Appendix F

Cultural Resources Investigation

Cultural Resources Investigations for the Pine Creek Mine Hydroelectric Project (FERC Project No. 12532)

Inyo County, California

Forest Service Heritage Report No. R2013050401778

Prepared for

Applicant: Pine Creek Mine, LLC
679 Marina Drive
Boulder City, NV 88005

Prepared by

Rand Herbert, Principal/Architectural Historian
Leslie Trew, Staff Historian
JRP Historical Consulting
2850 Spafford Street
Davis, CA 95618
(530) 757-2521

and

Shelly Davis-King, Archaeologist/Ethnographer
Davis-King & Associates
PO Box 10
Standard, CA 95373
(209) 928-3443

2014

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1 INTRODUCTION AND DESCRIPTION (By S. Davis-King)

1.1 Project Location and Introduction

The proposed Pine Creek Mine Hydroelectric Project (Federal Energy Regulatory Commission [FERC] Project 12532; Project) is situated along the Pine Creek and Morgan Creek canyons in northwestern Inyo County, northwest of Bishop, California (Figure 1). On three sides of the project is the John Muir Wilderness area within the United States (US) Forest Service/Inyo National Forest (Forest). The project area is depicted on the 1994 *Mount Tom* 7.5 minute United States Geological Survey (USGS) topographic quadrangle in portions of Sections 5 and 8 of Township 7 South, Range 30 East, Mount Diablo Base and Meridian (Figure 2).

The proposed Project is located in the Easy Go Adit, a feature of the Pine Creek Mine, described below. The Project would use surface lands owned by Bishop Tungsten Development, LLC and holds underground lands with property rights (mining claims) in Bishop Tungsten Development, LLC that are subject to specific limitations authorized by Congress or adopted by the courts. The Project would install a hydroelectric turbine within the adit, about 2500 linear feet underground from the Easy Go Portal. The adit, portal, electrical wiring, and access route are existing features of the mining operation.

Groundwater discharge from within the mine currently flows within the adit and out of the mine through the adit portal and then into Morgan Creek. As proposed, the adit, 2500 feet inside the mine, would be plugged to store the water and would discharge into the turbine for the generation of electricity. Electricity would be generated when the hydraulic head is allowed to pass through the new turbine to be installed at the plug. Aquifer and groundwater sources draining through the mine tunnel system generate a total sustainable discharge averaging approximately 10 cubic feet per second (cfs).

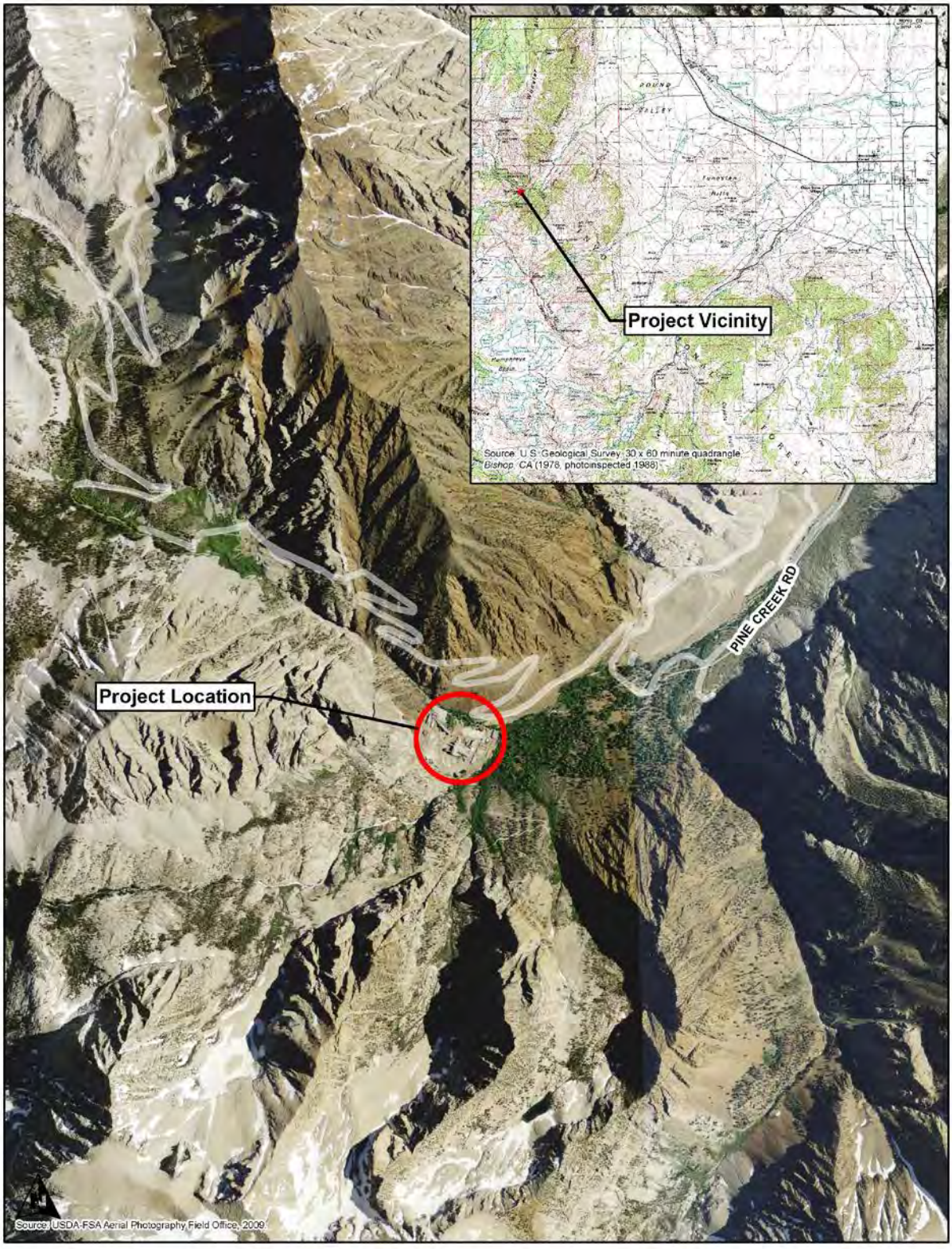

Figure 1. Project Vicinity and Project Location.

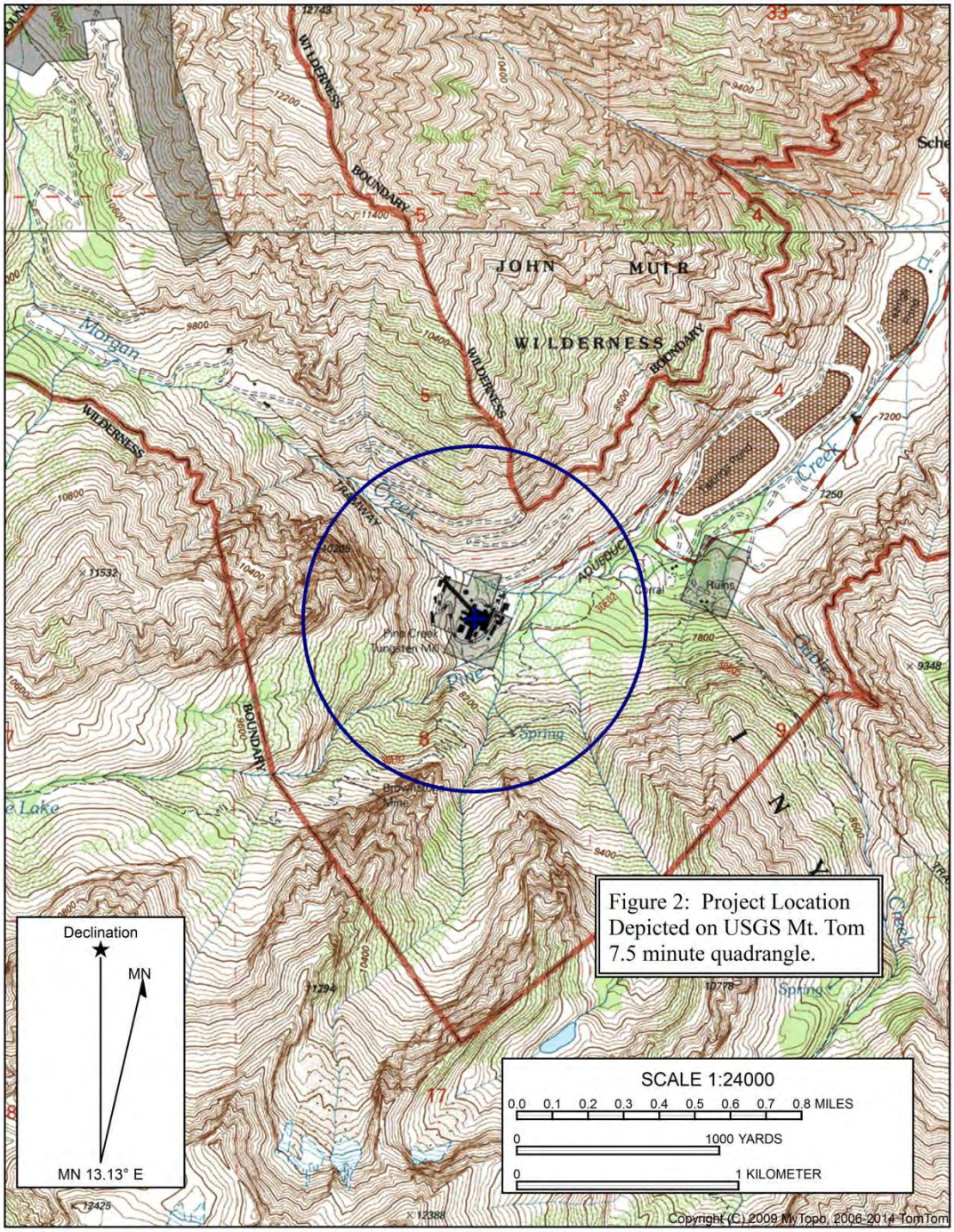

Figure 2. Project Location Map.

1.2 Regulatory Context

The FERC, in December 2010, issued the preliminary permit for this project, pending issuance of a hydroelectric license. The issuing of a federal license constitutes a federal undertaking,

subject to federal historic preservation laws, including Section 106 of the National Historic Preservation Act (NHPA), as amended.

Land ownership issues related to the Project are still being discussed, but may involve the Forest, with permitting and review authority. The Forest previously authorized various Special Use Permits and Operation Plans for the Pine Creek Mine where activities were located on Forest land. Based on Project descriptions to date, all activities will occur on private lands and within private underground mining claims, and will use existing County-owned haul and access roads between the Project and town of Bishop.

1.3 Project Description

The Pine Creek Mine has operated for more than nine decades (see discussion below), but mine facilities are presently inactive. Water is currently flowing out of the inactive Easy Go Adit, which has been plugged (the plug could be closed by placing a steel plate over the man-hole and closing the valves on the manifold to restrict the flow of water behind the plug). Existing discharge piping facilities would be used to control flow and head potential to create hydroelectric power. It is estimated that by plugging the Easy Go Adit, there would be a water storage capacity of up to 1320 feet of gross head above the plug elevation. The plug is located at an elevation of approximately 8080 feet above mean sea level (amsl), and is about 12 feet wide by 12 feet high by 30 feet thick, located 2500 feet inside from the adit portal. Figure 4 shows the existing plug and plumbing fixtures that will be necessary for hydroelectric power generation.

All generating facilities would be located entirely underground in the existing mine adit. The proposed reservoir (that is, the water behind the plug) would store up to 200 acre-feet of water within the mine and have a maximum underground water surface elevation of 9400 feet above sea level.

