs known as La Cienega de San Vicente, which had been an important campsite for the Apaches and later for Spanish explorers. Farmers and ranchers began moving into the area in the 1860s following the Civil War, joining the small groups of miners that were working in the region following discoveries of gold and silver at Pinos Altos and Georgetown. Grant County was carved out of the western part of Dona Ana County in 1868; Central City (now Santa Clara) was named the county seat, but Pinos Altos was the largest town in the area, and it became the county seat in 1869. The mining camp of Silver City grew quickly, and permanent houses and commercial buildings began to be constructed in 1871 (Berry and Russell 1995:11-12). An 1873 census showed a population of 1,050, including 700 Hispanic residents and 350 Anglos (Berry and Russell 1995:15), and in 1874, Silver City replaced Pinos Altos as the governmental seat of Grant County.

The railroad arrived in New Mexico in 1879 when the Atchison, Topeka, and Santa Fe Railway (AT&SF) line reached Las Vegas, integrating New Mexico into the growing American market economy. The late nineteenth to early twentieth century was a time of rapid industrialization and technological advance, and the increased access to eastern goods and inexpensive transport had profound effects on frontier economies such as that of New Mexico. Manufacturing and mining increased across New Mexico, while traditional goods such as Pueblo pottery were partially replaced by cheaper, mass-produced eastern versions. The AT&SF Railway reached Deming in 1881, and a 47-mile-long narrow-gauge track was constructed to Silver City in 1883. The line was later widened to standard gauge in 1886 and then sold to the Santa Fe Railroad (Myrick 1990:193-194). The railroad allowed Silver City to establish transport connections to the rest of the country and solidified the town as the leading trade center in Grant County. The livestock industry began to expand, and the economic base diversified beyond mining.

TWENTIETH CENTURY

After its initial growth and prosperity, Silver City entered a difficult period of upheaval due to fluctuating silver prices and a series of devastating floods. A nationwide economic recession in 1892-1894 led to a severe decline in silver prices, and the population of the town dropped from 4,000 to 2,300, major building construction came to a halt, and many businesses closed (Berry and Russell 1995:36). Silver City had long been impacted by floods due to its low-lying position along San Vicente Arroyo, but the flood of 1895 devastated the town (Cook and Baxter 1976). A second series of major floods in 1902 ended plans

for the renewal of Main Street, and most of the buildings along the arroyo were abandoned. Those that survived were remodeled to face Bullard Street, one block to the west, and other commercial buildings were constructed along what soon became the main commercial thoroughfare in town. The economic downturn spurred the town leaders to begin diversifying the economy. The high elevation setting and dry temperate climate encouraged development of the town as a center for pulmonary rehabilitation and recovery (particularly for tuberculosis). At the same time, Silver City relied heavily on its role as the county seat and commercial trade center, and it remained an important railroad terminus.

The local economy continued to fluctuate based on national trends. Silver prices recovered in the first decades of the twentieth century, and copper mining increased. East of town, the Santa Rita Mine was dramatically expanded and ultimately became the second largest open pit copper mine in the world. Concentrators and processing facilities were constructed, and company towns such as Hurley and Tyrone were established (Berry and Russell 1995:62). However, the 1918 influenza epidemic and a post-war decline in metal prices led to an economic decline, and the Santa Rita and Tyrone copper mines were temporarily closed in the early 1920s. Medical advances ended the period of sanatoriums, and the Great Depression hit in the 1930s, putting many local people out of work. At the same time, federally funded New Deal programs such as the Works Progress Administration (WPA) sponsored projects across Silver City, including the construction of new concrete sidewalks throughout town.

After World War II, Silver City mirrored the national trends of population increase, economic growth, increased property, construction booms, and expanded tourism (particularly associated with the automobile) (Barrett 2003). Several new highways were constructed (including US 90 to Lordsburg), and transportation corridors developed outside the old downtown. The New Mexico State Teacher's College was expanded and, in 1949, renamed New Mexico Western College (Ragins 2003). The population nearly doubled between 1940 and 1946, when a new census showed just over 5,000 residents. As a result, new residential subdivisions were constructed north and south of town using post-war architectural designs and planning. Tourism, mining, education, and service industries continue to form the economic base of Silver City, which retains much of its historic character.

