

3.16 Cultural Resources

3.16.1 Affected Environment

As defined in the Bureau of Land Management (BLM) Manual 8100, “cultural resources are definite locations of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional, cultural, or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit.”

Cultural resources also include Traditional Cultural Properties (TCPs) and properties of traditional religious and cultural importance to contemporary Native American groups. Due to the importance of TCPs and properties of traditional religious and cultural importance to area tribes and bands, these resources are discussed in Section 3.17, Native American Traditional Values.

3.16.1.1 Regulatory Framework

Federal historic preservation laws provide a legal environment for documentation, evaluation, and protection of cultural resources that may be affected by federal undertakings, or by private undertakings operating under federal license, or on federally managed lands. The National Environmental Policy Act (NEPA) states that federal agencies shall take into consideration impacts to the natural environment with respect to an array of resources, and that alternatives must be considered. The courts have made clear that cultural resources are regarded as part of the natural environment. The National Historic Preservation Act (NHPA) of 1966, as amended, established the Advisory Council on Historic Preservation (ACHP) and the National Register of Historic Places (NRHP). The NHPA mandates that federal agencies consider an undertaking's effects on cultural resources that are listed or eligible for listing on the NRHP, and Section 106 of the NHPA establishes a review process by which these resources are given consideration during the conduct of federal undertakings. Cultural resources listed or eligible for listing on the NRHP are referred to as historic properties.

Regulations in 36 Code of Federal Regulations (CFR) 800 outline the process through which historic preservation legislation under the NHPA is administered. Regulations in 36 CFR 800.14 allow federal agencies to adopt program alternatives to 36 CFR 800 and to tailor the Section 106 process to better fit agency procedures. The most common program alternative is a Programmatic Agreement (PA) negotiated between the agency, State Historic Preservation Office (SHPO), and ACHP. The National Programmatic Agreement (NPA) among the BLM, ACHP, and the National Conference of State Historic Preservation Officers was adopted as the program alternative for the BLM. The NPA is thus the national BLM authority for meeting requirements of the NHPA. Day-to-day Section 106 compliance is guided by statewide protocols developed by state BLM offices and SHPOs. In Nevada, the State Protocol Agreement (signed in 1999 and amended in 2009) between the BLM and the Nevada SHPO defines how the BLM and SHPO interact and cooperate under the NPA, and provides direction for implementing Section 106 of the NHPA. Additionally, the BLM Handbook H-8120 provides direction to the BLM for conducting Section 106 reviews, and for mitigation of adverse effects of proposed undertakings on historic properties.

Under the NPA, the Nevada Protocol, and 36 CFR 800, project-specific programmatic agreements are recommended for multiple undertakings or complex projects. A PA for a complex project lays out the steps that the agency and consulting parties agree would be taken to consider the effects of the project on historic properties and to resolve any adverse effects. A PA among the BLM, Nevada SHPO, ACHP, and Rodeo Creek Gold Inc (RCG) currently is being prepared for the proposed project. Federally recognized Native American tribes with cultural ties to the study area have been invited to

participate in development of the PA as concurring parties. The PA defines general and specific measures that would be undertaken by the BLM, SHPO, and RCG to ensure that the BLM's objectives and responsibilities regarding the protection of historic properties under the NHPA would be fulfilled.

3.16.1.2 Eligibility Criteria for Listing Properties on the NRHP

The NRHP, maintained by the National Park Service (NPS) on behalf of the Secretary of the Interior, is the nation's inventory of historic properties. The NPS has established three main standards that a property must meet to qualify for listing on the NRHP: age, integrity, and significance. To meet the age criteria, a property generally must be at least 50 years old. To meet the integrity criteria, a property must "possess integrity of location, design, setting, materials, workmanship, feeling, and association" (36 CFR 60.4). Finally, a property must be significant according to one or more of the following criteria:

- Criterion A – Be associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B – Be associated with the lives of persons significant in our history; or
- Criterion C – Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D – Have yielded, or may be likely to yield, information important in prehistory or history.