The proposed Project would use the existing mine operation substation connections to the local utility. The existing substation facility at the site is sized for several times the expected output of the proposed development. The connecting substation is connected to a Southern California Edison (SCE)-owned substation and transmission line operating at 12.0kV. An existing 500 MCM mine power line runs from the portal to the tunnel plug. This power line will be connected to the generator at the plant end and the other end connected to the owner-owned substation off the main sub located 60 feet from the portal, at a voltage of 2.4 kV.

No new buildings or other facilities are proposed. No modifications to existing buildings are proposed. Manufacturing of all new generating facilities and substantial pre-assembly would occur off site and would be trucked to the project location. A portable crane would lift and

position the wheeled generating equipment onto the existing railroad track for delivery to the plug location by a locomotive and for final assembly.

Haul routes for all new equipment would occur on existing County roads and mine access roads on private land designed for heavy equipment. No grading, widening or other improvement of any road is necessary or proposed. During construction there will be two staging areas, each approximately forty feet square, at the entrance to the portals. There are no areas proposed for any ground disturbance as existing facilities will be used.

Project operations and maintenance will be the primary activities that occur on project lands. This will include operating and maintaining the project powerhouse and associated facilities. Maintenance activities will include the tunnel and water conveyance maintenance.

1.4 Area of Potential Effect

The Area of Potential Effect (APE) for the Project has not yet been defined, but is anticipated to be the land within the Project boundary. This would include the existing access road, Easy-Go Adit, substation structures, and temporary staging areas.

1.5 Background Research

Background research of the project area included a records search at the Eastern Information Center (EIC) of the California Historical Resources Information Center by Gayat Adame, Information Officer (EIC-INY-ST-2404; letter included in Appendix B). Research investigated EIC files to include a review of their maps for the specific project location and a 1/4 mile radius around the project. Adame reviewed the Historic Property Data File (California Office of Historic Preservation [OHP] 1990); OHP Historic Properties Data File computer list, no date provided; the Archaeological Determinations of Eligibility list (again no date provided); and the National Register of Historic Places (NRHP; OHP 1990 and updates), No cultural or historic properties were listed in any of these documents in the Project area.

The record search indicated that four cultural resources studies have been previously conducted within the project search radius. One of the surveys, by Werner (1986), apparently covered the entire mine area including the road that lead to the upper levels of the mine in Morgan Creek canyon, and was negative for cultural resources in his opinion. Three other surveys, all also apparently negative, were conducted for a Pine Creek Trail maintenance project (Hornick 2002), for a borrow pit (Miller 1986), and for a small water project at the Pine Creek Mine Pack Station (Hilton 2008). Additionally, for Pine Creek Development LLC, Manske and Larson (2009) recorded the former Tungsten Mill, prior to its demolishment by an avalanche. This record is included in Appendix A.

Historic maps provided by the EIC record search were reviewed. The United States Geological Survey (USGS) *Mt. Goddard* 30 minute map, published in 1945, fails to note any development of the mining operations in the project area at all, but the road along Pine Creek to its confluence with Gable Creek is depicted (Figure 3). As discussed below, it is known that there is development of the mine by the time the USGS (1945) was published. Four years later, the USGS (1949) *Mt. Tom* quadrangle indicated numerous mine buildings, the tramway, the road up Morgan Creek canyon and significant development of mining operations (Figure 4).

In addition to the EIC search, the California Register of Historical Resources (CRHR), the California Inventory of Historical Resources (1976), the California Historical Landmarks (1996), and the California Points of Historical Interest (1992) listings were reviewed, with negative results for the project area.

Review of Forest heritage files would normally be conducted, but due to "government shutdown" in October 2013, review of files was not possible. The Forest database was subsequently checked by Forest Heritage Program Manager Beidl and had no information beyond that discussed in this record search summary.

Figure 3. USGS (1945) *Mt. Goddard* 30' map of the project area

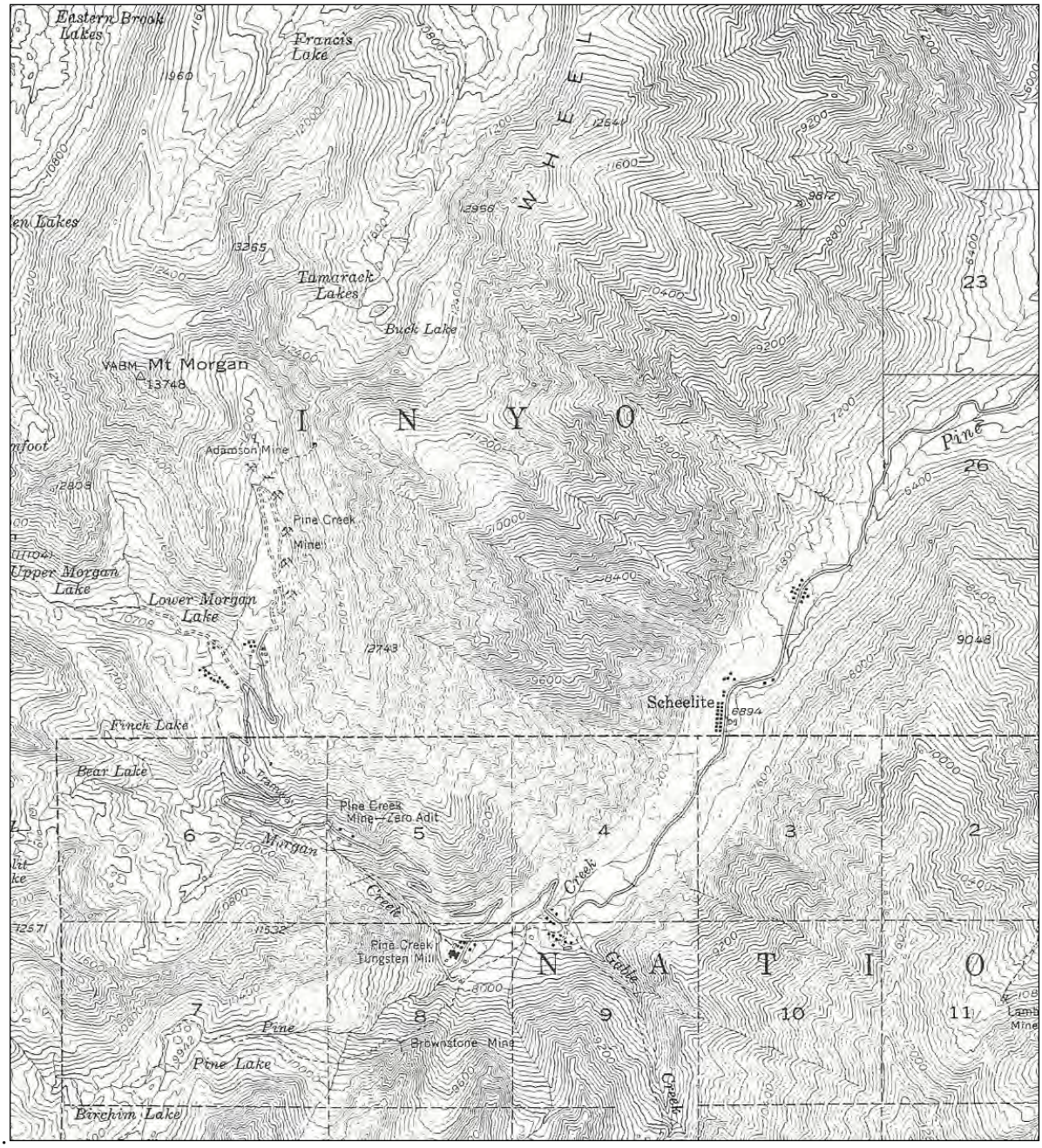

Figure 4. USGS 1949 15’ map of project area.

2 PREHISTORIC AND NATIVE AMERICAN BACKGROUND (By S. Davis-King)

2.1 Native American Background

The Numu, or Northern Paiute, claim the Project area, and it is the location of at least two creation stories (discussed below). Descriptions of the historic Northern Paiute have been made by Powers (1877), Powell in 1880 (Fowler and Fowler 1971), and others. C. Hart Merriam

(1898-1938) conducted studies in the area, and recorded the name the people gave to Round Valley, the area immediately below the Project, as *Kwe-nah-bah'*, with the people themselves identified as the *Kwe-nah-bah'-te*. The first comprehensive work on Northern Paiute was conducted by Lowie (1924), followed by a number of researchers who worked with various Paiute groups. For example, Park (see Fowler 1989) investigated the Walker River and Pyramid Lake Paiute, while Emma Lou Davis worked with the Mono Lake and Bridgeport Paiute. In the Great Basin volume of the *Handbook of North American Indians*, Catherine Fowler and Sven Liljeblad (1986) provided a detailed look at the Northern Paiute, with the same two authors also reviewing the Owens Valley Paiute (Liljeblad and Fowler 1986). Some researchers also give this area over to the Owens Valley Paiute (e.g., Steward 1933).

Northern Paiute people are a geographically large and culturally distinct group tied by language to other Paiute and other Numic speaking groups (Fowler and Liljeblad 1986). According to Fowler (1992:7), the Northern Paiute occupied a territory that extended from the John Day River in the north, through eastern Oregon, western Nevada, and into east-central California, sharing the Project area with the Owens Valley Paiute. Which subgroup of Northern Paiute was in the area was not researched for this study, but it may be that the *Kwe-nah-bah'-te* name recorded by Merriam (infra) is a subgroup rather than a name of a people from a specific geographic region. It is also possible that the *Kutzadika*[a] (brine fly pupae-eaters), whose province centered on Mono Lake in Mono County to the north, or the Long Valley Caldera subgroup, called this area home.

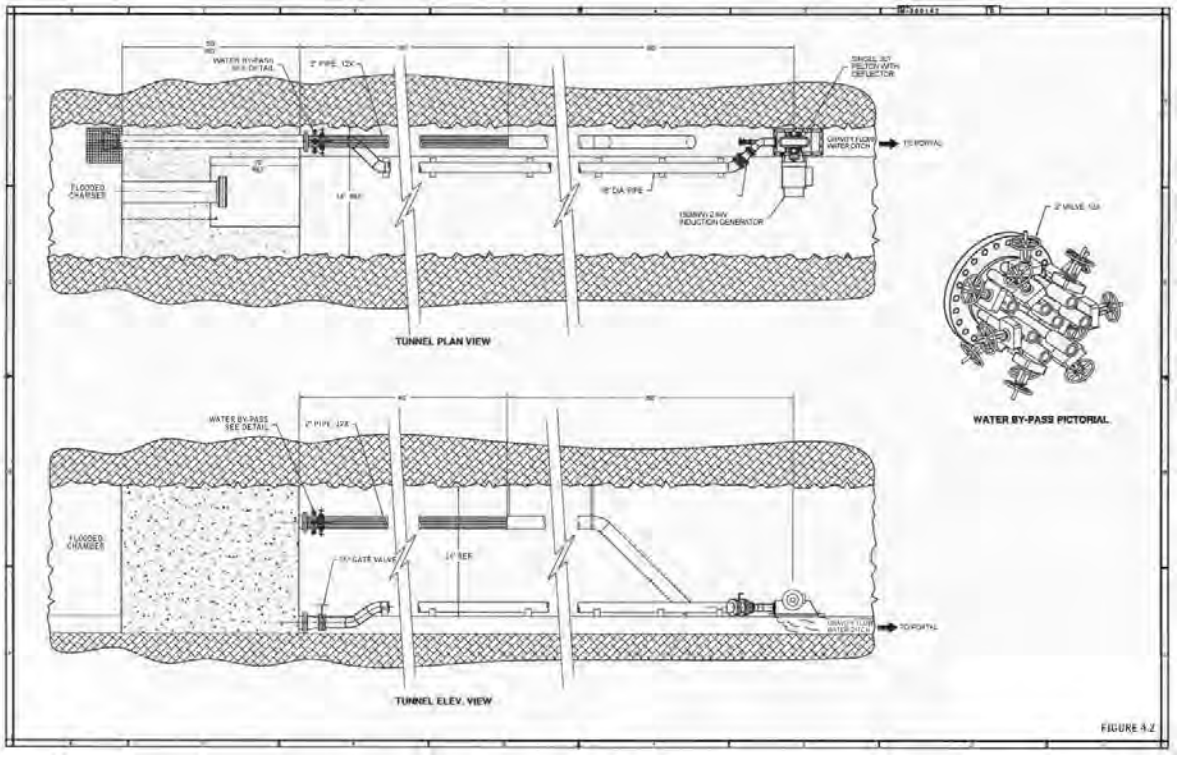

Figure 5. Plan view of Adit Plug.