Southwestern New Mexico developed largely based on the mining of copper, silver, gold, manganese and other minerals. As discussed above, this began prior to 1800 at the Santa Rita del Cobre Mine and continued throughout the 1800s. A boom occurred from the 1860s to the 1880s, when mining districts were established at Pinos Altos, Chloride Flat, Boston Hill, and Black Range, Hillsboro, and other locations across the region. By the 1890s, most of the early gold and silver mining districts were in decline, and the region shifted to open pit mining, particularly of copper. A small mining camp was established at Tyrone in the early 1900s, and Phelps Dodge began acquiring and developing new mines in the Big Burro Mountains in 1909 (Sherman and Sherman 1975). Other large open pit mines were established across the Burro Mountain Mining District in the twentieth century (Chamoro 2018), alongside smaller-scale operations that continue today.

CHAPTER 4

METHODS

A pedestrian heritage resource survey was conducted in accordance with the guidelines presented in the *USDA-Forest Service Region 3 Cultural Resources Handbook* and the *Forest Service Region 3 First Amended PA*. General guidance in §4.10.15 NMAC: Standards for Survey and Inventory was also consulted. The following sections summarize the methods used during pre-field preparations, field efforts, and post-field processing of field data.

PRE-FIELD INVESTIGATIONS

Prior to conducting the survey, the NMCRIS database was consulted to identify previously recorded archaeological sites and previous heritage resource investigations in the project area and vicinity (see Chapter 5). Gila NF Archaeologists Christopher Adams and Christopher Euler were consulted about the APE prior to the survey. Field maps were created in ArcGIS, showing the survey area and all previously recorded sites in the project vicinity. The project area shapefile and Universal Transverse Mercator (UTM) coordinates using the North American Datum (NAD) 83 coordinate system were overlaid on USGS quadrangle maps and aerial photographs to accurately identify the project parcels during field survey. GIS shape files of the survey areas were loaded onto hand-held Global Positioning System (GPS) units and tablets loaded with the ArcGIS Collector application to ensure accurate wayfinding and identification of the project area in the field. Field maps were produced at various scales to aid in the accurate identification of resources during pedestrian survey and to provide field crew members with detailed topographic information on the project area.

SURVEY METHODS

The records reviews were followed by an intensive heritage resource pedestrian survey of the APE defined by the Gila NF. The inventory was completed by walking transects that were no more than 15 m (50 ft) apart along the entire project corridor. In general, this required walking two transects along the access roads, one on each side of the centerline. All cultural materials observed during survey—including all artifacts and features—were closely inspected and evaluated for their age and potential qualification as an archaeological site (criteria are discussed below). Throughout this process, UTM coordinates were obtained using the NAD 83 projection on a hand-held GPS receiver. The GPS receiver and project area maps were consistently consulted to assure full coverage of the project area. Notes on topographic features, hydrology, geology, vegetation patterns, ground surface visibility, and sources of disturbance and recent use were recorded during the survey. Photographs documenting overviews of the project area, sources of disturbance, and specific topographic features were taken throughout the survey.

HERITAGE RESOURCE DOCUMENTATION

Archaeological sites were defined as physical locations of purposeful human activities or events at least 50 years in age. An activity is considered to have been purposeful if it resulted in a deposit of cultural material beyond the level of one or a few accidentally lost artifacts. Generally accepted guidelines for the definition of archaeological sites on state and federal lands in New Mexico were adopted during this investigation, which meet the standards of the *USDA-Forest Service Region 3 Cultural Resources Handbook* and *§4.10.15 NMAC: Standards for Survey and Inventory*. Based on this guidance, archaeological sites were defined as locates that include one of the following:

- • One or more features

- One formal tool if associated with other cultural materials
- An occurrence of artifacts (such as pottery sherds, chipped stone, or historic items) that contains one of the following: (a) three or more types of artifacts or materials; (b) two types of artifacts or materials in a density of at least 10 items per 100 square meters (sq m); (c) a single type of artifact or material in a density of at least 25 items per 100 sq m
- Any location containing a probable habitation structure, rock art, or prehistoric thermal feature (regardless of whether associated artifacts are present)

Cultural manifestations that were more than 50 years old but did not meet any of the above criteria were recorded as IOs (often referred to as isolated finds by the Forest Service), which usually consist of a location with fewer than 10 artifacts or an isolated feature that lacks association or information potential. Information recorded for IOs includes the area (for IOs consisting of more than one artifact), artifact type and frequency, and sketches or photographs of diagnostic artifacts. UTM coordinates were obtained for all IOs. Isolated, single-episode historic period dumps or isolated features lacking associated materials or diagnostic attributes were also documented as IOs regardless of artifact counts. Because the Forest Service site definition has a behavioral basis, locations that result from a single episode of human activity or represent a limited range of activities are best documented as isolates rather than archaeological sites, which are reserved for more purposeful or complex loci of past human activity.