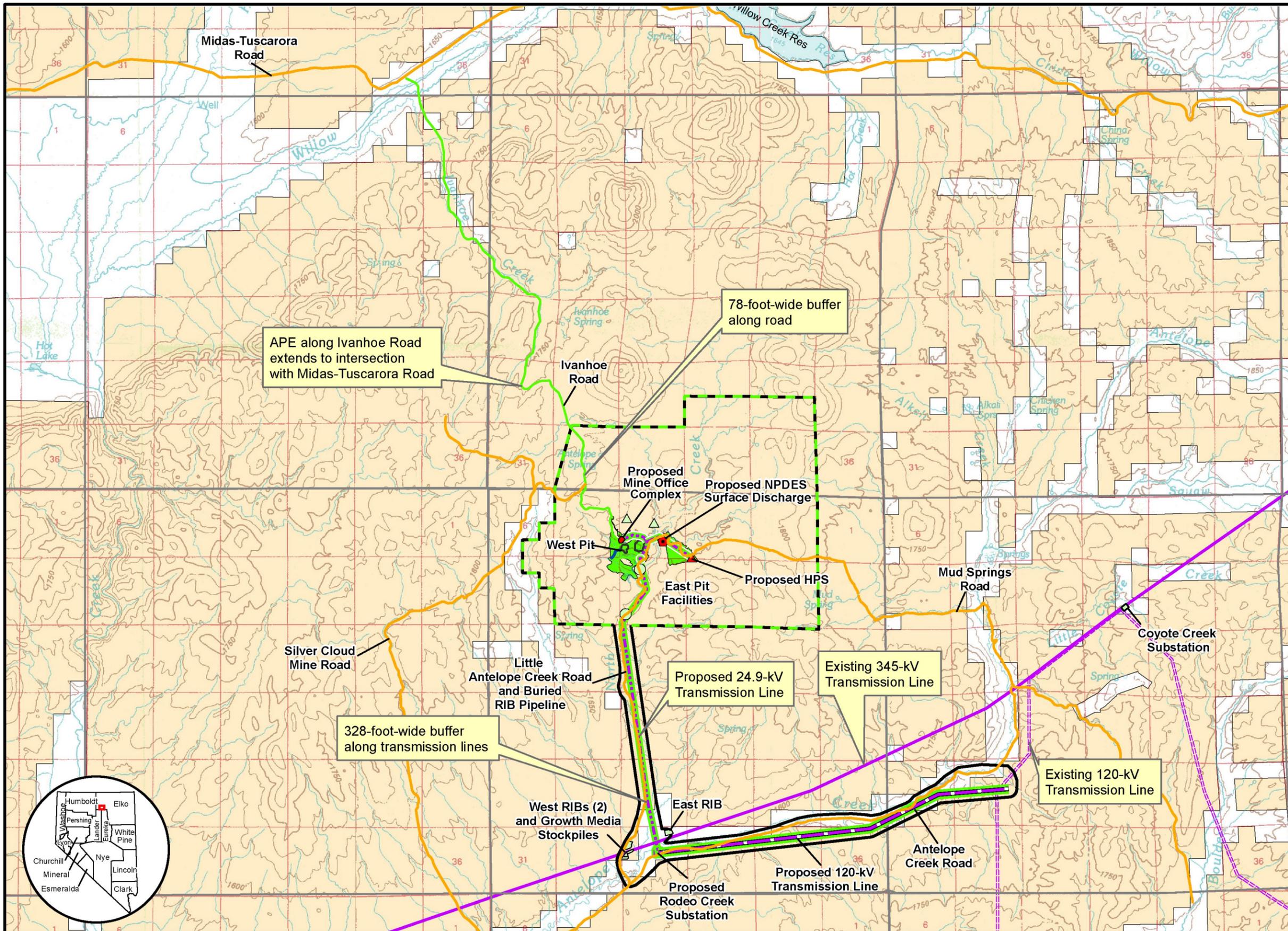
3.16.1.3 Area of Potential Effect

An Area of Potential Effect (APE) was established by the BLM, in consultation with the SHPO to include all lands that may be directly or indirectly affected by the proposed Hollister Underground Mine Project. As a result of the consultation, the BLM and SHPO have designated two APEs for the proposed project. The "Mining APE" is defined as the lands for which the project proposes surface disturbance for mining and ancillary facilities associated with the transition of the Hollister Development Block Project to the Hollister Underground Mine Project (**Figure 3.16-1**). The "Exploration APE" includes areas within which RCG may propose surface exploration activities. Within the Exploration APE, the BLM would designate exploration-specific APEs in response to RCG exploration proposals. The BLM, in consultation with the SHPO, the tribes, consulting parties and RCG, may amend the APE as needed through an amendment to the PA.

The cumulative effects study area (CESA) for cultural resources encompasses an area extending 7.7 miles north, 6.2 miles south, 8.6 miles east, and 4.3 miles west of the East Pit (**Figure 3.16-2**). The boundary of the CESA was determined based on the distribution of Tosawihi material, and includes places where Tosawihi material was procured and used by the Western Shoshone. Past and present actions and reasonably foreseeable future action (RFFAs) are summarized in Section 3.2.

3.16.1.4 Cultural Context

The proposed project area encompasses the Tosawihi Quarries Archaeological District (Tosawihi Quarries), which is approximately 3,722 acres in size and considered the largest opalite (chert) quarry in the Great Basin. The occurrence of Tosawihi-like toolstone has been observed as far as 93 miles from the source. Previous research conducted at the quarries indicates that the quarries have been utilized for at least 10,000 years. Much of the research has focused on identifying the type and distribution of sites within the Tosawihi Quarries, which has been accomplished mainly through survey and archaeological excavation.



Legend
Existing/Authorized Surface Disturbance or Facilities

- Rapid Infiltration Basin (RIB)
- Water Well
- △ Escapeway Raise
- Road
- 345-kV Transmission Line
- 120-kV Transmission Line

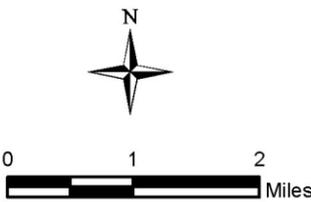
Proposed Surface Disturbance or Facilities

- ▭ Project Area Boundary
- Mine Office Complex
- ◆ NPDES Surface Discharge
- ▲ HPS
- 24.9-kV Transmission Line
- 120-kV Transmission Line
- APE for Mining Activities and Facilities
- APE for Exploration Activities
- Storm Water Diversion Channel