Creation Stories: Of importance to the present study is the survival of two creation stories, both of which center on the Pine Creek area. The first, told by Round Valley Paiute Jennie Newland (n.d.) said the story took place in *Que-na-ba*, or Round Valley, at the "mouth of Pine Creek." There, she says,

> at the mouth of Pine Creek, for generations past, we have been told that it is our birthplace. This place is circular, like that of an Indian camp of today. On the east side stand two pillars. They say that these are our father and mother. After they grieved a long time, a greater spirit than they took pity on them and turned them into stone.... the tears streaming down their faces are also visible... Any one wishing to see this place, can find it at Pine Creek in Round Valley.

The full text of this story is included in Appendix D.

The second story, told by Jim Tom Jones (n.d.; punctuation and capitalization in the original) described how a young woman was walking up Pine Creek Canyon near the waterfalls, on her way to the western Sierra (Figure 5). A man followed this woman until they came to a lake: "This is the pine creek Lake on the south fork of Pine Creek Canyon" (Jones n.d.:4). They stayed the night, and the next day returned as "man and wife" to

> the mouth of the Canyon, where they made camp. This camp was the camp where Mother and father of all Indian races lived. Here the Mother of all Indians had a lot of children. Father made bows and arrows and gave each one his bow and arrows and said to them. 'Now go where you like, have language to suit yourself. Some went East, some south, some West, and some North. [Jones n.d.:6]... Their Mother watched her children until they were out of sight. She... started to cry. She said, 'I am going to turn into a rock and this she did. Today you can see this rock there yet [Jones n.d.:7]

Both of these stories incorporate Pine Creek canyon into the significant places associated with the creation of the Paiute people. During the consultation for this Project (see below), inquiries were made as to whether the people knew of this story and where the pillars might be located. Further, they were questioned as to whether they thought the Project might have any effect on the pillars of stone or the significance of any associated place, and those who responded said they did not believe the Project would affect anything related to the creation story. People were also asked if they knew which rock/rocks might be referenced, and if they knew where the places were. While there was some discussion about this, no one interviewed was able to identify such a place. It appears then, that the rock pillars, if they exist still, would not be affected by the Project, and thus are likely to be outside of the future proposed APE. The actual location of these ancestral features was not identified in the archives or by the Paiute informants.

Figure 6. View towards waterfalls mentioned in creation story, from Pine Creek Mine, facing west southwest (Photograph by S. Davis-King, June 2011).

2.2 George Brown

George Brown, born about 1898, was a well known Paiute in the Project area (Brown 1991). Native to Round Valley, he was very familiar with the Pine and Morgan creek areas, and gained a reputation as a muleskinner hauling up the steep canyon. Before the roads were built up to the mines, it was the mules, because of their sure-footedness, that were used to transport mining supplies (including timber), food, camp supplies, and more. And it was Paiute George Brown who led those supply-packed mules up the steep canyon. In the early 1930s, George Brown started the Pine Creek Pack Outfit and guided people, supplies, and equipment up into Pine Creek and over Pine Pass into the high country (Brown 1991). In 1937, Brown was contracted to haul equipment and supplies to build the Tungstar mine's power lines (Brown 1991; Kurtak 2007:50), among other arrangements with mining companies to haul.

His pack operations even included mail delivery in the winter (Kurtak has a number of photos depicting George Brown and his mule train; pages 50-52; see also Brown 1991). Other companies, including competing tungsten mines, the California Interstate Telephone Company,

and the California Electric Power Company also depended upon George Brown for hauling. Brown established his Pine Creek Pack Outfit, familiarly known as Brown's Camp, located "at the end of Pine Creek road" (Kurtak 2007:52) that is in roughly the same location as is the Pine Creek Pack Station today. The Pine Creek Road (then perhaps called the Morgan Creek Road?) was completed in the early 1940s, and George sold the pack station to Spray and Ernest Kinney in 1943 (Brown 1991).

2.3 Archaeology

There have been several studies of the Round Valley area conducted by the California Department of Transportation (Caltrans) in relation to State Route 395. Some of the earlier work was by Cook (1974) for the initial archaeological survey, and Warren and Hearne (1974) for excavation of Sites CA-INY-1013, INY-1014, INY-1015, INY-1017, INY-1020, and INY-1024 all of which had late period affiliation. Warren and Hearne especially were aware of the transitional nature of these sites and discussed the historic era artifacts and/or historic structural components as metal fragments (including cast iron), cartridges, wire and cut nails, tinned canisters, glass and ceramic fragments, other historic-era items, houses, and aboriginal items including ceramics and beads. They used four measurements to seriate the sites as a method for chronological ordering, with the sites containing the most historic debris being postulated as the most recent. Warren and Hearne (1974:8) recognized that "these sites appear to illustrate the change from prehistoric to historic occupation," and provided some testable observations. In the historic era, there was "(1) a more rapid decline in the occurrence of flaked stone than in milling stones, and (2) a more rapid decline in projectile points than either scrapers or flakes" (Warren and Hearne 1974:11). They continued to discuss the changes to Paiute lifestyles that go beyond the need for discussion in this study, but what is important about the archaeological sites in this general Project area, is that virtually all of them contain historic constituents, indicating that the people continued to use the places of their ancestors. Among the informants for these studies was George Brown.

Archaeology in the immediate project area has been relatively limited compared to other areas of the Mono Basin and Owens Valley. Research by Eerkins and King (2002) and Basgall and Giambastiani (1995) comprise the major site analyses in the area, with the 2012 study by Basgall and Delacorte making the most comprehensive look at the region to date. Basgall and Delacorte (2012) conclude that there are a substantial number of Newberry age sites (about 3500-1500 Before Present [BP]) in the Project area, and a greater number than found further south. Additional prehistoric background is also summarized in that report (Basgall and Delacorte 2012).

3 ARCHAEOLOGICAL SURVEY AND RESULTS (By S. Davis-King)

Based on a telephone conversation with FERC staff, an archaeological survey of the Pine Creek Mine substation and the SCE substation was desired. A rather larger area of the Project was also investigated, as depicted on Figure 8, and described below. The area of the two substations and Easy Go Adit area was surveyed on 19 October 2013 in approximately three meter transects where appropriate; access was straightforward and visibility unconstrained.

Figure 7. Overview of archaeological survey area. Red rectangle highlights Easy Go Adit Main Entrance.

Geology of the area appears to be granitic rock with ore body including typical tungsten (wolfram) and scheelite. Vegetation observed in the mine area includes overstory species of fir (*Abies concolor*), pine (*Pinus jeffreyi*), water birch (*Betula occidentalis*), juniper (*Juniperus occidentalis*), aspen (*Populus tremuloides*), cottonwood (*P. fremontii*), various shrub-sized plants of willow (*Salix* sp.), elderberry (*Sambucus cerulea*), various buckwheats (*Eriogonum* sp.), big

sagebrush (*Artemisia tridentata*), fern bush (*Chamaebatiaria millefolium*), nonnnative grasses, and what appear to be numerous wildflower species that were not identified. Deer (*Odocoileus hemionus*) and rabbit (hare? cottontail?) scat was observed, and Sierra bighorn sheep (*Ovis canadensis*) are reported. No water resources beyond the water flowing from the adit opening were observed in or near the survey area. The mine itself sits above the confluence of Morgan and Pine creeks.

The Pine Creek Mine substation has a gravel base, fully covering the ground surface, while more than 95 percent of the SCE substation sits on a concrete foundation. Both substations are fully contained within chain-link fencing. Access to the SCE substation was not possible, but due to the concrete foundation, was not necessary. Access to the Pine Creek Mine substation was relatively easy by entering through a breach in the fence. The areas around each substation were investigated for artifacts and/or cultural deposits, but in neither case were any observed. Similarly, the Easy-Go Adit area depicted in Figure 9 was devoid of artifacts or archaeological deposits. The Project survey areas have been part of tungsten mining operations since the 1930s and have been repeatedly altered by mining activities. Original ground surface has been bladed and bulldozed and old mill tailings have been used as road base, for platform construction, and so forth. For the most part, all archaeology has been compromised by the mechanical mining activities and perhaps by the avalanche that destroyed the mill (supra). No native terrain was observed and no archaeological deposits are evident. Other areas of the Pine Creek Mine were more informally examined when various tours and site visits occurred, and again, no artifacts or archaeological deposits were observed. All buildings observed were investigated and are discussed in a separate section below. The survey area is also plotted on Figure 8 (USGS 1994). The SCE substation survey area cannot be shown on the survey coverage map here because the dark footprint of the mill and other mine buildings overlays the survey location.

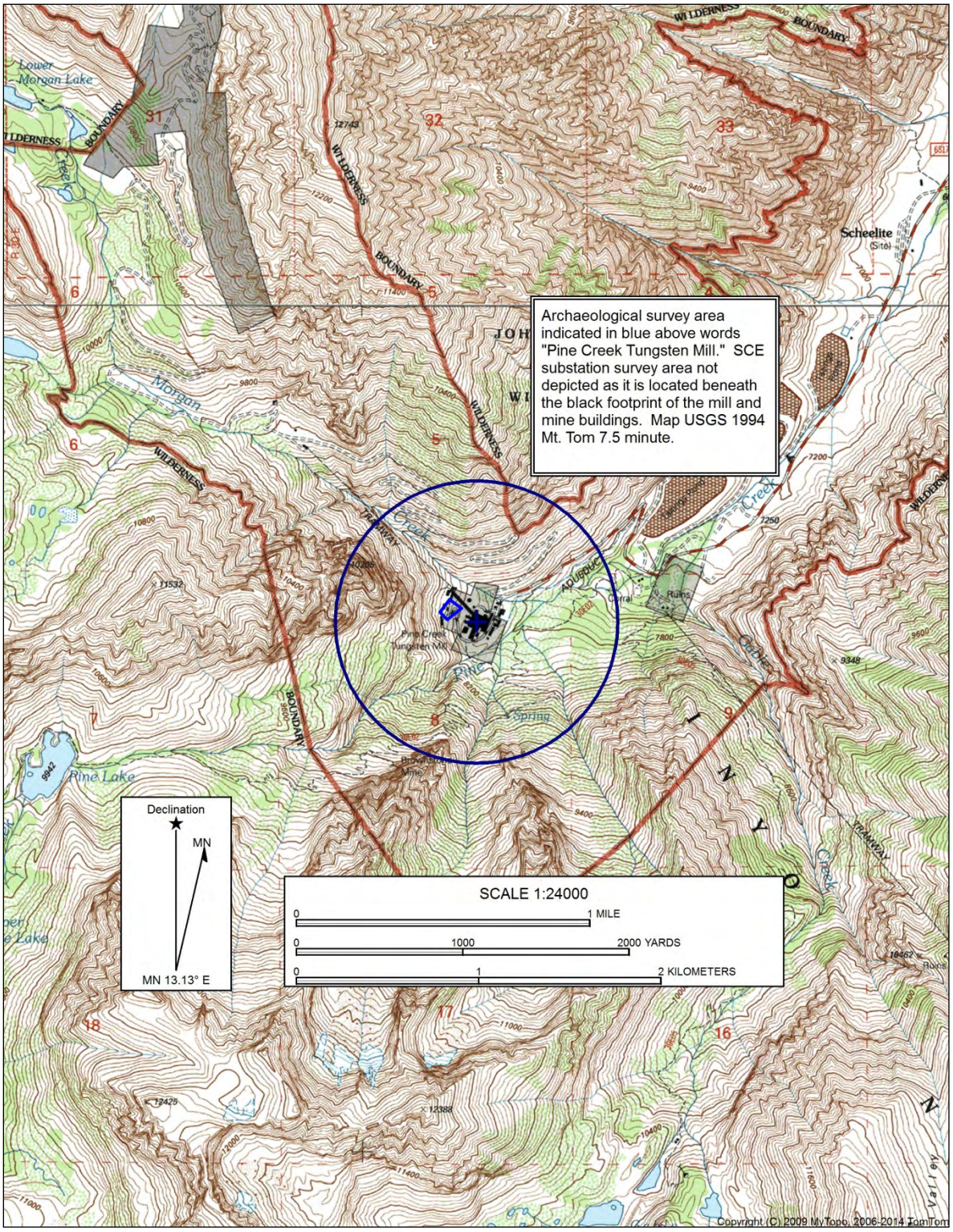

Figure 8. Archaeological survey map (1994, USGS, 7.5 Minute Quadrangle: Mt. Tom)