The single previously recorded site in the project area was fully updated, and all portions of the Laboratory of Anthropology (LA) Site Record form were completed. A site datum was established by attaching a circular aluminum Forest Service site tag containing the site number to the northern side of a tree. A datum tree as close to the center of the site or primary site features as possible was selected. No artifacts were collected during this investigation.

MAPPING

OCS uses a cloud-based mapping system that integrates our ArcGIS Online account, a sub-meter GPS receiver, and data collection/mapping applications loaded onto hand-held tablets. Sub-meter spatial data are transmitted from the receiver to tablets via Bluetooth technology, while ArcGIS Collector and Survey123 applications are used to map sites, collect spatial data, and complete artifact analysis and other data entry. Included on each site map, at a minimum, are the LA site number, site boundary, survey boundary, site datum location, north arrow, scale, and legend. When applicable, maps also depicted features, artifact concentrations, diagnostic or other important artifacts, areas of disturbance, and topographic data. Feature types followed the NMCRIS classification system when possible. Each feature was photographed, and its description included dimensions, morphology, building materials, condition, potential for subsurface cultural deposits, and an interpretation of its function.

ARTIFACT ANALYSIS

In-field analysis forms were used to record prehistoric and historic artifacts, provide adequate descriptive information for each assemblage, and assign cultural/temporal affiliations when possible. For the current project, only historic artifacts were identified. Due to the nature of the single site, artifacts were characterized, and diagnostic or unique items were targeted. Historic artifacts were categorized by material type (glass, metal, ceramic, other), artifact type (e.g., bottle, plate, can), and other characteristics. Dimensions and a variety of other attributes were recorded. Makers' marks were illustrated or recorded, and associated manufacturing dates were used to assign temporal affiliations. All historic-item measurements were taken in US standard measurements to the nearest 1/16 inch. Can attributes included seam and opening characteristics and an assessment of the contents the can likely contained.

ELIGIBILITY AND EFFECTS EVALUATIONS

All identified heritage resources were evaluated for their eligibility to the NRHP, and eligible sites were assessed for potential impacts from the proposed undertaking. The eligibility of each resource was evaluated based on its ability to satisfy one or more of four criteria:

1. Criterion A: association with events important in local, regional, or national history
2. Criterion B: association with lives of important historical persons
3. Criterion C: displaying the characteristics of a specific type, period, or method of construction; the work of a master; possessing high artistic value; or being part of an entity whose components lack individual distinction (such as a historic district)
4. Criterion D: having yielded, or being likely to yield, information important in prehistory or history.

The effect of the proposed project on any cultural resource that is eligible or potentially eligible to the NRHP under any of these four criteria was evaluated using the criteria defined in 36 CFR Part 800, which define adverse effects as direct or indirect alteration of the characteristics that qualify a property for inclusion in the NRHP in a manner that diminishes its integrity of location, design, setting, materials, workmanship, feeling, or association.

CHAPTER 5

PREVIOUS RESEARCH

On April 24, 2023, OCS conducted a pre-field records search of the NMCRIS database to obtain information on all previously conducted surveys and previously documented cultural resources located within 500 meters (m) (1,640 ft) of the project area. Shape files and attributes were obtained from NMCRIS, plotted in ArcGIS, and analyzed for their relationship to the current project. Current listings of the NRHP and New Mexico State Register of Cultural Properties (NMSRCP) were also consulted to determine the presence of any registered properties or districts in the project vicinity, although none were identified. Gila NF heritage resource personnel were contacted to determine if additional resources not shown in the NMCRIS database were located in the project vicinity, but no additional information was provided. The purpose of these pre-field record searches was to determine the location of known cultural resources within the project area and vicinity, derive expectations regarding the nature and frequency of resources that might be encountered during the field survey, and obtain a better understanding of the previous research and culture history in the Big Burro Mountains.

Only five previous cultural resource investigations have been completed within 500 m (1,640 ft) of the project area (Table 2). Previous investigations in the area have been conducted for road improvements or maintenance (n=3), a travel management plan for camping corridors (n=1), and a series of drill pads and access roads similar to the current project (n=1). Two of these projects include portions of the current survey area: The Gila NF surveyed FRs 818, 820, and 4089W in 1991 (FS Report 1991-06-158; NMCRIS No. 37185), which includes the primary existing access road from the south, a segment of the access roads between drill sites that was included in the survey area, the laydown/staging area, and Drill Sites 1-3. A second road inventory by the Gila NF in 2006 intersected with isolated segments of the current project corridor.