Land Ownership

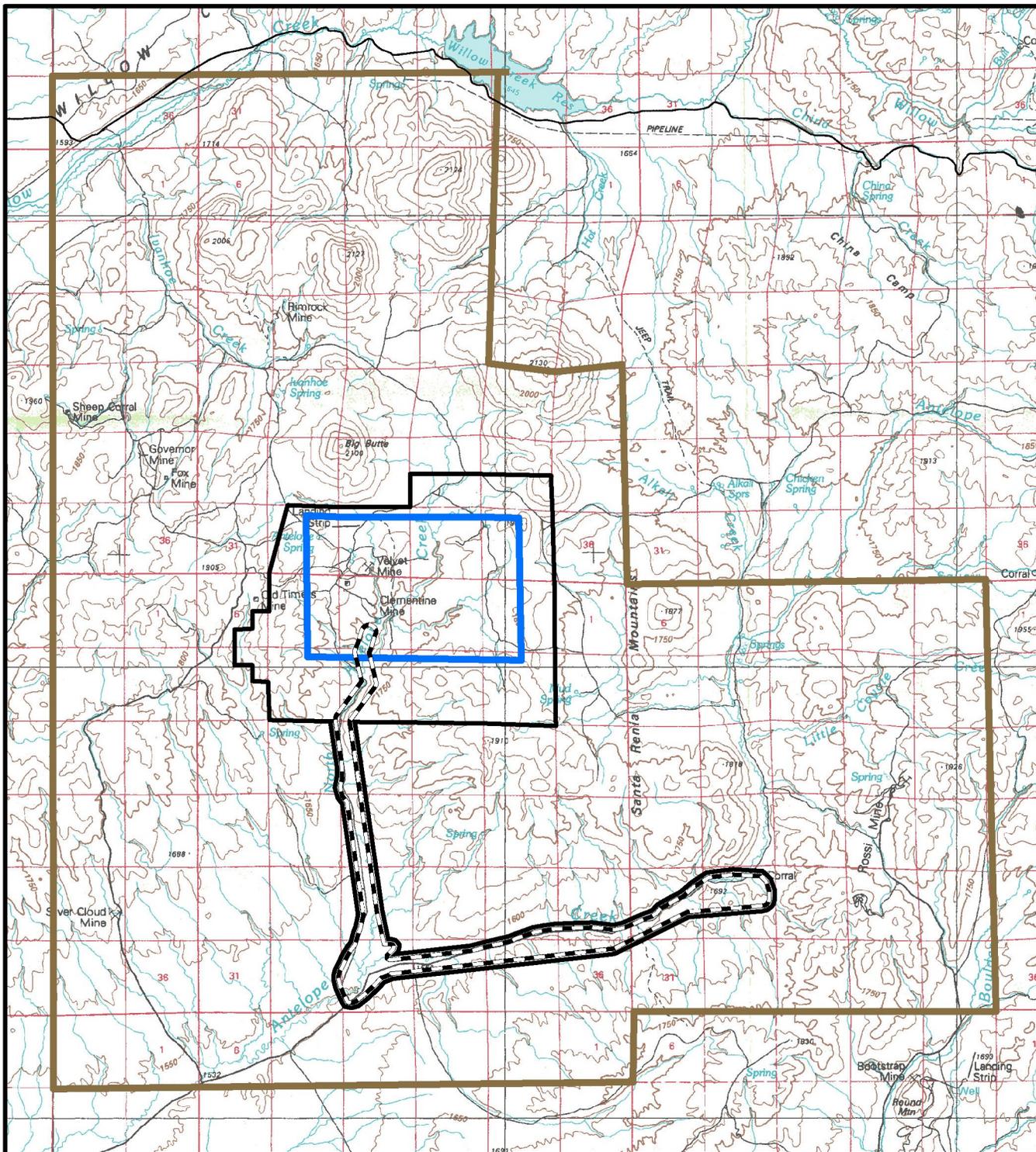
- Bureau of Land Management
- Private

Sources: BLM 2010c; RCG 2009a.



Hollister Underground Mine Project EIS

Figure 3.16-1
 Cultural Resources Area of Potential Effect and Proposed Action Facilities Overview

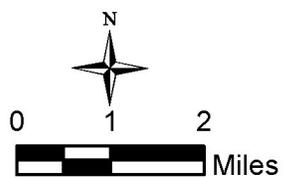


- Legend**
- Project Area Boundary
 - Cumulative Effects Study Area
 - Tosawihi Quarries Archaeological District
 - Transmission Line Analysis Corridor

Hollister Underground Mine Project EIS

Figure 3.16-2

Cultural Resources and Native American Traditional Values Cumulative Effects Study Area



Source: Fawcett 2010.

Great Basin prehistory is defined as a series of phases based on archaeological excavations at James Creek, Pie Creek, and Tule Shelters. These phases include Izzenhood, Dry Gulch, Pie Creek, South Fork, James Creek, Maggie Creek, and Eagle Rock. The following brief summaries provide a general overview of the prehistory and history of the region encompassing the Tosawih Quarries. Information included in the summaries was extrapolated from Clemmer (1990), Elston (2006), Elston et al. (1987), Fawcett and Hockett (2006), Grayson (1993), Hockett (2006), Leach and Botkin (1992), Rusco and Raven (1992), Schroedl (1995), and SWCA Environmental Consultants (2010).

3.16.1.5 Prehistoric Overview

Paleoarchaic Period: Izzenhood and Dry Gulch Phases

Recently discovered evidence suggests humans were present in the Great Basin prior to 12,000 B.P.; evidence of human occupation in the Great Basin becomes more common after 11,000 B.P. This period is marked by cool, moist conditions. Paleoarchaic sites typically are situated in places that would have been adjacent to pluvial lakes or near other wetland settings. Population density was low and groups were highly mobile. Paleoarchaic people were broad spectrum hunter-gatherers who hunted small animals such as waterfowl and sage grouse, and gathered wetlands plants (e.g., cattail pollen, shoots, seeds). Diagnostic tools associated with the Paleoarchaic include stemmed and fluted projectile points.

Early Archaic

The shift from the Paleoarchaic to the Early Archaic period corresponds approximately to the beginning of the middle Holocene period (7,500 B.P) and is characterized by a transition to a warmer, drier environment that resulted in the drying out of lakes, streams, and springs. There is a limited amount of well-dated sites or artifact assemblages from this period, which may suggest a sparse population living in the area at that time. Artifact assemblages dated to this period indicate that Early Archaic people practiced a forager-type subsistence/settlement pattern in small groups; while other assemblages indicate that the Early Archaic practiced large game hunting. Diagnostic tools associated with the Early Archaic were Pinto series projectile points.

Middle Archaic: Pie Creek, South Fork, and James Creek Phases

This period is marked by a shift to cooler, moister conditions in which streams and springs began to flow again and marshes were re-established in some places. The Middle Archaic falls within the transition period from the middle to the late Holocene (ca. 4,500 B.P.). Middle Archaic populations exploited a wide range of habitats and re-occupied residential sites and seasonal camps. Overall settlement patterns were relatively mobile, with movements timed to take advantage of resources maturing at different times in different elevation zones. Diagnostic tools of the Middle Archaic period include Gatecliff Series projectile points, as well as the Humboldt and Elko Series projectile points.

Late Archaic: Maggie Creek Phase

The Late Archaic period (ca. 1,450 B.P.) is associated with the appearance of the bow and arrow. During this period, the climate became warmer and drier, similar to the current climate. Subsistence and settlement patterns varied and ranged from nomadic groups that used a variety of ecological zones to more sedentary groups that primarily used cultivated and locally procured wild resources. Characteristics of Fremont assemblages, such as Fremont-like ceramics, Fremont-style side-notched projectile points, and corn remains are present in sites or components that date to the Maggie Creek phase. Arrow point types, such as Eastgate Expanding Stem, Rose Spring Corner-notched, and Rye Patch Miniature are diagnostic tools of this period.

Late Prehistoric: Eagle Rock Phase

During this period, the overall pattern appears to represent significant intensification of the use of small game and plant resources relative to earlier periods. The introduction of brownware pottery at about

900 B.P. and better groundstone technologies led to the consumption of pine nuts and an increase in other plant foods (e.g., tubers, bunch grasses) throughout the Great Basin. Larger sites are located on the valley floors, with seasonal pine nut gathering and temporary hunting camps located in higher altitudes. The earlier Late Archaic points were replaced by Desert Side-notched and Cottonwood Series points.

3.16.1.6 Class I (files search) Inventory

In January 2010, a Class I files and records search was completed to identify all previously conducted archaeological investigations and previously recorded cultural resources within the project area and CESA (Summit 2010a). The files search was conducted through the online Nevada Cultural Resources Information System database and by reviewing the files at the BLM.