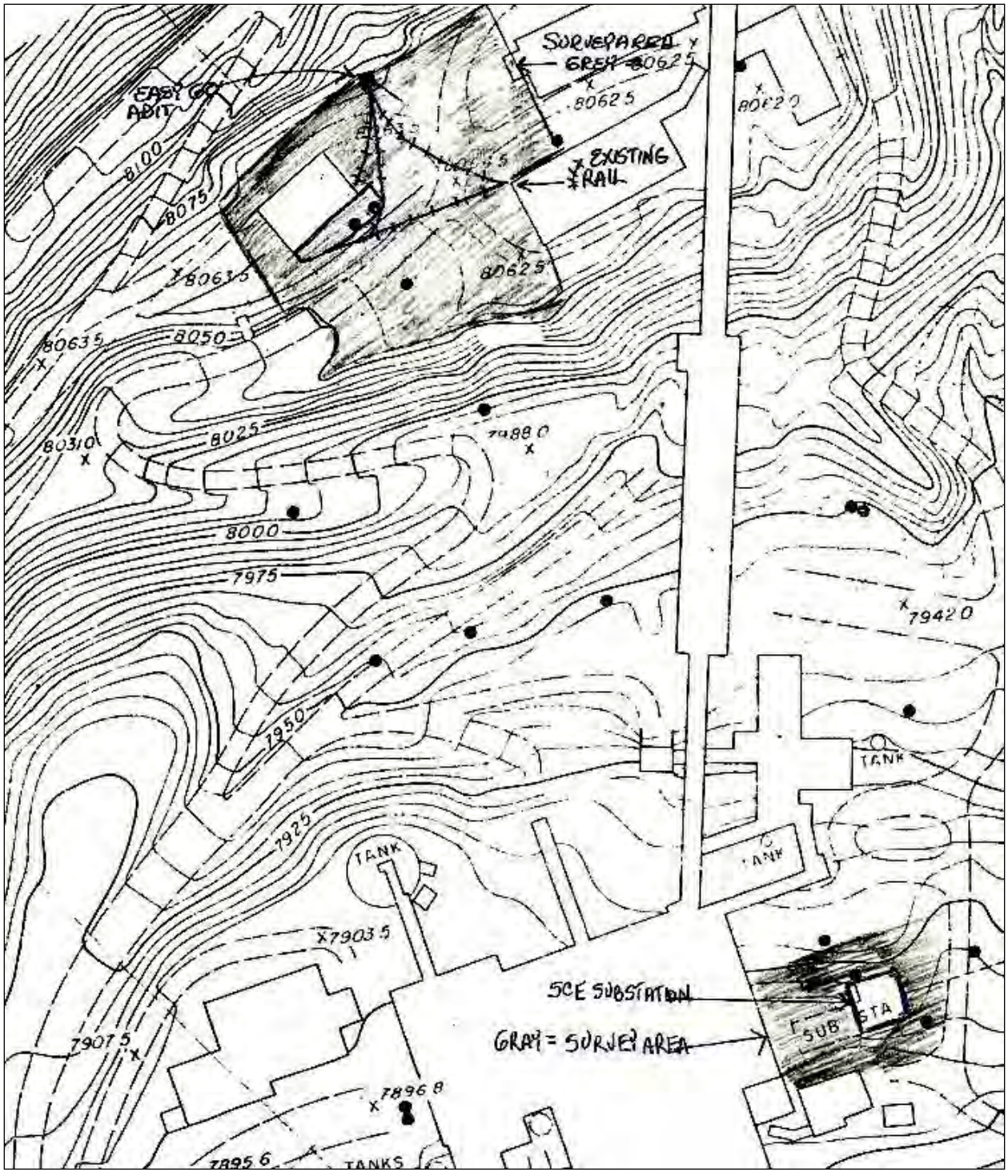

Figure 9. Archaeological survey coverage map. Base map courtesy of Pine Creek Mine, LLC. (Union Carbide n.d. *Topographic Map of Pine Creek Canyon Scheelite to Tailings Pond for Union Carbide Corporation, Mining & Minerals Division. Bishop, California, 93514).*

4 NATIVE AMERICAN CONSULTATION (By S. Davis-King)

In April 2011 as part of the licensing process, FERC initiated consultation with the federally-recognized tribes with a connection to the Project area. Tribes contacted with regard to the proposed undertaking were:

1) Lone Pine Band Paiute-Shoshone Tribe: Letter asking if the Tribe would like to participate in the licensing process. No response received to date.

2) Fort Independence Community of Paiute Indians: Letter asking if the Tribe would like to participate in the licensing process. No response received to date.

3) Bridgeport Paiute Indian Colony of California: Letter asking if the Tribe would like to participate in the licensing process. No response received to date.

4) Bishop Paiute Tribe: Letter asking if the Tribe would like to participate in the licensing process. Letter received from the Tribe saying they would like to consult.

5) Big Pine Paiute Tribe of the Owens Valley: Letter asking if the Tribe would like to participate in the licensing process. The Big Pine Tribal Historic Preservation Office (THPO) responded that they would like to consult and be involved.

6) Utu Utu Gwaitu Paiute Tribe of the Benton Paiute Reservation: Letter asking if the Tribe would like to participate in the licensing process. No response received.

7) Bishop Paiute Tribe responded to Commission Invitation to say they would like to consult, and that there are of four pending applications within their area of interest.

This information, along with other consultation efforts, is found in Appendix F, which is a chronological log of agency and tribal contact.

Notice was sent to the California Native American Heritage Commission (NAHC; 15 February 2014), and a response received 19 February 2014 (Letter included in Appendix C). The NAHC maintains an atlas and files on sacred lands, and consultation with these documents failed to indicate the presence of Native American cultural places in the Project area. The letter did note that local tribes “consider the Round Valley/Rovana area very culturally sensitive.” The NAHC further recommended that Project information be sent to four tribes: the Big Pine Paiute Tribe, the Bishop Paiute Tribe, the Fort Independence Indian Community, and the Lone Pine Paiute-Shoshone Tribe.

Formal meetings were held with the Bishop Paiute Tribe THPO Advisory Committee at their October 2013 monthly meeting. The group expressed that they had reviewed the documentation provided, and it appeared that the areas which might have had cultural issues have been compromised by the mining activities, and that it does not appear that there are resources that will be affected. Still, they wished it to be known that Pine Creek canyon is the location of the origin story of the Paiute people (see separate entry supra), and that it should be recognized as an important area. Yet, they said, “the damage has been done. “There may be some trails in there

that are important, and these old trails may still be there; they are probably outside of the project." The THPO Advisory Committee can only pass information along to the Tribal Council, and ask the Tribal Council to make a decision about the Project. The THPO said he would refer to the Project to the Tribal Council and wished to attend the field meeting that would be held the following day (they later called to say they had a conflict and could not attend). A representative of the Bishop Tribe Economic Development Department called to discuss possible partnering with the Applicant on the hydroelectric project. The Project was described and contact information forwarded to the appropriate people. Follow up emails and telephone calls were placed and are listed in the Appendix F log. No comments from the Tribe have been received.

Formal meetings were held with the cultural department of the Big Pine Paiute Tribe and the Big Pine THPO in October 2013. The cultural committee representatives and the THPO visited the Pine Creek Mine and the Project area, investigated the Easy Go Adit area, and discussed the creation story about the Pine Creek area. The story told by Jennie Newland was read aloud, and tribal representatives were asked if they had concerns or issues they would like to bring up. It was conveyed that if the Project is as described, they thought they would not have any comments or concerns. The Tribe responded on the draft report with minor comments that have been addressed herein; memo is included in Appendix G.

Copies of this report have been sent to six tribal representatives, as listed below, for their review and comment. Consultation is ongoing.

Big Pine Paiute Tribe
Genevieve "Gina" Jones, Chair
ATTN: Bill Helmer THPO
P.O. Box 700
Big Pine, CA 93513

Bishop Paiute Tribe
Dale "Chad" Delgado, Jr., Chairman
ATTN: Raymond Andrews THPO
50 Tu Su Road
Bishop, California 93514

Bridgeport Paiute Indian Colony of California
John Glazier, Chairman
ATTN: Justin Nalder
P.O. Box 37,
Bridgeport, California 93517

Fort Independence Indian Reservation
Israel Naylor, Chairperson
ATTN: Priscilla Naylor, THPO
P.O. Box 67
Independence CA 93526

Lone Pine Paiute-Shoshone Tribe
Mary Weuster, Chairperson
P.O. Box 747
Lone Pine, California 93545

Utu Utu Gwaitu Paiute Tribe of the Benton Paiute Reservation
Billy Saulque, Chairman
567 Yellow Jacket Road,
Benton, California 93512

5 RESPONSE TO STATE HISTORIC PRESERVATION OFFICER (SHPO) LETTER (By S. Davis-King)

On May 13, 2013, the California OHP sent a letter (FERC 2013 0411 002) to Lynn Goodfellow, Applicant for the Pine Creek Mine Hydroelectric Project, regarding several concerns they had. These are listed below with comments.

5.1 Adequacy of APE

The SHPO did not agree that the APE designated in an earlier document (Westfield 2013) was

> sufficient to address the direct and indirect impacts of the project… . The APE and field surveys should be broad enough to consider the potential eligibility of the existing tungsten mine facilities, and any historical archaeological resources that may be associated with the mining facility, any resources beyond the FERC boundary that might be indirectly impacted by the undertaking, and any unidentified resources in the project vicinity. The APE as proposed does not include the site of the adjacent mining facilities or consider the potential for historic properties that may be unrelated to this historic use.

The present report does not address issues of an APE specifically, as one has yet to be defined, but rather, attempts to provide the background information necessary to address potential impacts to the mining remains, investigate the potential for archaeological remains, and identify any potential historic properties that might be affected by the hydroelectric Project. The APE will be subsequently determined by the FERC.

5.2 Ground Disturbance

The SHPO felt that the proposed Project would have ground disturbing activities to underground mining features. Specifically, they felt that the Project could not be “implemented without causing any ground disturbance... [including] plugging the underground Easy-Go Adit, the

installation of a new turbine at the proposed plug, and construction of a penstock." Additional information was requested.

This aspect of the Project is not strictly an issue related to historic properties, but the Applicant has provided the following in response to the SHPO's concerns.

> Contrary to the statement in the letter from your office, the concrete "plug" is an existing structural bulkhead, not a "proposed" improvement. Construction was completed over 10 years ago (2002) and seismic and geotechnical studies were performed on the plug and surrounding area by qualified and licensed professionals. The studies were approved by FERC as to their adequacy, for the purpose of this application in 2012. The hydroelectric equipment to be installed will be connected to the plug improvements in a matter of days and may be removed, as needed, for maintenance and/or replacement. We intend to secure the newly installed equipment on a movable platform (a prefabricated railcar with all required equipment attached) and roll it into place near the plug. Once located, the entire railcar will be secured to an existing concrete platform and bolted to the manifold on the plug. Hence, no ground disturbance will occur in or near the project vicinity with the exception of the small staging areas immediately outside the two portals.