Table 2. Previous Cultural Resource Inventories Completed within 500 m (1640 ft) of the Current Project

NMCRIS	Forest Service No.	Date	Performing Agency	Report Title
11632	Unknown	1975	NM State University	An Archaeological Survey of Four Drill Pads and Associated Access Roads in the Burro Mountains
37185*	1991-06-158	1991	Gila NF-Silver City Ranger District	FR 818, 820, and 4089W Light Maintenance Burro Mountain Homestead Area
97474	2006-06-009	2006	Gila NF-Silver City Ranger District	Fdr 819/Shrine Mine Road Heavy Road Maintenance
119048*	2010-06-085	2010	Gila NF-Silver City Ranger District	Burro Mountains and Avalanche Peak Travel Management Survey of Routes for Motor Vehicle Use
120220	2010-06-091	2011	Hammerstone Archaeological Services	Cultural Resource Survey of the Silver City Ranger District Travel Management Camping Corridors (Priority 2) on the Gila National Forest, Grant and Hidalgo Counties, New Mexico

*denotes investigation that intersects with the current project

One previously documented archaeological site is located within 500 m (1,640 ft) of the current project area. AR 03-06-07-0669/LA 167143 is listed as a historic site in NMCRIS, but additional information has not been uploaded, and a site form was not submitted by Hammerstone Archaeological Services following their 2011 documentation. In the NMCRIS and Gila NF GIS databases, the site is shown as a large, standardized circular polygon surrounding Drill Site 12. The site was relocated during the current project and is discussed in more detail within Chapter 6.

CHAPTER 6

SURVEY RESULTS

One previously documented archaeological site and five IOs were documented during 100-percent pedestrian survey of the APE. The previously recorded site (AR 03-06-0669/LA 167143) is a late twentieth century mining site that likely dates to the 1970s. There is also a modern mine with features located near the eastern end of two of the proposed access roads (near Drill Site 6) that contains plywood, vinyl garden hoses, plastic, and other modern materials that likely date to the 1980s. Because it does not contain any definitively historic materials or intact mining/engineering features and has not been previously recorded (unlike AR 03-06-0669/LA 167143), this location was not defined as an archaeological site or documented. Site location and individual site maps (Figures A2-A4) are included in the report appendix.

AR 03-06-07-0669/LA 167143

Temporal Affiliation: Recent Historic
Land Status: Gila NF
Dimensions: 285 by 252 m; 36,872 sq m
Eligibility Recommendation: Not Eligible

AR 03-06-07-0669/LA 167143 is a large, late twentieth century copper mining site containing over 30 features and an extensive scatter of historic and modern artifacts (see Figure A4). Most of the site is likely less than 50 years old, but it was fully updated since it had been recorded in the past. The site stretches along the top and upper slopes of a northeast-southwest trending ridge at the northern end of the project area surrounding Drill Site 12 and a segment of an unnamed access road that enters the site from the southwest (Photograph 5). Elevation ranges from 6,020 ft amsl along the eastern boundary to 6,140 ft at the southern boundary. The landform provides a clear view of the Mangas Valley to the north and Tyrone Mine to the east. FR 4121 is located to the southwest, and a second unnamed road accesses the site from the east. The area supports a piñon-juniper-oak woodland with occasional ponderosa pine trees. The understory includes mixed grasses and forbs, beargrass, banana yucca, prickly-pear and cholla cactus, and catclaw acacia. Surface visibility ranges from 50 to 60 percent. The site is in poor condition and estimated to remain less than 25 percent intact. Two of the three structures on the site have collapsed, all mining equipment and machinery has been removed, and erosion has impacted waste rock piles and mineral extraction features.

This site was documented by Hammerstone Archaeological Services in 2008 as part of a Travel Management Rule survey of roads and trails in the Silver City Ranger District. However, little information has been uploaded to the NMCRIS system, and a completed site form for this documentation was not available at the time of survey. In the NMCRIS and Gila NF GIS databases, the site is shown as a large, standardized circular polygon, indicated it is not associated with reliable GIS data. Based on the lack of previous information, the site was fully recorded during the project, including portions that extend beyond the project area and survey buffers.