Project Area

A total of 50 cultural resources inventories (including Class II and III) have been previously conducted within the project area (see **Appendix F, Table F-1** for a list of the inventories). As a result of the inventories, a total of 202 sites have been previously documented in the project area. This total includes 192 prehistoric sites, 3 historic sites, and 7 multi-component sites. Of the 202 sites, 28 are eligible for the NRHP, 153 are not eligible, and 21 are unevaluated. Included in the total of eligible sites is the Tosawihi Quarries, which consists of 172 loci, of which 157 contribute to the overall eligibility of the quarries. Contributing loci include rockshelters, quarry pits and outcrops, and large deposits composed of solid layers of millions of flakes, cores, bifaces, and other artifacts often several meters thick in the vicinity of pits and outcrops. It should be noted that unevaluated sites are treated as if eligible until an evaluation of eligibility can be made for each site. By definition, isolated finds are not eligible for the NRHP.

The following provides a breakdown of the 202 sites previously recorded in the project area by project component:

- Mining Facilities (part of Mining APE) – In sum, 54 sites have been previously recorded within the area of the mining facilities. All of the 54 were recorded as prehistoric sites. Of these, only two were eligible for the NRHP and were mitigated as part of the Ivanhoe Project.
- Mud Springs Road/Hatter Production Shaft (part of Mining APE) – Locus 86, which is a contributing locus of the Tosawihi Quarries, was previously recorded in the proposed location of the Hatter production shaft, ramp, or raise (HPS). During the recent field inventories, the locus was discovered 450 feet away from the road, but within the exploration area. Therefore, the locus is included in the site totals for the exploration area.
- Ivanhoe Road (part of Mining APE) – A total of 17 sites have been previously recorded along the Ivanhoe Road. Of these, 15 are prehistoric sites, 1 is a historic site, and 1 is a multi-component site. In total, 2 of the sites are eligible for the NRHP and the remaining 15 sites are not eligible.
- Electric Power Transmission Line (Transmission Line) Corridor (part of Mining APE) – In sum, 20 sites have been previously recorded within the transmission line corridor. These include 17 prehistoric sites and 3 multi-component sites. Of the 20 sites, 11 are eligible for the NRHP and 9 are not eligible.
- Little Antelope Creek Road (part of Mining APE) – A total of 13 sites have been previously recorded along Little Antelope Road. Of these 13 sites, 11 are prehistoric and 2 are multi-component containing both a prehistoric and historic component. Included in the total are 8 NRHP-eligible sites and 5 ineligible sites.

- Surface Exploration (Exploration APE) – A total of 98 sites has been previously recorded in this area, which includes the Tosawihi Quarries. Of these, 95 are prehistoric, 2 are historic, and 1 is multi-component containing both a prehistoric and historic component. Included in the site total are 5 NRHP-eligible sites (including the Tosawihi Quarries), 72 ineligible sites, and 21 unevaluated sites. One of the historic sites is the remains of four workings of the Butte Quicksilver Mine (Butte No. 1, Butte No. 2, Clementine, and Velvet); the site is not eligible for the NRHP.

Cumulative Effects Study Area

A total of 64 cultural resources inventories (including Class II and III) have been conducted within the CESA (excluding the project area) (**Appendix F, Table F-1**). The majority of these inventories have occurred as a result of mining and mineral exploration and expansion. Other inventories consist of linear areas surveyed for utility lines and road improvements. As a result of the inventories, 344 have been previously documented within the CESA. These include 328 prehistoric sites, 6 historic sites, and 10 multi-component sites containing both a prehistoric and historic component. Of these, 72 are eligible for the NRHP, 236 are not eligible, and 36 are unevaluated.

The CESA for cultural resources includes approximately 76,203 acres. Approximately 9,488 acres (12.5 percent) of the 76,203 acres have been inventoried for cultural resources. Total acreage of the 344 sites is 1,668.2 acres; total acreage for the 108 NRHP-eligible sites (including unevaluated sites) is 1,375.7 acres. Based on eligible site totals and acreage, site density is approximately one eligible site for every 87.9 acres. For the remaining approximately 75,255 acres, there is a potential for 2,942 sites.

3.16.1.7 Class III Field Inventory

A Class III intensive field inventory to locate and record cultural resources was completed for the transmission line analysis corridor, which was the only proposed disturbance area that had not been previously inventoried to Class III standards (Summit 2010b). In addition, 16 previously recorded historic properties were revisited to better define their boundaries relative to proposed disturbance areas, and 2 previously recorded unevaluated sites were revisited to assess their NRHP eligibility.

Transmission Line Analysis Corridor Survey

A total of 20 archaeological sites were located during the transmission line analysis corridor survey (**Table 3.16-1**). The survey corridor measured 11.6 miles long and extended 150 feet either side of the proposed transmission line centerline. With the exception of two small areas totaling 33 acres, the entire transmission line corridor (416 acres) was surveyed to Class III standards. The 33 acres were not inventoried because 14 acres had been previously surveyed in 2007, and 19 acres had been previously disturbed by mining activities.

Of the 20 sites located during the inventory, 7 are previously recorded and 13 are newly recorded (**Table 3.16-1**). Included in the 20 sites are 11 historic properties, of which 7 have been previously determined as eligible for the NRHP under Criterion D, and 4 are recommended as eligible for the NRHP under Criterion D. The 7 previously recorded sites include 5 large, complex lithic scatters and 2 small lithic debitage and tool scatters; 2 of the previously recorded sites also have historic components consisting of debris scatters. The 13 newly recorded sites all consist of prehistoric lithic scatters. Of these, 9 are small flake scatters with no tools and 4 are lithic scatters with a greater quantity and diversity of artifacts. The total area of eligible sites within the transmission line analysis corridor is 27 acres.

Table 3.16-1 Archaeological Sites Documented During the Class III Inventory of the Transmission Line Analysis Corridor

Site Number	Type	Description	NRHP Eligibility	Potential Impacts	Site Area (m ²)
CrNV-12-16233	Prehistoric	Newly recorded lithic scatter with three concentrations and several tools.	Eligible	Yes	1,217
CrNV-12-8229*	Prehistoric	Previously recorded lithic scatter consisting of seven concentrations and several tools. Survey relocated several artifacts and lithic concentrations; recorded 16 new prehistoric artifacts and a historic artifact.	Eligible	Yes	13,818
CrNV-12-8242*	Prehistoric	Previously recorded lithic scatter consisting of two concentrations and several tools. Survey relocated 2 artifacts and lithic concentrations; recorded 13 new artifacts.	Eligible	Yes	33,274
CrNV-12-8243*	Prehistoric	Previously recorded lithic scatter consisting of two concentrations and several tools. Survey relocated 1 artifact and 2 lithic concentrations; recorded 2 new lithic concentrations and 8 new artifacts.	Eligible	Yes	1,619
CrNV-12-8244*	Prehistoric/Historic	Previously recorded lithic scatter consisting of four concentrations and several tools; historic debris from the 1950s. Survey relocated several artifacts and lithic concentrations, plus historic component; recorded 15 new artifacts.	Prehistoric – Eligible; Historic – Not Eligible	Yes	13,078
CrNV-12-12929*	Prehistoric	Previously recorded small lithic scatter consisting of a dense area of flakes and several tools. Survey relocated the lithic scatter; recorded one new artifact.	Eligible	Yes	1,635