As noted above, the area outside the main portal was investigated for archaeological or other cultural remains, with negative results. The area outside the portal to the east was informally inspected in 2011.

5.3 Previous Research

The SHPO considered the previous research inadequate, and said the at the EIC should conduct appropriate records search and if the Project area has not been surveyed, archaeological and built environment surveys will be necessary as part of the identification of historic properties required.

Contact with the EIC was made and search results were incorporated into this report. In addition surveys for archaeological and historical resources were conducted in the Project area and beyond, as described in this report.

5.4 Native American Consultation

The SHPO wrote that Native American consultation was insufficient

> due to the constrained time frame (seven days) placed on the contacted parties. Moreover, a request to participate in FERC's licensing process is not equivalent to an invitation to participate in government-to-government consultation for the

> purposes of Section 106. Please contact the Native American Heritage Commission to identify all of the tribes that may be affiliated with the proposed project area, including those that are not federally recognized, as part of the good faith effort to identify any tribes that might attach significance to any historic properties.

The reader is directed to the Native American consultation section, infra. The NAHC was contacted, and tribal consultation is ongoing.

5.5 Additional Information Requested

The SHPO asked for two additional submissions: (1) a signed copy of Section 106 delegation of consultation authority letter from the FERC; and (2) photographs of the proposed Project site, including the tunnel, adit, and associated mining facilities. The letter delegating Section 106 responsibility is located in Appendix E and photographs of the mining facilities are included in the Historic Context and Overview section and those following below.

The SHPO received correspondence from the Forest concerning the ownership of the subject property claims and stating that the undertaking is located on federal land. The SHPO wrote that the "issue of land ownership and the designation of a lead agency needs to be resolved before Section 106 consultation can continue." This issue is not addressed nor is in the professional capabilities of the authors of this document.

The SHPO received correspondence from Sackheim Consulting regarding the Project, stating that "there are potentially three additional undertakings proposed by the Pine Creek Mine, LLC in the immediate vicinity of the Pine Creek Mine Hydroelectric Project. If this is the case, it would be advisable to consult on all of the proposed undertakings concurrently." The Pine Creek Mine has an existing small hydroelectric generation plant that was exempt from FERC licensing and is subsumed in the Project investigation area, and Project 12532. There are no additional projects being planned by the Applicant in this area.

6 MEETING WITH FOREST SERVICE REPRESENTATIVES (By S. Davis-King)

Several meetings with the Forest were attempted, including the day before and the first day of the "government shutdown" in October 2013. Additionally, two telephone calls were made to the Forest to speak with the Forest Archaeologist, but the response was that the position was vacant and no one had filled the position. As a final attempt to consult with the Forest, contact as made on 13 February 2014 with Sheila Irons, Lands Specialist of the Mammoth and Mono Lake Ranger districts, and she said a new Forest Archaeologist had just been hired and she would make arrangements for the team to discuss the Project. A telephone conversation was held followed by a meeting on 21 March 2014, with the issues below discussed.

6.1 Impacts to the Mine Interior Workings

The Forest is concerned about adverse effects to the interior mine workings as a result of the Project, and what may have already occurred as a result of the plug. The nature of historic mine evaluations was discussed, and the fact that few mines are found eligible for the NRHP as a result of their interior workings, largely because safety issues prevent investigation and mapping of such remains, and because National Register Bulletin 42 (*Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties*) specifically avoids inclusion of interior workings in the evaluation of mining properties. It was conveyed that sufficient archival data likely survive to convey important information about the mine's interior that would be satisfactory and support any eligibility statement if the mine is considered eligible for the NRHP.

6.2 Land Ownership Issues

As discussed above under the "Response to SHPO Letter," the authors of this report were not tasked to investigate land ownership issues that must be resolved at a legal level.

6.3 Downstream Impacts

The Forest expressed concerns that if the plug burst, there might be downstream affects to resources including other mining remains, historic homes, prehistoric resources, and more. The Applicant believes this has been addressed by Sierra Geotechnical Services in a study dated December 2011, filed in the FERC eLibrary as Submittal 20120209-5045. Additionally, the potential for downstream (indirect impacts) to potential historic properties can be addressed in a Heritage Resources Management Plan, if one is prepared, or in the official document used to conclude the Section 106 process.

7 HISTORIC CONTEXT AND OVERVIEW (By L. Trew and R. Herbert)

The following discussion addresses the history of Pine Creek Mine in Inyo County, California from its founding to its closure, and places Pine Creek within the historic context of tungsten mining in the United States. It reviews key periods of development including the discovery, use, and industrial development of tungsten, World War I, the Great Depression, World War II, the Korean War and Government Stockpile Program, and Vietnam War. The mine underwent several stages of development under different ownership. The existing structures of the mine including the Easy Go Adit were primarily developed during and after World War II, and are located at an elevation of 8,063 feet. The history of tunneling into the mountain is a complicated tale, and begins primarily in 1918 at the 11,300 foot level.

7.1 Early History of Tungsten and the Pine Creek Mine (1750s – 1914)

Tungsten was not commercially useful until early in the 20th century. Tungsten has the highest melting point of any metal at 3400º C, and is resistant to corrosion by acids. It is part of the wolframite and scheelite mineral groups, which were twice independently discovered in 1758 and 1781, respectively. At that time, no practical uses were known, because, as noted by metallurgical engineer W.P. Sykes, "no one had succeeded in overcoming the brittleness so typical of the unworked metal at room temperature." As metallurgical developments led to new fabrication methods, metallurgists discovered practical uses for tungsten. Commercial use of tungsten began in 1905, and it was primarily used in fireproofing cloth used as curtains or drapery, as a mordant in dyeing, and in silk manufacture to add weight to the fabric. By 1908 it was used more extensively, as industries developed complicated technical and scientific methods of working the metal. This led to production of ductile tungsten wire and use of tungsten in production of steel alloys to increase their hardness. Tungsten wire was crucial for making practical incandescent lights, because its high melting point meant tungsten wire could withstand heat generated in a light bulb (*Engineering and Mining Journal* [*EMJ*], 11 November 1907:818; Kurtak 1998:6-7; Mathewson 1953:450-452; Ridge 1968:1553).

By 1910, production of tungsten in the US, by state, in order of importance, was in Colorado, California, and Arizona. The Atolia Mining Company in San Bernardino was the largest producer of tungsten in California, and maintained this status into 1940. In 1912, new uses for tungsten included its use in the Röntgen tube or x-ray, which "gave the ray operator an indestructible target, upon which the cathode rays may be more closely focused, resulting in shaper definition and shorter exposure." However, it was its use for projectiles and armaments that greatly increased demand during times of war (Department of the Interior, Bureau of Mines [DOI, BM] 1938:568-570; *EMJ*, 11 November 1907:818; *EMJ*, 27 January 1912:211).

The Pine Creek deposits, located in the Sierra Nevada at an elevation of 11,400 feet, were first discovered by mineral surveyor M.B. Sherwin as a silver-lead deposit. However, the claim lapsed when the assay results were obtained (*EMJ*, 10 April 1926:6).

7.2 World War I and Aftermath (1914 - 1923)

World War I generated a high demand for resources including tungsten. The price of tungsten climbed to unprecedented heights, and John Ridge, editor of *Ore Deposits in the United States*, noted that "the wartime boom reached a peak in April 1916 with some concentrates selling for $93.50 per short ton unit of [tungsten oxide] WO_2 at the mills." By 1918, California was a leading producer of tungsten with its primary output coming from the Atolia Mining Company. At this time, the mines of Inyo County were becoming large producers of tungsten (*EMJ*, 12 January 1918:90-93; *EMJ*, 16 February 1918:354; *EMJ*, 15 June 1918:1109; *EMJ*, 8 February 1919:285; Ridge 1968:1553).

With high prices and demand for tungsten in 1916, Standard Tungsten Company and Tungsten Mines Company developed claims in the Tungsten Hills west of Bishop. These two companies erected several mills with daily capacities of 30, 50 and 300 tons each, built roads, brought power in from Bishop Creek, and established a permanent camp later called Brown's Camp. This development encouraged continued prospecting around Bishop. On April 22nd 1916, Billie Vaughn and Arch Beauregard relocated the claims at Pine Creek. They began mining with a 6 x 15 Wilfey concentrating table, which was cut into three sections to fit onto mules for transport up the mountain. Historian Joseph Kurtak reported, "Once in place, a stream of water mixed with sand-sized material was run across the table surface which vibrated with a side-jerking motion," which "allowed minerals with high specific gravities such as molybdenite and scheelite to concentrate at one end of the table and worthless sand at the other." Vaughn and Beauregard screened the ore across this table and packed it back down the mountain on mules, because they could not get heavy crushing equipment up to the mine. To develop the mine further, they received financial support from Cooper Shapely and Fred Close. Pine Creek Tungsten Company was formed in 1918, and Shapley was president. Pine Creek Tungsten Company built a road up the mountain to reach the mine, brought power to the site, and erected a mill with a 300 ton daily capacity, which was in operation by December of that year (*EMJ*, 29 April 1916:797; *EMJ*, 5 August 1916:271-272; *EMJ*, 12 August 1916:313; Knopf 1916:230-231). Kurtak noted that there was,

> a 2,200 ft. three-rail gravity tramway [, which] brought the ore from the mine portal down to the mill in small skips. Water came to the mill site via a 2,000 ft. pipeline from a dam built on one of the Morgan Lakes. In the mill a jaw crusher and ball mill ground the ore into sand-size grains. These were mixed with water and run across a system of five concentrating tables, similar in design to the original used by the Beauregards. The tabled concentrates were dried and bagged for shipment … [Kurtak 1998:28].

Pine Creek Tungsten Company drove the first tunnel into the mountain, into what was later called the south ore body (See Figure 11). The mine operated at an elevation of 11,300 feet, and was the highest operating mine in California. Levels A and B and the Glory Hole were part of the mining operations in the south ore body (See Figure 13). With the end of World War I and the import of cheaper Chinese concentrates, prices for US-produced tungsten fell, causing the market to collapse. Eventually all tungsten mines in the United States stopped production and shut down. The Pine Creek Tungsten Company went bankrupt in 1919 after processing only 4,371 tons of ore, and Kurtak noted that it was "barely enough to get the machinery running properly" (Kurtak 1998:27-28; Ridge 1968:1534).

7.3 The Great Depression (1924 – 1939)

Tungsten mines in China dominated the world market between 1919 and 1926, and at this time the federal Bureau of Mines reported that "the principal uses of tungsten are in the manufacture

of high-speed-tool steels, cemented tungsten carbides, stellites, and electric-light and radio-tube filaments; in the preparation of various chemicals, such as pigments; and in the tanning of white leather." A tariff of 200 percent was set to stimulate mining in the United States by raising the price of imported tungsten, and Pine Creek reopened under the ownership of Tungsten Products Company in 1924. They implemented improvements to the mine including a new adit at 11,000 feet drilled below the upper adit originally constructed by Pine Creek Tungsten Company, to improve ore-handling. Mining was conducted by the operation of a glory hole or open pit, a mining technique that used a system of haulage ways beneath a block of ore. The *Engineering and Mining Journal* described machinery and techniques at the mine, reporting that "Ingersoll-Rand drills, No. 248 were used in adit work; Sullivan D.O. 33 and Denver Rock Drill No. 93, hand held drills, in glory hole work, and a No. 73 wet stopper for raising." The journal also reported that there was a blacksmith shop with power sharpeners at the upper adit or B Level, and four 250-cu. ft. Ingersoll-Rand compressors driven by a 25-hp motor or short center belts at the lower adit or A Level (See Figure 10). Miners transported ore to the mill by an aerial tramway. A 10 x 20-inch jaw crusher crushed ore, and the journal noted that "the crushed product [fell] upon a grizzly serving a 9 x 15-in. jaw crusher." The machinery for the mill was chosen based on its ability to be disassembled and moved up the steep mountain road. A camp, located at 10,500 feet, connected with the mine by a mountain road that terminated at 8,500 feet. Lumber to build the mill and other buildings was cut from mountain timber (DOI, BM 1938:568-570, 572; *EMJ*, 19 December 1925:969-972; *EMJ*, 10 April 1926:605-606).