A total of 27 features were identified and recorded in the field, and two additional features were later added after being identified in aerial imagery during report production. All features were fully described, the site was mapped and photographed, and a new datum tag was installed on an oak tree north of Feature 29 near the southwestern site boundary. The artifact assemblage was characterized, and specific unique or diagnostic artifacts were analyzed. Features are clustered within four loci (A, B, C, and D). Loci A and B are primarily associated with mineral extraction, prospecting, and waste disposal activity and define the

Photograph 5. AR 03-06-07-0669/LA 167143 Site Overview Facing North with Drill Site 12

northern and southern ends of the site, respectively. Locus C is a habitation/staging area that is centrally located, and Locus D contains one significant mineral extraction feature (possibly a mine shaft) and an associated waste-rock pile along the eastern site boundary.

Locus A

Locus A occupies the western slope of the ridge in the northwestern portion of the site and contains 10 features associated with mineral extraction (Table 3). It is dominated by a prominent open cut (Feature 8; Photograph 6) that is surrounded by three waste-rock piles (Features 7, 10, and 11) to the north and south (Photograph 7). An earthen machine platform with two metal rods (Feature 9) is to the south (Photograph 8), and a larger waste rock platform (Feature 12; Photograph 9) accessed by service roads is immediately downslope to the northwest of the cut. Other Locus A features include a linear prospect trench and associated waste-rock pile (Features 16 and 17; Photograph 10), an isolated waste rock pile (Feature 18), and a dugout structure (Feature 15; Photograph 11). The dugout is roughly 20 ft southwest of the cut and contains a small structure in the center of the depression comprised of milled lumber and corrugated sheet metal (Photograph 12). While the function of the dugout is unknown, habitation is unlikely based on the small size and placement of the internal structure and the lack of domestic artifacts. The amount of waste rock within Locus A suggests Feature 8 may have contained an adit or shaft opening, particularly since milled lumber is concentrated at the base and eastern end of the cut.

Table 3. AR 03-06-07-0669/LA 167143 Locus A Features

No.	Feature Type	Dimensions	Description
7	Waste Rock Pile	35 by 37 ft	Crescent-shaped; 3-4 ft in height; sediment- to boulder-sized clasts
8	Open Cut	53 by 22 ft	Linear trench extending through bedrock with green mineralization; milled-lumber concentration in the interior; 15 ft max depth; sheer to steeply sloping sides
9	Machine Platform	25 by 11 ft	Leveled earthen platform with two embedded 10-inch-tall steel rod machine-mounts
10	Waste Rock Pile	23 by 16 ft	Round; 2-3 ft in height; pea- to boulder-sized clasts
11	Waste rock Pile	122 by 47 ft	Crescent-shaped; 20 ft in maximum height; a steel drill rod (8 ft tall) is embedded in the eastern end; comprised of sediment- to-boulder-sized clasts
12	Waste Rock Platform	73 by 50 ft	Formed by systemic dumping to the northwest from the open cut; two short road segments created using cut-and-fill methods terminate at corners of the mound; 30 ft in maximum height; gravel-to-boulder-sized clasts
15	Dugout	43 by 21 ft	Sub-rectangular depression; 3.5 ft in maximum depth; SW wall lined by rock stacked 3 courses high; center of depression contains square structure (F15a) with milled-lumber frame (2.5 by 2.5 ft width/height), flat corrugated metal roof (4 by 4 ft), and doorway opening on NW elevation
16	Prospect Trench	25 by 8 ft	Linear excavation; rimmed by waste rock pile (Feature 17); 4 ft in depth
17	Waste Rock Pile	52 by 28 ft	Surrounds a linear prospect trench (Feature 16); 3.0 ft in maximum height; sediment-to-boulder-sized clasts
18	Waste Rock Pile	35 by 8 ft	Linear; 2.5 ft in maximum height; sediment-to-boulder-sized clasts

Photograph 6. AR 03-06-07-0669/LA 167143 Feature 8 (Open Cut)

Photograph 7. AR 03-06-07-0669/LA 167143 Feature 11 (Example of Waste Rock Pile Surrounding Feature 8)

Photograph 8. AR 03-06-07-0669/LA 167143 Feature 9 (Machine Platform)

Photograph 9. AR 03-06-07-0669/LA 167143 Feature 12 (Platform Mound)

Photograph 10. AR 03-06-07-0669/LA 167143 Features 16 (Prospect Trench) and 17 (Waste Rock Pile)

Photograph 11. AR 03-06-07-0669/LA 167143 Feature 15 (Dugout)

Photograph 12. AR 03-06-07-0669/LA 167143 Detail of Wooden Structure within Feature 15