Table 3.16-1 Archaeological Sites Documented During the Class III Inventory of the Transmission Line Analysis Corridor

Site Number	Type	Description	NRHP Eligibility	Potential Impacts	Site Area (m ²)
CrNV-12-16234	Prehistoric	Newly recorded very small lithic scatter with no tools.	Not Eligible	No	32
CrNV-12-16235	Prehistoric	Newly recorded small lithic scatter with no tools.	Not Eligible	No	159
CrNV-12-16236	Prehistoric	Newly recorded small lithic scatter with no tools.	Not Eligible	No	73
CrNV-12-16237	Prehistoric	Newly recorded small lithic scatter with no tools.	Not Eligible	No	26
CrNV-12-16238	Prehistoric	Newly recorded very small lithic scatter with no tools.	Not Eligible	No	31
CrNV-12-16239	Prehistoric	Newly recorded very small lithic scatter with no tools.	Not Eligible	No	29
CrNV-12-16240	Prehistoric	Newly recorded small lithic scatter with a few tools.	Eligible	Yes	310
CrNV-12-16241	Prehistoric	Newly recorded small lithic scatter with one tool.	Not Eligible	No	55
CrNV-12-16242	Prehistoric	Newly recorded very small lithic scatter with no tools.	Not Eligible	No	26
CrNV-12-16243	Prehistoric	Newly recorded small lithic scatter with no tools.	Not Eligible	No	155
CrNV-12-16244	Prehistoric	Newly recorded lithic scatter with several tools.	Eligible	Yes	689
CrNV-12-16245	Prehistoric	Newly recorded lithic scatter with several tools.	Eligible	Yes	1,672
CrNV-12-14239	Prehistoric/Historic	Previously recorded large lithic scatter consisting of four concentrations and several tools and historic debris. Survey relocated artifacts and concentrations; recorded eight new artifacts.	Prehistoric – Eligible; Historic – Not Eligible	Yes	26,346

Table 3.16-1 Archaeological Sites Documented During the Class III Inventory of the Transmission Line Analysis Corridor

Site Number	Type	Description	NRHP Eligibility	Potential Impacts	Site Area (m ²)
CrNV-12-14241	Prehistoric/Historic	Previously recorded large lithic scatter consisting of two concentrations and several tools and historic debris. Survey relocated several artifacts and two concentrations; recorded ten new artifacts.	Prehistoric – Eligible; Historic – Not Eligible	Yes	15,418

*Site extends into Little Antelope Creek Road.

Source: Summit 2011

Revisit of NRHP-eligible Sites

A total of 18 previously recorded sites were revisited during the course of the archaeological investigations (**Table 3.16-2**). Of these, 4 are located along the Ivanhoe Road, 1 is located along Mud Springs Road near the location of the proposed HPS, and 13 are located along Little Antelope Creek Road.

Table 3.16-2 Previously Recorded Sites Within the Project APE Revisited During Archaeological Investigations

Site Number	Type	Description	NRHP Eligibility	Potential Impacts	Site Area m ²
Ivanhoe Road					
CrNV-12-6820	Prehistoric/ Historic	Previously recorded as a large lithic scatter consisting of several concentrations and tools, and dozer cuts and debris dating from 1935 to 1945. Site has undergone previous data recovery. Revisit found four new prehistoric artifacts.	Prehistoric – Eligible; Historic – Not Eligible	Yes	65,418
CrNV-12-6829	Prehistoric/Historic	Previously recorded as a lithic scatter consisting of flakes and a few assayed cobbles. Revisit found no cultural material.	Not Eligible	No	900
CrNV-12-6840	Prehistoric/ Historic	Previously recorded as a small lithic scatter consisting of flakes and a few assayed cobbles; possible historic pit. Revisit found few traces of the site; however, two tools and a feature were identified.	Not Eligible	No	2,452

Table 3.16-2 Previously Recorded Sites Within the Project APE Revisited During Archaeological Investigations

Site Number	Type	Description	NRHP Eligibility	Potential Impacts	Site Area m ²
CrNV-12-6844	Prehistoric	Previously recorded as a lithic scatter consisting of several concentrations and tools. Site has undergone previous data recovery. Revisit found debitage and two tools.	Eligible	Yes	18,246
HPS					
CrNV-12-10319, Locus 86	Prehistoric	Previously recorded as a rock shelter with lithic scatter and burned bone fragment. Revisit located the site across a steep drainage and 450 feet away from the road.	Eligible	No	27
Little Antelope Creek Road					
CrNV-12-8843	Prehistoric	Previously recorded as a small lithic scatter consisting of two concentrations and several tools. Revisit relocated lithic concentrations; recorded one new historic artifact.	Eligible	No	4,094
CrNV-12-12799	Prehistoric	Previously recorded as a very small lithic scatter consisting of a dense area of flakes with no tools. Revisit relocated the lithic scatter; recorded no new artifacts.	Eligible	No	2
CrNV-12-12931	Prehistoric	Previously recorded as a very small lithic scatter consisting of a dense area of flakes and a few tools. Revisit found the site but no tools; artifact density has decreased.	Eligible	Yes	18
CrNV-12-12932	Prehistoric	Previously recorded as a large lithic scatter consisting of 17 concentrations and several tools. Revisit relocated several artifacts and lithic concentrations; recorded 31 new artifacts.	Eligible	Yes	49,746
CrNV-12-12933	Prehistoric	Previously recorded as a lithic scatter consisting of three concentrations and a few tools. Revisit relocated two loci and three artifacts; recorded five new artifacts.	Eligible	No	2,368

Table 3.16-2 Previously Recorded Sites Within the Project APE Revisited During Archaeological Investigations

Site Number	Type	Description	NRHP Eligibility	Potential Impacts	Site Area m ²
CrNV-12-12965	Prehistoric	Previously recorded as a lithic scatter consisting of 19 concentrations and several tools. Revisit relocated 11 loci; recorded 1 new locus and 9 new artifacts.	Eligible	Yes	39,630
CrNV-12-13977	Prehistoric/Potentially Ethnohistoric	Previously recorded as wooden structural remains with two lithic concentrations. Revisit relocated wooden structure and lithic concentrations; recorded new lithic concentration and two new artifacts.	Eligible	No	1,517
CrNV-12-14235	Prehistoric	Previously as a large lithic scatter consisting of three concentrations and several tools. Revisit relocated several artifacts and 2 lithic concentrations; recorded 12 new artifacts.	Eligible	No	30,944

*Site extends into transmission line analysis corridor.