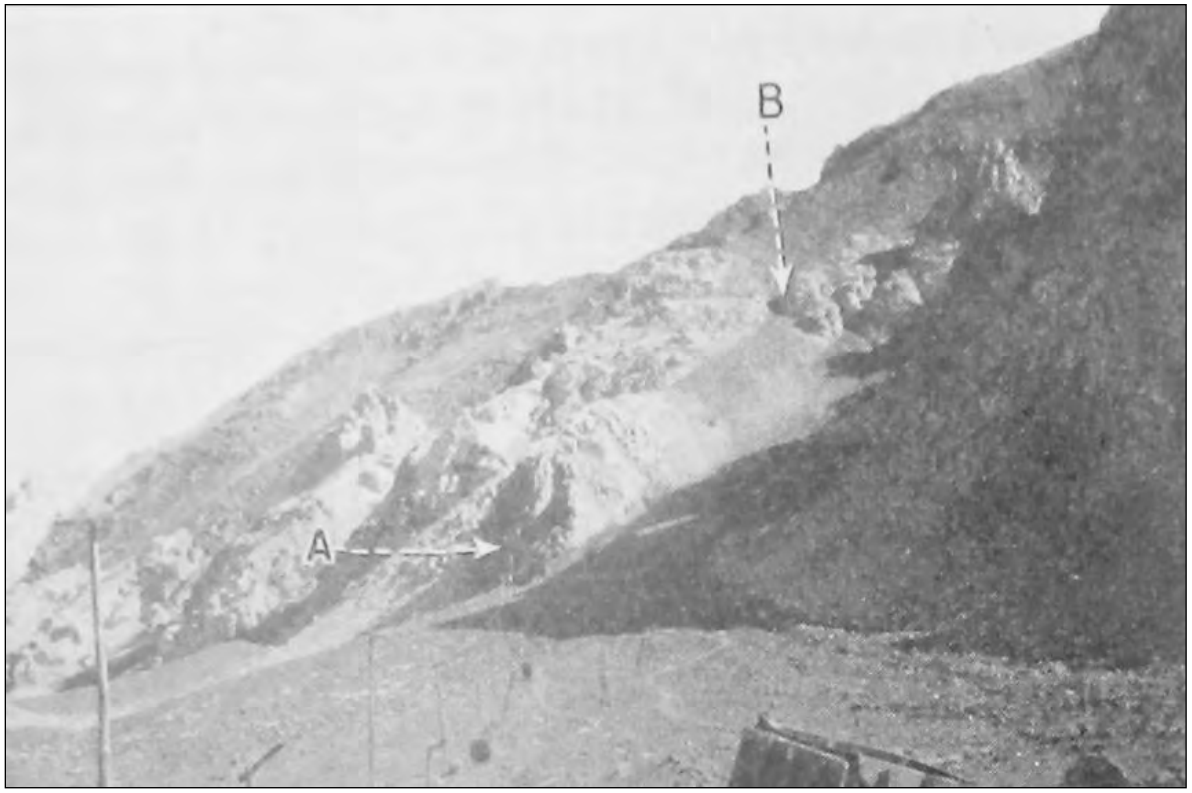

Figure 10. Outcrop of Tungsten deposit, showing upper and lower adits at B and A (Photograph from *Engineering and Mining Journal,* 10 April 1926:606).

For a time it seemed that the mine would operate for many years, but in November of 1926, heavy snows closed the mine. Tungsten Products Company considered building a camp and mill at a lower elevation and connecting the mine to the mill with an aerial tramway, but no such system was built under their ownership. In 1927, creditors of the Inyo Bank forced Tungsten Products Company into bankruptcy. The California Division of Mines noted that "between 1927 and 1936, the [Pine Creek] mine was idle except for a brief period in 1933 when it was operated by Herbert Sillinger" (Division of Mines, Dept. of Natural Resources, State of California [DOM, DNR, CA] 1956:23; Kurtak 1998:34).

In the mid-1930s, business and industry in the United States struggled with development during the depths of the Great Depression, but worries about a war in Europe led to increased prices for tungsten. Additionally, the use of ultraviolet light to illuminate fluorescent scheelite while prospecting resulted in more claims and reopening of mines. Promoters approached the Union Carbide Corporation between 1927 and 1935 to purchase Pine Creek mine. The price of tungsten did not rise high enough to pique their interest until 1935, and by December of that year Union Carbide, through their subsidiary U.S. Vanadium Corporation, acquired Pine Creek Mine. At this time, U.S. Vanadium repaired and upgraded buildings, structures, and equipment necessary for the production of tungsten. They also addressed issues with mining in the high Sierra not previously overcome by other operators. This included a new access road to the mine. Before the roads were built, mules transported supplies. Pine Creek utilized George Brown, a Paiute Indian, to transport materials necessary for the construction of power lines in 1937. He was a well-known "packer" used by several local mines to get equipment and supplies up the rough mountain side. Brown operated his packing business between 1930 and 1943. His "jumping off point" to the mines became known as Brown's Camp, which is located at the west end of Pine Creek Road. U.S. Vanadium completed a new mill with a 250-ton per day capacity at Pine Creek, but did not produce concentrates in 1937. Development of the mine and mill site continued over the next four years (DOI, BM 1938:568-570, 572; Kurtak 1998:38-41).

The Japanese invasion of China in 1937 led to fears that export of Chinese tungsten would end, which caused market prices to skyrocket and supplies to be scarce. The *Minerals Yearbook 1938* described this as a "frantic demand" for the metal, and reported that "production in the United States was the largest of record, except for the war years, 1916-1918 ... many new domestic producers appear[ed] during 1937, new properties were prospected and developed, old mines reopen[ed], and old dumps were worked." In California the largest producer was still Atolia Mining Company in San Bernardino County, which shipped 329 short tons of the 511 tons of tungsten concentrates from scheelite produced in the state (DOI, BM 1938:568-570, 572; Ridge 1968:1534-1535). Nevada was the largest producer of any state at this time (DOI, BM 1938:568-570, 572).

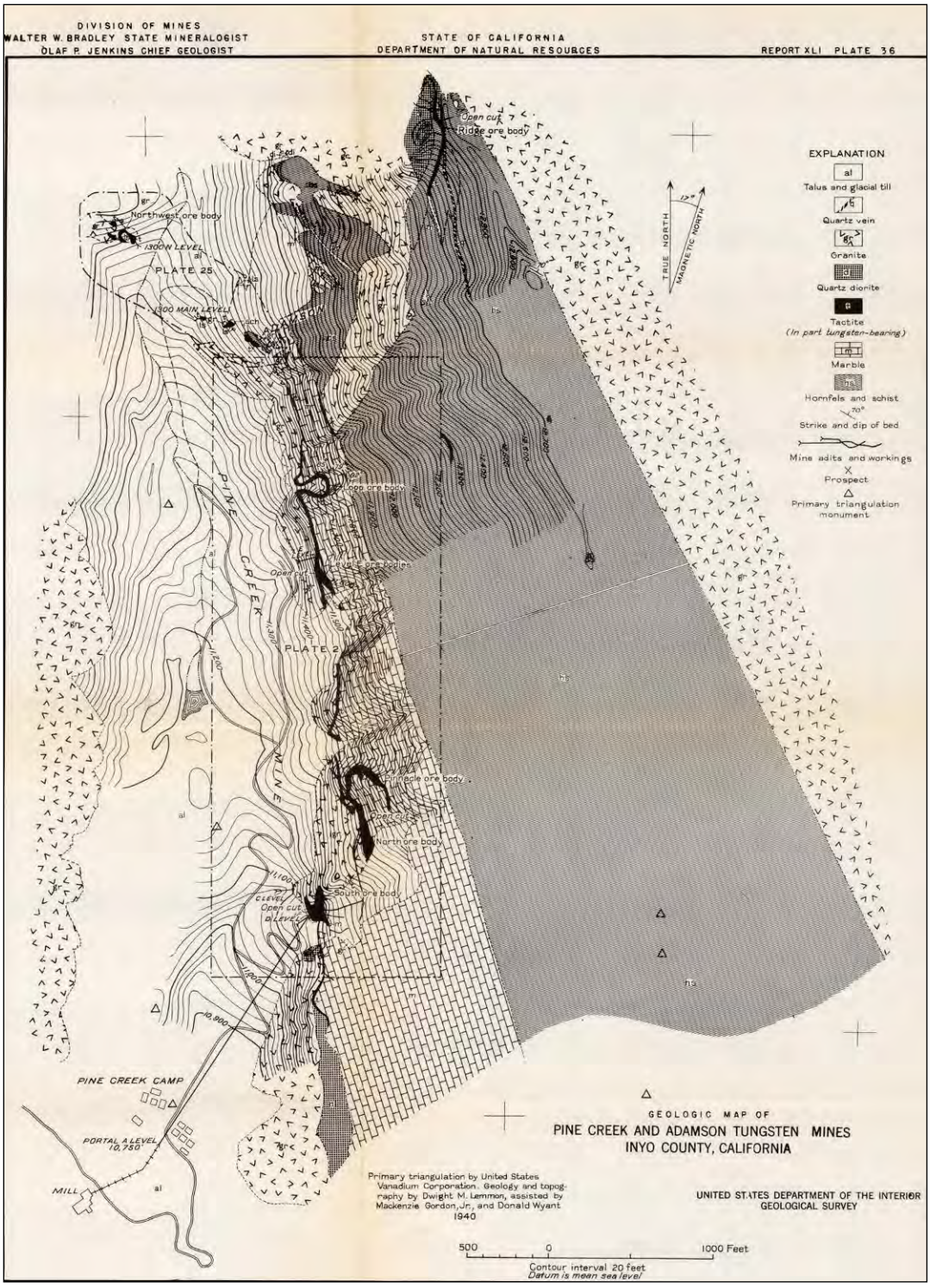

Figure 11. Map showing mine as it existed in 1940. Note Pine Creek Camp, Portal A and mill at lower left, at elevation 10,750 (State of California, Department of Natural Resources [SC,DNR], Report XLI, Plate 36, Geologic Map of Pine Creek and Adamson Tungsten Mines, Inyo County, California, 1940. California Geological Survey Library, Sacramento).

7.4 Tungsten Production During and After World War II (1939 - 1950)

The principal use of tungsten in 1940 was in manufacture of metal-cutting tools. Small quantities were needed for use in electric light and radio tube filaments, but the largest use, as noted by the Bureau of Mines, was "for military purposes, [where] tungsten was used as a core in armor-piercing bullets, as an erosion resistant liner in heavy ordnance, in armor plate, and in gun breeches" (DOI, BM 1941:615-622). Increased industrial activity caused by the beginning of World War II in Europe created a heavy demand for tungsten, and "universal armament activities in 1940 put further emphasis on the strategic nature of tungsten." Additionally, exports from China were diminished, and the bureau reported that "the search for domestic deposits of tungsten ores was greatly stimulated, and many small lots ranging from a few hundred pounds to several tons were produced from new or previously abandoned deposits." President Franklin D. Roosevelt (FDR) issued Proclamation No. 2413 regarding the export control of strategic products, which named several materials, including tungsten, as vital to defense and required export licenses. The United States government began to stockpile tungsten concentrates. Federal law fixed the price and sale of tungsten during World War II, and the bureau later stated, "the Bishop Tungsten area became as active as available manpower permitted." It added, "shipments of tungsten concentrates from domestic mines increased 24 percent from 1939 to a near all-time high of 5,319 short tons (60 percent WO_3) in 1940..." California's maximum shipment of tungsten concentrates was in 1943 at 3,871 short tons (DOI, BM 1940:617; FDR Library 2011: July 2nd, 1940; Ridge 1968:1534).