Locus B

Locus B occupies the southeastern side of the ridge at the southern end of the site and contains 11 features associated with mineral extraction and associated activities (Table 4). It is crossed by a mine access road and is dominated by a large, linear cut (Feature 27; Photograph 13) that is north of an expansive, irregularly shaped platform of waste rock that formed from systemic dumping to the east and subsequent mechanical leveling and modification (Feature 28). Other small waste rock piles and berms are scattered across the locus, including Feature 25 immediately east of the cut (Photograph 14). Similar to Locus A, the amount of waste rock surrounding Feature 27 suggests it may have contained an adit or shaft opening that has since been closed or buried. Other features include a circular prospect pit (Feature 20) surrounded by a waste rock pile (Features 21; Photograph 15) at the eastern edge of the locus, another small prospect pit and waste rock pile west of the platform mound (Features 30 and 31), a rectangular waste rock pile (Feature 29) with an internal depression containing a burned can dump (Photograph 16), and a steel pipe capped by a steel plate of unknown function (Feature 28).

Table 4. AR 03-06-07-0669/LA 167143 Locus B Features

No.	Feature Type	Dimensions	Description
20	Prospect Pit	18 ft (diam)	Circular pit; 4.0 ft in maximum depth; rimmed by displaced waste rock (Feature 21)
21	Waste Rock Pile	48 by 14 ft	Surrounds Feature 20; 2.0 ft in maximum height; gravel-to-cobble-sized clasts
23	Waste Rock Pile	17 by 14 ft	Circular; 1.5 ft in maximum height; sediment- to-small-boulder-sized material
24	Waste Rock Pile	20 by 15 ft	Ovoid; 2 ft in maximum height; cobble-to-large-boulder-sized clasts
25	Waste Rock Pile	54 by 34 ft	Ovoid; 6 ft in max. height; gravel-boulder-sized clasts; situated immediately east of a large cut (Feature 27) and on top of a large waste rock platform (Feature 26)
26	Waste Rock Platform	255 by 190 ft	Large and irregular in shape; constructed from systemic dumping and mechanical spreading of material to the east; contains one large pile (Feature 25) and other low berms from earth-moving equipment; ranges from 4 to 20 ft in maximum height (highest to southeast); sediment-to-large-boulder-sized clasts
27	Open Cut	100 by 20 ft	Linear trench extending through bedrock; 10 ft in maximum depth
28	Steel Pipe	0.5 ft (diam)	Embedded in ground; extends 3 inches above ground surface; steel plate welded to top of pipe
29	Waste Rock Pile	55 by 16 ft	Rectangular/irregular in shape; bermed exterior (2 ft in maximum height) with depressed interior that is covered in metal trash midden (highly fragmented and oxidized cans); pea-to-boulder-sized clasts
30	Prospect Pit	19 by 17 ft	Circular; surrounded by a low berm (Feature 31)
31	Waste Rock Pile	28 by 6 ft	Surrounds a shallow prospect pit (Feature 30); 1.5 ft in maximum height; earth-to-gravel-sized clasts

Photograph 13. AR 03-06-07-0669/LA 167143 Feature 27 (Open Cut)

Photograph 14. AR 03-06-07-0669/LA 167143 Feature 25 (Waste Rock Pile)

Photograph 15. AR 03-06-07-0669/LA 167143 Feature 20 (Prospect Pit)

Photograph 16. AR 03-06-07-0669/LA 167143 Waste Rock Pile (Feature 19) with Can Midden

Locus C

Locus C is a habitation/staging area located along the crest of the of the ridge southeast of Locus A and east of the main mine access road. It contains seven features, including one shed (Feature 1), two structure foundations (Features 3 and 4), three hearths (Features 2, 5, and 6), and one trash midden (Feature 19) (Table 5). Feature 1 is a one-room shed constructed of milled lumber and corrugated metal; it remains mostly intact but leans severely to one side (Photographs 17 and 18). The interior walls contain five sets of graffiti: two have the names "Jack" and "Joe" and the date "5/1/70" in orange spray paint, while the others are in black paint and read "Rolland Beasley" and "December 27, 1986." Feature 3 (Photograph 19) and Feature 4 (Photograph 20) are collapsed milled lumber structures that may have served as temporary residences or storage sheds. The features have evidence of asphalt shingles, windows, and an informal oven from a modified 55-gallon barrel and a sheet metal stove pipe. The three hearths are distributed between the structures and consist of simple rings of oxidized local granite cobbles. Bi-metal or aluminum cans are sometimes associated (Photograph 21). The trash dump (Feature 19) is located just south of Features 3 and 4 and primarily contains cans, with a few glass bottles intermixed (Photograph 22).