Source: Summit 2011.

Ivanhoe Road

Of the four previously recorded sites revisited along the Ivanhoe Road, two had been previously determined eligible for the NRHP under Criterion D, and two had not been previously evaluated for the NRHP (Table 3.16-2). The two previously recorded eligible sites included a prehistoric lithic scatter and a multi-component site consisting of a prehistoric lithic scatter and historic debris scatter. Both sites have undergone data recovery (archaeological excavation) twice, once to test for NRHP eligibility and once to mitigate effects associated with the Ivanhoe Project. Although these sites were previously excavated, they are still eligible for the NRHP. Total area of the two eligible sites is 20.7 acres. The two unevaluated sites included a prehistoric lithic scatter and multi-component site consisting of a prehistoric lithic scatter and possible historic pit feature. Following the site revisit, both sites were evaluated as not eligible for the NRHP by the field archaeologist.

Mud Springs Road (near HPS)

A previously recorded NRHP-eligible rock shelter with a lithic scatter and burned bone fragment was revisited along Mud Springs Road between the existing mine and proposed location of the HPS (Table 3.16-2). The rock shelter is Locus 86 of the Tosawih Quarries, which is eligible for the NRHP under Criteria A and D. As a result of the revisit, the location of the rock shelter was confirmed as being across a steep drainage and over 450 feet from Mud Springs Road. No other loci were identified in the area of the proposed HPS.

Little Antelope Creek Road

A total of eight previously recorded historic properties were revisited along Little Antelope Creek Road (**Table 3.16-2**). The eight sites include seven prehistoric lithic scatters and the remains of a historic wooden structure with two lithic scatters (potentially ethnohistoric). Of the eight sites, three are either bisected by Little Antelope Creek Road or within 65 feet of the road. Total area of the three historic properties either bisected or within 65 feet of the road is 22.1 acres.

Surface Exploration (Exploration APE)

A total of 98 sites have been previously recorded in the Exploration APE. (Note: The 98 “sites” include 97 cultural sites and the Tosawahi Quarries, which includes 172 loci.). Of the 98 sites, 95 are prehistoric, 2 are historic, and 1 is multi-component containing both a prehistoric and historic component. Included in the site total are 4 historic properties, 72 ineligible sites, 21 unevaluated sites, and the Tosawahi Quarries. One of the historic sites includes the remains of four workings of the Butte Quicksilver Mine (Butte No. 1, Butte No. 2, Clementine, and Velvet); the site is not eligible for the NRHP. Total area of the four historic properties is 55.8 acres.

3.16.2 Environmental Consequences

Potential impacts to historic properties are assessed using the “criteria of adverse effect” (36 CFR 800.5[a][1]): “An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.” There are five broad categories of effect:

1. Physical destruction or alteration of a property or relocation from its historic location;
2. Isolation or restriction of access;
3. Change in the character of the property’s use or of physical features within the property’s setting, or the introduction of visible, audible, or atmospheric elements that are out of character with the significant historic features of the property;
4. Neglect that leads to deterioration or vandalism; and
5. Transfer, sale, or lease from federal to non-federal control, without adequate and legally enforceable restrictions or conditions to ensure the preservation of the historic significance of the property.

Under NEPA, effects to historic properties can be direct or indirect. Direct effects are caused by an undertaking and occur at the same time and place (40 CFR 1508.8[a]). These types of effects to historic properties include physical damage resulting from surface-disturbing activities and can occur to both known sites and subsurface sites. Indirect effects are caused by an undertaking and are later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR 1508.8[b]). These types of effects often are not quantifiable and can occur both within and outside of the APE. Indirect effects to historic properties include, but are not limited to, changes in erosion patterns due to construction activities, inadvertent damage due to off-road maintenance traffic, and illegal artifact collection due to increased access to an area.

3.16.2.1 Proposed Action

Potential Effects

The Proposed Action would result in approximately 117 acres of surface disturbance that includes 49.6 acres for mining, water management, and ancillary facilities; 34.7 acres for the transmission line; 7.7 acres for roads; and 25 acres for surface exploration. The Proposed Action surface disturbance would be in addition to the previously authorized disturbance of approximately 105 acres for a total

disturbance of approximately 222 acres. Brief impact summaries of each proposed component of the Proposed Action are provided below.

Facilities (Mining, Water Management, and Ancillary)

Approximately 49.6 acres of disturbance associated with the mining facilities, water management facilities, and ancillary facilities would occur under the Proposed Action. Ground disturbance associated with construction of these facilities could directly impact both known historic properties and unknown subsurface sites that could be discovered during ground-disturbing activities. Only two historic properties are located within the proposed areas of the mining facilities; both sites were mitigated as part of the Ivanhoe Project.

Indirect effects to historic properties often are not quantifiable and can occur both within and outside of the APE. Potential indirect effects could include changes in erosion patterns caused by runoff and/or water discharge, as well as vandalism, inadvertent damage, and illegal artifact collection associated with an increase in disturbance and numbers of people in the APE.

Visual impacts were determined by comparing visual contrast ratings for the proposed project facilities with the Visual Resource Management (VRM) class objective for the project vicinity. All of the area proposed for disturbance is rated VRM Class IV. The objective for VRM Class IV states, "...the level of change to the characteristic landscape can be high." The proposed facilities would have visual characteristics during active mining similar to the existing facilities. As a result, the proposed facilities would have similar, but expanded, visual effects to those already occurring from the existing facilities. However, conformance with VRM standards does not mean that no visual impacts would occur that might alter the eligibility of historic properties and what makes them eligible (in particular, the Tosawih Quarries).

Surface Exploration (Exploration APE)

The exploration APE includes approximately 8,181 acres (including the Tosawih Quarries). Approximately 1,953 acres (24 percent) of the exploration APE have been inventoried for cultural resources. Total site acreage (which includes 97 sites and 172 loci) within the exploration APE is 907 acres. Site density is one site for every 7.26 acres.