In the 1940s, U.S. Vanadium Corporation, as recorded by Paul Bateman of the U.S. Geological Survey, mined "by means of 4 main levels, known as levels 250, A, C, and E, at elevations of 10,540; 10,070; and 11,370" (See Figure 14). They operated a mill with a 350 or 500 ton daily capacity at Pine Creek, and were constructing a mill with 1,200 to 1,300 ton daily capacity at a new site 3,000 feet below the mine portal at the junction of Pine and Morgan Creeks to replace the old mill, which is the site of the study area for this report (See Figure 12) (DOI, BM 1943; *EMJ*, November 1941). A three section aerial tramway 11,000 feet long connected the mine to the new mill (Bateman 1945:1; DOI, BM 1941:615-622; *EMJ*, November 1941:72). The *Engineering and Mining Journal* described the process at Pine Creek in an article in November 1941:

Figure 12. Concentrating and chemical treatment plant of U.S. Vanadium Corp. at junction of Pine and Morgan Creeks, elevation 7,700 ft. (Photograph from *Engineering and Mining Journal*, November 1941: 72.)

Ore is hauled by a 5-ton electric storage-battery locomotive, in 10-car trains, using 3-ton Granby-type side-dump cars, to a crushing plant at the mine portal consisting of a 20-in. gyratory crusher set to crush to 4-in. size at rate of 160 tons per hour. Crushed ore is conveyed by a … tramway … with a capacity of 100 tons an hour, to the new mill ... The buckets from the tramway discharge into a lower tramway bin, where the ore was fed by a pan feeder to a Symons 5½ ft. short-head crusher set to a ¼ inch opening. This crushed ore is conveyed to four 1,200-ton circular steel storage bins over a Merrick weightometer for recording tonnage. The mill had four sections, and "in each section the ore was fed to a 6x5-ft. March ball mill of the open-end type, in closed circuit with a 60-in. Akins classifier. The

> ore was ground to approximately 90 percent minus 60 mesh, and went to flotation machines at a pulp density of 25 percent solid [*EMJ*, November 1941:72].

Furthermore, the Bureau of Mines stated that "large tonnages of complex tungsten-molybdenum ore [were] blocked out, and a suitable method of separation [was] developed involving selective flotation, with chemical treatment of the flotation concentrates to raise the tungsten in the final product to the 60 percent range." A chemical plant on Pine Creek recovered tungsten with the use of continuous pressure autoclaves treating tungsten with steam and sodium carbonate to separate from the concentrates soluble sodium tungstate, which underwent a purification process to produce a marketable grade synthetic scheelite. The company treated concentrates from its own mine and also purchased low-grade flotation concentrates from other local mines including Brownstone, Tungstar, Adamson, and Hanging Valley mines. By this time Pine Creek was the nation's largest mill with the largest deposits in the world (DOI, BM 1941:615-622; *EMJ*, November 1941:72; Kurtak 1998:154-173).

The federal government cancelled contracts to purchase tungsten concentrates at the end of World War II, and the price of tungsten declined, "once again forcing curtailment or abandonment of most of the Bishop area properties." In 1945, Pine Creek did not produce any ore, but the Bureau of Mines noted that the "chemical plant … was operated part of January and from late July through December; as a consequence, production of concentrates was only half that in 1944." Pine Creek developed the Zero Level Tunnel at the end of the war in an effort to locate more ore bodies. It was drilled 1,500 feet below the A Level adit and intersected with the main ore body 6,500 feet into the mountain directly below A Level. The new adit also improved mining operations during inclement weather caused by heavy snows, because it became the main hauling level for ore and eliminated the upper portions of the tram. Other improvements to Pine Creek included the addition of a rotary nodulizing unit for scheelite concentrate to the treatment plant (DOI, BM 1947:660-665; Kurtak 1998:90-91; Ridge 1968:1534).

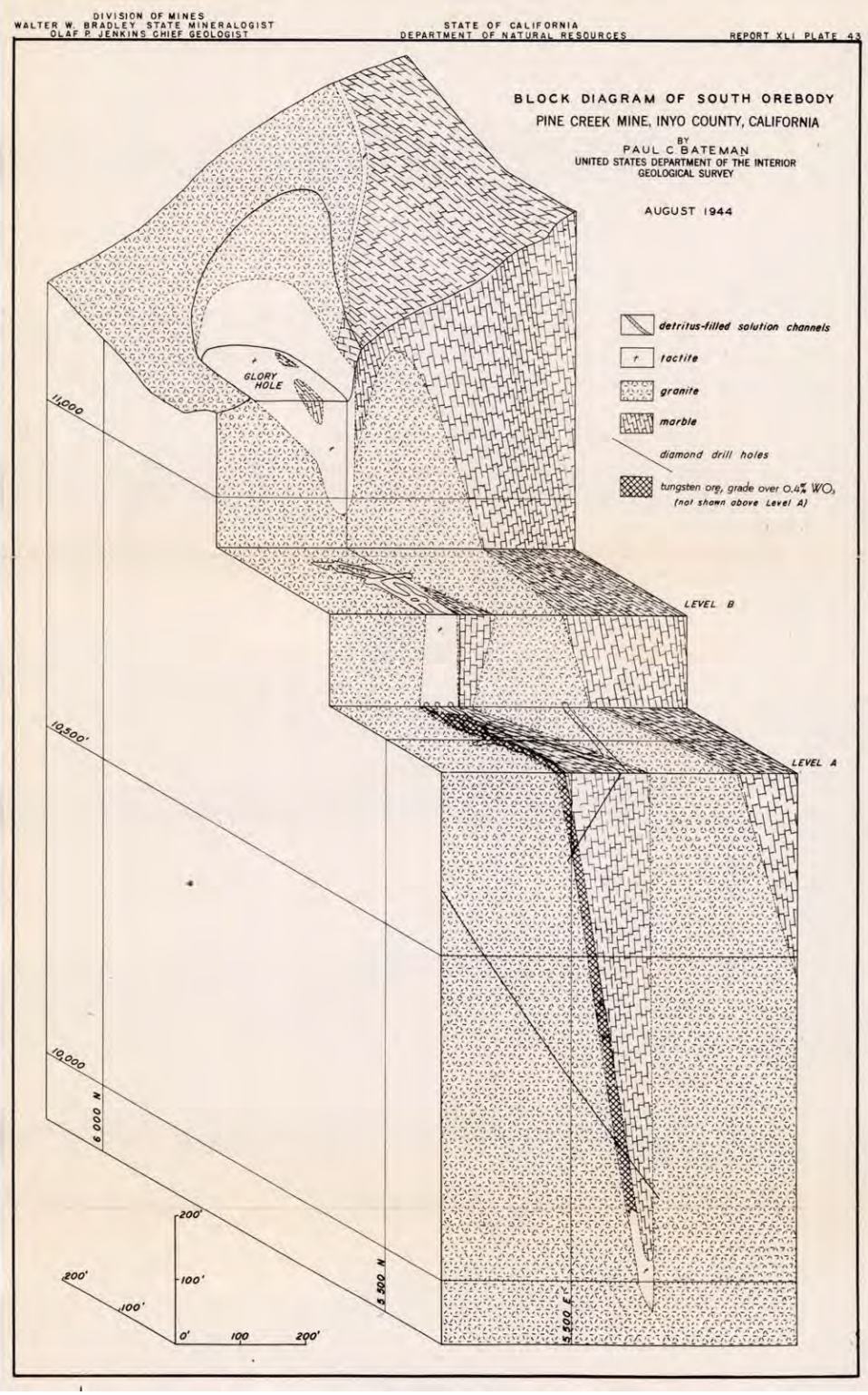

Figure 13. South Orebody showing mining levels and glory hole (State of California, Department of Natural Resources, Report XLI, Plate 43, *Block Diagram of South Orebody, Pine Creek Mine Inyo County, California,* August 1944. California Geological Survey Library, Sacramento) (SC, DNR 1944a).

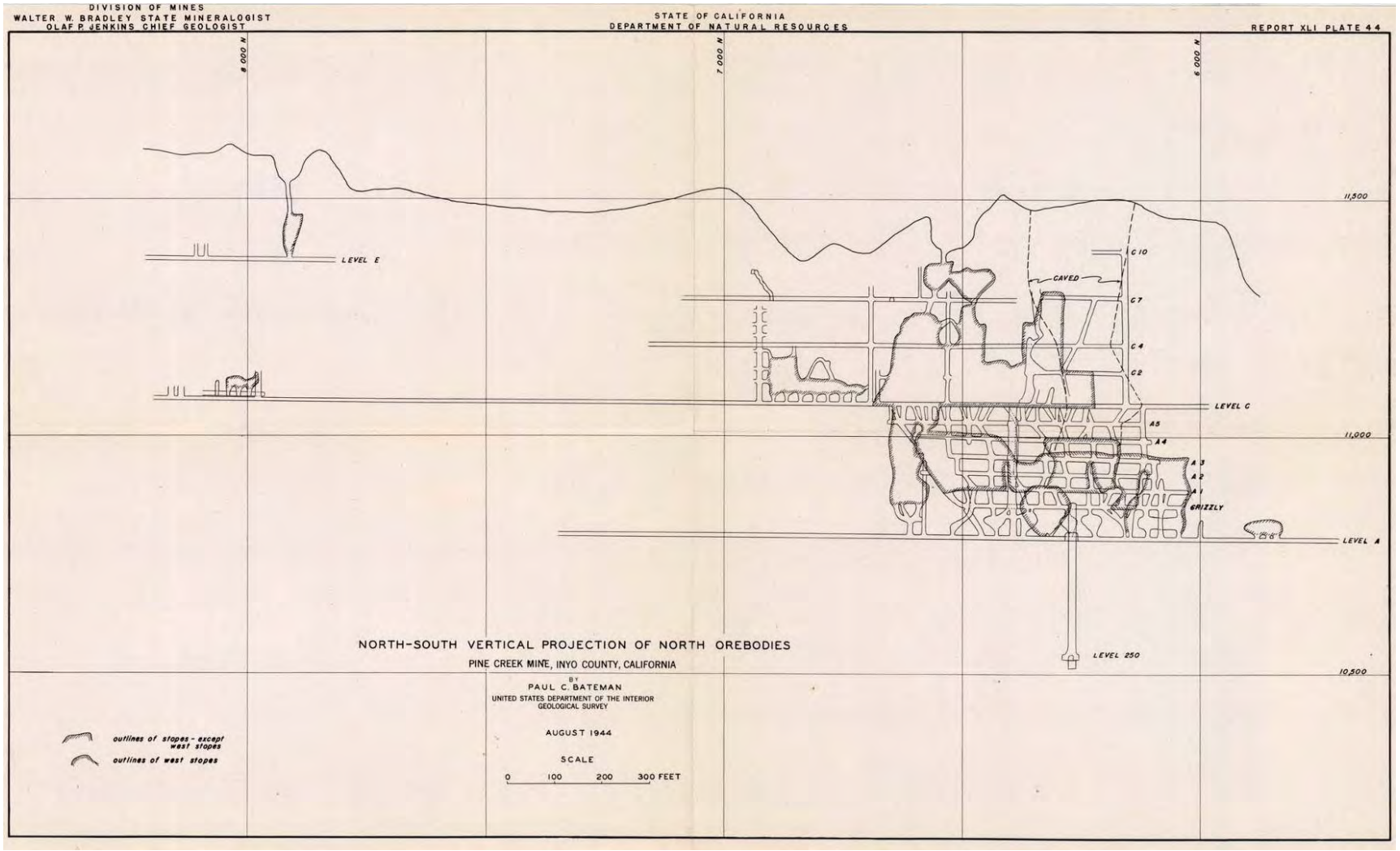

Figure 14. North-South Vertical Projection of North Orebodies, showing mining levels as of 1944 (State of California, Department of Natural Resources, Report XLI, Plate 44, *North-South Vertical Projection of North Orebodies, Pine Creek Mine Inyo County, California,* August 1944. California Geological Survey Library, Sacramento). (SC, DNR 1944b)

7.5 Korean War and Government Stockpile Program (1950 – 1958)

In June of 1950, North Korea invaded South Korea because of a dispute over the boundary set at the 38th parallel between the two countries. The United States sent troops to assist South Korea, and the federal government enacted the Defense Production Act that placed the United States on emergency military status. The hostilities in Korea, as with previous wars, substantially increased demand for tungsten, and, as the Bureau of Mines noted in its *Mineral Yearbook 1950* "international bidding for tungsten concentrates forces the price up to a level higher than at any time since World War II." Additionally, Chinese exports dwindled, and a shortage of tungsten developed. In April of 1951, the General Services Administration (GSA) started a buying program for tungsten to satisfy demand. They announced that the government would purchase tungsten concentrates for five years at $65 per unit (one unit equals 20 lbs), or until 3,000,000 units totaling 60,000,000 pounds were stockpiled. California produced the most tungsten followed by North Carolina and Nevada. Between 1900 and 1950, California produced 39,429 short tons of tungsten concentrates, 30.17 percent of the national total for that period. Nevada, Colorado and Idaho were also important producers with Nevada close behind California at 38,566 short tons (DOI, BM 1953; *EMJ*, February 1951:97; *EMJ*, December 1951:131; Kurtak 1998:106).