Table 5. AR 03-06-07-0669/LA 167143 Locus C Features

No.	Feature Type	Dimensions	Description
1	Structure	10 by 8 ft	One-room shed; doorway/entrance on SW elevation (missing); corrugated metal walls and roof; framed with 2x4-, 3x4-, and 1x6-inch milled-lumber planks with wire-cut nail fasteners; graffiti on interior walls include dates of 1970 (n=2) and 1986 (n=1); roof pitched to northeast; entire structure leans to west
2	Hearth	3 ft (diam)	Circular alignment of local granite cobbles; constructed against NW corner of F1; associated with 1 bi-metal beverage can and 3 undecorated whiteware plate sherds
3	Structure Foundation	29 by 21 ft	Collapsed; associated materials include milled-lumber planks, RR ties, wire-cut nails, galvanized steel straps and aluminum window framing (4 windows indicated), colorless window-glass, corrugated sheetmetal, plywood, asphalt shingles
4	Structure Foundation	29 by 23 ft	Collapsed; associated materials include milled-lumber planks, wire-cut nails, sheetmetal collar/oven shield, sheetmetal stove pipe, 55-gallon modified barrel/informal oven, plywood, and asphalt shingles
5	Hearth	3 ft (diam)	Circular alignment of local granite cobbles; associated with 2 bimetal beverage cans
6	Hearth	3 ft (diam)	Circular alignment of local granite cobbles
19	Trash Dump	27 by 16 ft	200-400 metal items (corrugated single- and multi-serve sanitary, bimetal beverage cans, solder-dot evaporated milk cans, pull-tab all-aluminum Budweiser cans, all-aluminum meat and fish tins, vehicle seat spring bed, 5- and 10-gallon barrels); 100-200 glass fragments (all colorless; food jars and window glass); 10-20 undecorated whiteware sherds

Photograph 17. AR 03-06-07-0669/LA 167143 Feature 1 (Wood and Metal Shed) from the Front

Photograph 18. AR 03-06-07-0669/LA 167143 Feature 1 (Rear View)

Photograph 19. AR 03-06-07-0669/LA 167143 Feature 3 (Collapsed Wooden Structure)

Photograph 20. AR 03-06-07-0669/LA 167143 Feature 4 (Collapsed Wooden Structure)

Photograph 21. AR 03-06-07-0669/LA 167143 Feature 5 (Hearth Example)

Photograph 22. AR 03-06-07-0669/LA 167143 Feature 19 (Trash Dump)

Locus D

Locus D contains a large waste rock pile (Feature 33) visible on aerial imagery and a square structure (Feature 32) representing a possible mine shaft or extraction feature. These features are located approximately 90 m east of Locus A and were not identified in the field. When they were observed on aerial imagery, a decision was made to add them to the site record. Feature 32 is square (approximately 11 by 8 ft) and located immediately west/upslope of Feature 33, which appears to be a large concentration of light tan or white waste rock that measures 104 by 70 ft.

Artifacts

The site contains a scatter of glass, metal, and other debris that dates from the 1970s to the present. Most of the cans and glass are located within Feature 19 (trash dump). Diagnostic glass items include one brown bottle produced by the Owens-Illinois Glass Company with a date code of 1978, one green bottle produced by Liberty Glass Company with a date code of 1980, and two brown bottles with date codes of 1984 and 1987 that likely represent Coors products "CG" and "CGD." Cans include aluminum beverage and food containers and bi-metal (aluminum/steel) beverage cans.

Summary

In summary, AR 03-06-07-0669/LA 167143 is a Recent Historic copper mine that was established as early as 1970 and continued to be used at least into the 1980s. Much of the site is likely not of historic age. It exhibits evidence of prospecting activity, open trench-mining along areas of the ridge where bedrock is exposed or only shallowly buried, and possibly underground mining through shafts that no longer have visible openings. Locus C contains several temporary structures and a trash dump, suggesting the location was used for short-term, possibly seasonal, residence. The mine is located along the western edge of a central block in the Big Burro Mountains known geologically as the Tyrone-Burro Peak Block. This area contains

quartz monzonite porphyry, with a zone of enriched copper mineralization representing the second largest porphyry copper deposit in New Mexico (the geological history is outlined in Chapter 2; also see Kelley 2003). This formation is currently exploited through large open pit mining operations such as the Ohio and Tyrone mines 1 to 2 miles to the east.