The Tosawih Quarries, which is located within the exploration APE, is approximately 3,722 acres. Of the 3,722 acres, approximately 1,385 acres (37.2 percent) have been inventoried for cultural resources. Within the Tosawih Quarries are 157 loci that contribute to the overall eligibility of the quarries. Total acreage of the 157 contributing loci is 801.6 acres. Site density for the contributing loci is one locus for every 8.82 acres. For the remaining 2,337 acres, there is a potential for an additional 265 loci within the Tosawih Quarries that may all be contributing elements of the quarries.

Prior to surface exploration, Class III inventories would be required for those areas not previously inventoried to Class III standards. Ground disturbance associated with surface exploration could directly and cumulatively affect historic properties and contributing loci identified in the exploration APE.

Access Roads

Ivanhoe Road. Impacts to the two historic properties could occur as a result of continued maintenance along Ivanhoe Road. Total area of the two historic properties is 20.7 acres.

Little Antelope Creek Road. Impacts to three historic properties along Little Antelope Creek Road could occur as a result of minimal maintenance activities. Total area of the three historic properties is 22.1 acres.

East Pit Spur Road. No cultural resources are located within the area proposed for the new East Pit Spur Road.

Mud Springs Road. A short portion of Mud Springs Road would be upgraded within the previously authorized mining disturbance area in order to accommodate haul trucks to and from the HPS.

Surface Exploration Access. Surface exploration access would utilize existing roads, two-track roads, and overland travel. The use of existing roads and other access routes within and around the Tosawahi Quarries can cause adverse effects to historic properties. BLM would be consulted with and approve any maintenance to these roads or routes, and their use for mineral exploration and mining-related activities. In addition, to minimize impacts to cultural and other resources, the BLM discourages the use of roads when deep rutting (3 inches or more) would occur.

Transmission Line

A total of 11 historic properties are located within the transmission line analysis corridor and could be affected by ground-disturbing activities associated with construction of the transmission line. Total area of the 11 historic properties is 27.0 acres. Visual impacts to the 11 historic properties are not expected to occur as site setting is not a contributing factor to the significance of these sites.

With respect to visual impacts to Tosawahi Quarries, the moderate color and line contrasts of the transmission line and substation would achieve the Class IV objective during the project's active life. However, as stated previously, conformance with VRM standards does not mean that no visual impacts would occur that could affect the eligibility of the Tosawahi Quarries and the criteria that make it eligible.

Resolution of Effects

The PA currently being developed outlines the steps to be taken to: 1) identify cultural resources; 2) evaluate them for eligibility for listing on the NRHP; 3) identify potential adverse effects; 4) develop measures to avoid, reduce, or mitigate adverse effects; and 5) address inadvertent discoveries. Additionally, the PA assigns roles and responsibilities for its implementation, which ensures that all interested parties are given an opportunity to comment on the effects of an undertaking on historic properties and any mitigation for such effects.

In consultation with the Nevada SHPO, the Tribes, and consulting parties, the BLM would determine whether construction and operation of the proposed project would have an adverse effect on any properties listed or eligible for listing on the NRHP. If the BLM determines that a property would be adversely affected, then mitigation would be proposed in accordance with the PA. Mitigation may include, but would not be limited to, one or more of the following measures: 1) avoidance through changes in the construction or operational design; 2) data recovery, which might include the systematic professional archaeological excavation of a historic property; 3) the use of landscaping or other techniques that would minimize or eliminate effects on a property's setting; or 4) the development of interpretive materials.

In accordance with the PA, when avoidance is not reasonably practicable, the BLM, in consultation with the SHPO, RCG, the tribes, and consulting parties (as appropriate) would review and approve a treatment plan developed and implemented by RCG's archaeological contractor(s). The treatment plan would be designed to minimize and/or mitigate project-related effects to historic properties. For historic properties eligible to the NRHP under Criteria (A) through (C), mitigation, other than data recovery, would be considered (e.g., further documentation, oral history, historic markers, exhibits, interpretive materials, etc.). Mitigation of historic properties eligible under Criterion (D) may involve archaeological excavation utilizing a treatment plan that has been reviewed and approved by the BLM and SHPO. Where appropriate, efforts would be made to involve the public or make interpretive information available to the public. Input from consulting parties would be used by the BLM to reach decisions on

other mitigation measures. The BLM would require as a condition of approval or authorization that RCG completes the fieldwork portions of any treatment plan prior to initiating any activities that may affect historic properties.

As stipulated in the PA, for historic properties located inside or outside of the Tosawihi Quarries, a buffer zone of at least 100 feet around the historic property would be established to protect the property from inadvertent damage. The BLM may, on a case-by-case basis, agree to a smaller buffer zone. Project facilities would not encroach into the established buffer without further review and approval by the BLM, which may require further mitigation.

To minimize the potential for illegal collection, vandalism, and inadvertent damage, RCG would ensure that all its project personnel and contractors are instructed on cultural resources avoidance and protection measures, including the statutes protecting cultural resources as part of its environmental training program prior to being authorized to work in the study area. In addition, RCG's project personnel would continue to be educated about their responsibilities to protect cultural resources, and RCG's policy against off-road travel and removal of artifacts would be enforced (see Section 2.4.9, Applicant-committed Environmental Protection Measures).

Per the PA, if any previously unknown archaeological sites are discovered during construction on BLM-administered lands, all construction activities would cease within 100 feet of the discovery, and the BLM manager would be notified of the find. Steps would be taken to protect the site from vandalism or further damage until the BLM Authorized Officer could evaluate the nature of the discovery, as outlined in the PA. Construction would not resume in the area of the discovery until the BLM manager has issued a notice to proceed.

In accordance with the PA, if human remains, remains thought to be human, associated or unassociated funerary objects, or objects of cultural patrimony are discovered on federal lands, work within 100 feet of the discovery would stop immediately. RCG or its contractors would immediately notify the BLM and SHPO of the discovery, followed by written notification. Upon notification, the BLM would notify the appropriate law enforcement authorities, county coroner, appropriate tribes, and potentially interested parties. Assessment, treatment, and protection of the remains would be in accordance with the PA. Work in the immediate vicinity of the human remains would not resume until after disposition of the human remains has been determined. The BLM would issue a notice to proceed after notification to the SHPO and consultation with appropriate tribal representatives.

Per the PA, treatment of any discovered human remains and associated artifacts found on non-federal land would be handled in accordance with the provisions of Nevada state law (Nevada Revised Statute 383). RCG would notify the relevant county coroner or sheriff, the landowner, SHPO and BLM of the discovery.