Eligibility and Effects

No evidence of a previous eligibility determination is available for AR 03-06-07-0669/LA 167143. The site contains a suite of mining features and modern artifacts dating to the 1970s and 1980s. It was not a location of long-term residence and is very unlikely to contain subsurface cultural deposits with the potential to provide significant information relating to specific research themes that could not be better obtained from other sources. General information that the site can produce has already been obtained during this thorough field recording. The mining features do not exhibit unique engineering or design characteristics and are not good examples of any specific method of construction. Furthermore, the site is unassociated with historic events or processes significant at the local, state, or national level, and even if such association could be demonstrated, the site lacks the integrity to visually convey this association because the associated mining equipment and infrastructure have been removed. The site is therefore recommended as *not eligible* for listing on the NRHP. No further management considerations are warranted for this resource.

ISOLATED OCCURENCES

Five IOs were documented during pedestrian survey (Table 6). These IOs include two isolated artifacts (a can and railroad tie), two isolated features (a prospect pit and possible mine claim marker) without associated artifacts, and a cluster of two glass artifacts. By definition, the five IOs lack additional data potential and are not likely to increase our understanding of local or regional history or prehistory. No further management considerations are warranted for these resources. Their locations are presented in the report appendix.

Table 6. Summary of Documented Isolated Occurrences (IOs)

No.	IO Type	Cultural/temporal Affiliation	Description
1	Single artifact	NM statehood to Recent Historic	One all-steel 1-quart oil can, church-key opened
2	Single artifact	Unknown Historic	One railroad tie fragment, likely reused for another purpose: two wire-cut nails attached, holes from spikes and a plate imprint still visible
3	Feature	Unknown Historic	Probable mine claim cairn: cluster of igneous cobbles stacked three courses (1.5 ft) high; 4 ft diameter; one milled lumber stake protrudes from center (fallen over); located along western side of existing access road along ridge top
4	Multiple Artifacts	US Territorial	Two olive glass fragments from same bottle (body and hand-applied finish); no maker's mark
5	Feature	Unknown Historic	One isolated prospect pit: 12 ft in diameter, 2 ft (0.8 m) deep, spoil thrown to south

CHAPTER 7

MANAGEMENT SUMMARY

Great Basin Resources proposes to drill 12 exploratory holes and develop new access roads for the Sugar Loaf Mineral Exploration Project within the Big Burro Mountains in the Gila NF Silver City District. One previously documented archaeological site (AR 03-06-0669/LA 167143) and five IOs were documented during 100-percent pedestrian survey of the APE. By definition, the five IOs lack additional data potential and are not likely to increase our understanding of local or regional history or prehistory. No further management considerations are warranted for these resources.

No evidence of a previous eligibility determination is available for AR 03-06-07-0669/LA 167143. The site contains a suite of mining features and modern artifacts dating to the 1970s and 1980s. It was not a location of long-term residence and is very unlikely to contain subsurface cultural deposits with the potential to provide significant information relating to specific research themes that could not be better obtained from other sources. General information that the site can produce has already been obtained during this thorough field recording. The mining features do not exhibit unique engineering or design characteristics and are not good examples of any specific method of construction. Furthermore, the site is unassociated with historic events or processes significant at the local, state, or national level, and even if such association could be demonstrated, the site lacks the integrity to visually convey this association because the associated mining equipment and infrastructure have been removed. The site is therefore recommended as not eligible for listing on the NRHP. No further management considerations are warranted for this resource.

Subject to agency consultation and comment, the proposed undertaking would have *no effect* on any historic property listed, or eligible for listing, on the NRHP. However, if buried cultural deposits are discovered during project activities, work should cease, and the Gila NF shall be notified immediately. This undertaking complies with the provisions of the NHPA of 1966, as amended through 1992, the New Mexico Cultural Properties Act (18-6-1 through 18-6-17 New Mexico Statutes Annotated 1978), and any other applicable cultural resource rules or regulations. The project was completed in accordance with the *USDA-Forest Service Region 3 Cultural Resources Handbook*, the *Forest Service Region 3 First Amended PA*, and *§4.10.15 NMAC*. This report is consistent with federal and state standards for cultural resource management.

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APPENDIX A

CULTURAL RESOURCE LOCATIONAL INFORMATION

FOR OFFICIAL USE ONLY

The public disclosure of the location of archaeological sites on state and private lands in the State of New Mexico is prohibited by Section 18-6-11.1 NMSA 1978. Public disclosure of archaeological site locations is federally prohibited by 54 U.S.C. §307103

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