3.16.2.2 Mud Springs Road Transmission Line Alternative

The majority of proposed disturbance associated with the Mud Springs Road Transmission Line Alternative would be on previously undisturbed land. At this time, portions of this alternative have not been inventoried for cultural resources. For those portions previously inventoried, the inventory data indicate no known historic properties along the segment of the alternative terminating at the existing Coyote Creek Substation (North Option), and one historic property along the segment terminating at a new substation (South Option). The historic property is identified as a prehistoric lithic scatter. Total site area for the one historic property is 6.5 acres.

If this alternative were chosen, a Class III inventory would be required along previously unsurveyed portions of the road. It is unknown at this time as to how many historic properties may be located along these previously unsurveyed portions. If historic properties were located during the inventory, unavoidable adverse effects would be mitigated as described for the Proposed Action.

3.16.2.3 Mud Springs Road Waste Rock Storage Facility Alternative

The construction of the Mud Springs Waste Rock Storage Facility (WRSF) would disturb approximately 21 acres, 90 percent of which would be new surface disturbance. Three loci, which contribute to the overall eligibility of the Tosawihī Quarries, fall within the proposed location of the Mud Springs Road WRSF; however, the locations of these loci have not been field verified as of this date. The three loci are Locus 88, Locus 93, and Locus 94. All of the loci are eligible under Criteria A and D. Locus 88 consists of four quarry pits and one quarry outcrop with debitage and bifaces. Loci 93 and 94 are diffuse lithic scatters with cores, bifaces, and debitage. Total site area for the three loci is 11.4 acres. If this alternative were chosen, unavoidable adverse effects to these loci would be mitigated as described for the Proposed Action.

3.16.2.4 Backfill Alternative

Previous inventories recorded five loci (27, 31, 34, 75, and 145) along the existing two-track roads to the site raises; however, the locations of these loci have not been field verified as of this date. The existing two-track roads to the raises would require upgrades to accommodate trucks transporting rock material to be used in the raise backfilling. No loci are located within other proposed disturbance areas associated with this alternative. All of the five loci contribute to the overall eligibility of the Tosawihī Quarries under Criteria A and D. Loci 27, 31, and 145 consist of several quarry pits, cores, hammerstones, bifaces, and flakes. Locus 34 consists of the same artifacts as Loci 27, 31, and 145, but with the addition of a “rare” tabular ground stone piece; loci 75 is a single quarry pit. Total site area for the five loci is 22.7 acres. If this alternative were chose, unavoidable adverse effects to the loci would be mitigated as described for the Proposed Action.

3.16.2.5 No Action Alternative

Under the No Action Alternative, the proposed facilities that would comprise the proposed project would not be developed. No additional ground-disturbing activities beyond surface exploration, which is currently authorized, would occur. The bulk sampling and exploration activities would continue as currently permitted. Therefore, no effects to historic properties are anticipated under the No Action Alternative.

3.16.3 Cumulative Impacts

As directed by law, cultural resources inventories are conducted for any actions involving federal actions, and adverse effects to historic properties avoided or mitigated as appropriate. Avoidance through project redesign is the preferred method of mitigation; however, when avoidance is not feasible, data recovery (archaeological excavation) or other forms of mitigation are implemented prior to ground-disturbing activities.

For the proposed project, unavoidable adverse effects to historic properties would be mitigated in accordance with the PA and a treatment plan developed in consultation with the Nevada SHPO, RCG, the tribes, and consulting parties. In addition, any previously unknown historic properties potentially discovered during construction activities would be mitigated as stipulated in the PA. If data recovery is necessary to mitigate unavoidable adverse effects to historic properties, the process would recover a substantial amount of data but ultimately the site would be destroyed by the undertaking preventing future opportunities for scientific research, preservation, or public appreciation. Data recovery mitigates the potential damage, but the effects are still adverse. Over time, this represents a cumulative loss.

The number of artifacts at documented historic properties located in the vicinity of existing mines and exploration areas has decreased since the properties were first documented, suggesting that indirect effects, such as illegal collecting of artifacts, have occurred and most likely would continue to occur in

the CESA through increased access, development, and increased human presence, as a result of past, present, and RFFAs.

Cultural landscapes and especially historic properties have been cumulatively affected by past and present mining activities, as well as by road construction, livestock grazing, recreational use of the area, range improvements, and wildfires. Soil compaction, altered surface water drainage, and erosion associated with road construction are all negative impacts to the landscape and, by extension, to cultural resources. Livestock congregation and trailing at or across historic properties damage artifacts and the contexts in which they occur. Recreational use of the area, in particular, off-road vehicle travel is increasingly responsible for damage to all types of cultural resources. In addition, off-road vehicle travel takes people into generally unvisited or hard to reach areas, increasingly putting cultural sites at risk of illegal collecting and vandalism. Range improvements benefit cultural resources by restoring cultural landscapes, but certain improvements utilize treatments (e.g., burning, plowing) that impact sites. Wildfires in of themselves are destructive to cultural landscapes and to sites, in particular to standing wooden structures and rock art.

3.16.4 Potential Monitoring and Mitigation Measures

Unavoidable adverse effects to known historic properties identified within the APE would be mitigated in accordance with the PA and Historic Properties Treatment Plan. The BLM, in consultation with SHPO and ACHP, is developing a mitigation and treatment plan that would address identified adverse effects of the project on historic properties. Any subsurface archaeological material discovered during construction activities would be treated in accordance with the PA, Applicant committed Environmental Protection Measures and 3809 Regulations. Per the PA, the BLM, SHPO, Tribes, and Nevada Site Stewards may monitor proposed disturbance and any historic properties that remain untreated within or adjacent to the APE. Monitoring of historic properties around areas of exploration and mining would be effective in ensuring inadvertent damage would not occur to these properties.

3.16.5 Residual Impacts

The Proposed Action would result in the loss of cultural resources not eligible for the NRHP. Although these sites would be recorded to BLM standards and the collected information integrated into local and statewide databases, the sites ultimately would be destroyed or impacted by project construction. For cultural resources eligible for the NRHP and located within the APE, adverse effects would be mitigated in accordance with the PA. Total area of historic properties located within the Mining APE is 69.7 acres. Total area of historic properties located within the Exploration APE is unknown at this time since the entire APE has not been surveyed. Although adverse effects to historic properties would be mitigated through implementation of data recovery or other forms of mitigation, some of the cultural values associated with these sites cannot be fully mitigated; therefore, it is anticipated that residual impacts to these resources would occur.