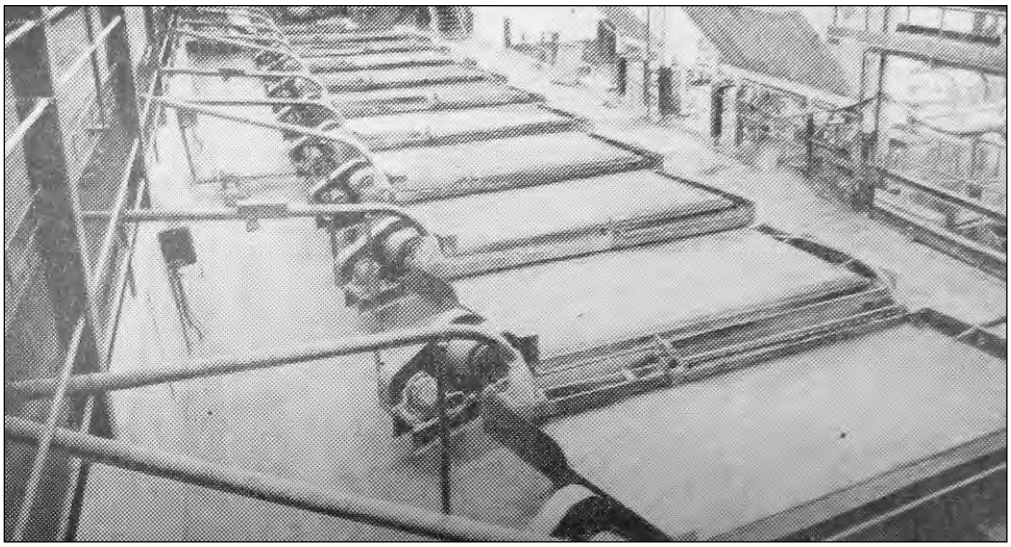

Figure 15. Tables separate coarse scheelite for regrinding, and make high-grade concentrate for shipment (Photograph from *Engineering and Mining Journal*, May 1951:83.)

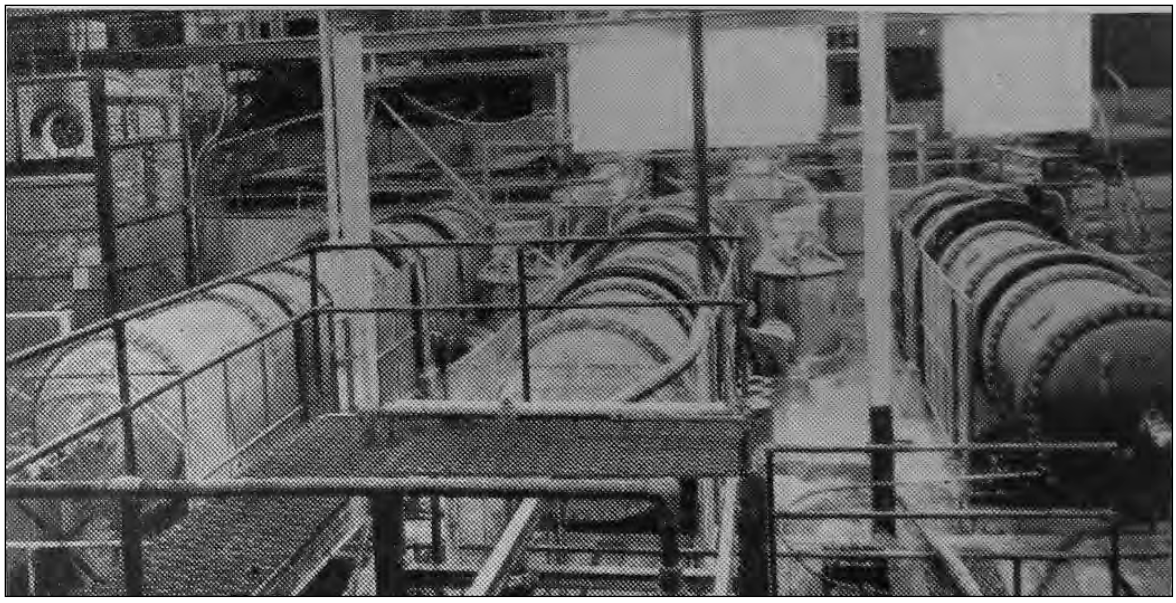

Figure 16. Chemical Plant makes pure tungsten and molybdenum products from concentrates. These are pressure digesters (Photograph from *Engineering and Mining Journal*, May 1951:83.)

Pine Creek increased operations by 70 percent in 1949 producing and processing ore from its own mine and handling materials from other mines or sources. In 1950, Pine Creek was in first place amongst United States tungsten producers. An article in the *Engineering and Mining Journal* described the existing machinery and buildings at the mine:

> Surface plant at Zero Portal: office building, containing engineering office, first-aid room, lamp room, wash and dry room, time office, shifters office, timber framing shed, electrical supply warehouse, oil storage.
>
> Primary Crushing Plant at Zero Portal: cars dumped with Differential Steel Car Co. rotary tipple into 150-ton coarse ore bin. Ore goes to 4 x 16 ft. Sheridan grizzly powered by 50-hp motor, which feeds 36 x 48-in. Traylor Type HB jaw crusher driven by 150-hp motor. Plus 3-in. crusher product fed to 1,000-ton storage bin at head of aerial tram loading station by a 30-in. 185-ft. conveyor belt. Tram buckets loaded by 30-in. Link-Belt heavy-duty apron feeder driven by 15-hp 56-rpm gear motors.
>
> Aerial Tram: operates between primary and secondary crusher plants; is 4,153 ft. long; supported by five wooden towers. Twenty six 20-cu ft. buckets ride system… [*EMJ*, May 1951:77]

The 1,000-ton mill and chemical plant, built in 1942, produced copper concentrates, molybdenum concentrate, a second molybdenum product, and a tungsten product using floatation and chemical treatments. The *Engineering and Mining Journal* reported, “the process

includes: secondary crushing of the ore at the foot of the aerial tram; fine grinding in a single stage; bulk sulphide floatation; separation of copper and molybdenum by floatation; floatation of scheelite with some powellite; chemical separation and purification of the tungsten and molybdenum…" (Figure 17).

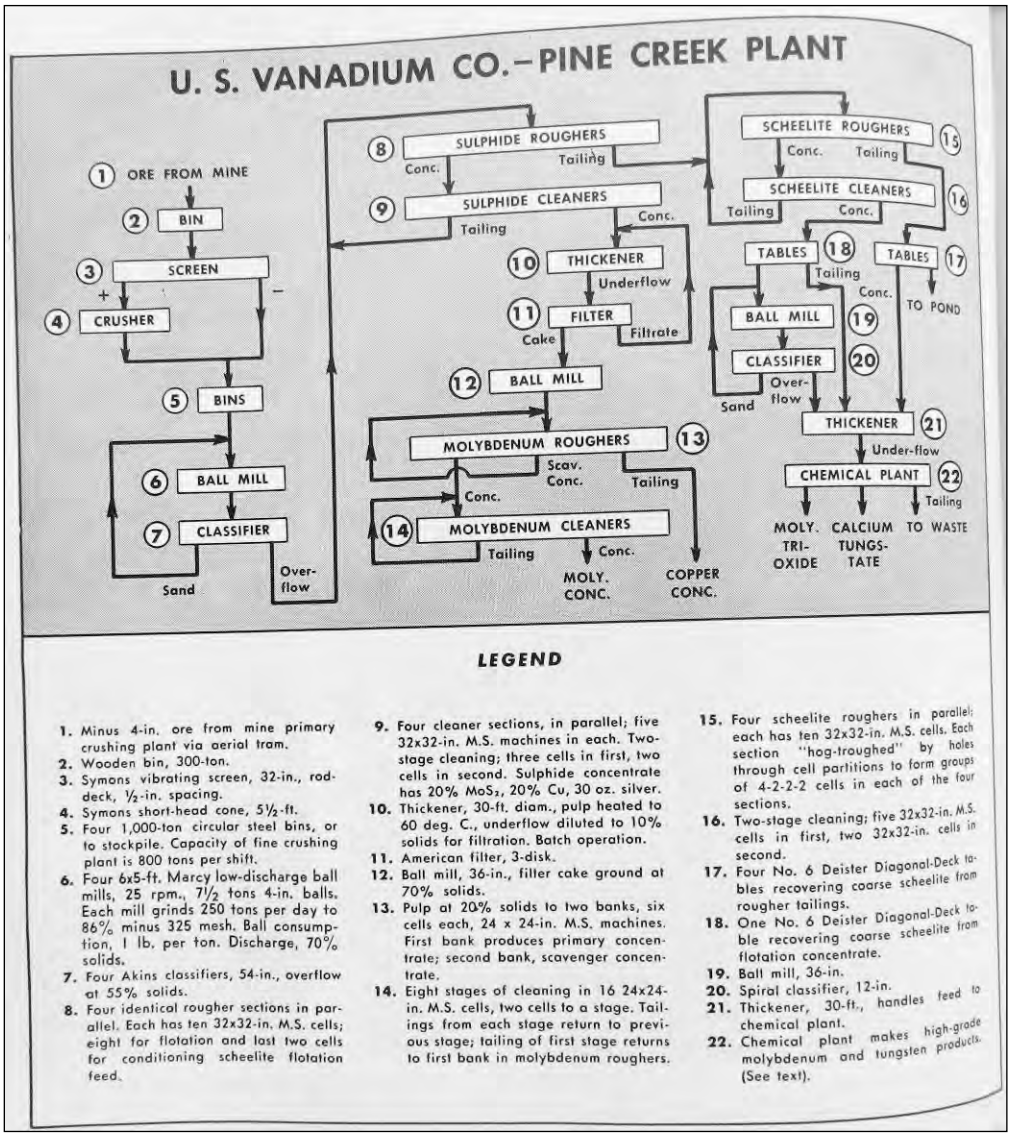

Figure 17. Mill flowsheet from *Engineering and Mining Journal*, May 1951:82.

By May of 1951, efforts at Pine Creek to increase production included enlarging Zero Tunnel from eight feet to twelve feet, driving a 1,500-ft. raise and ore pass to connect Zero Tunnel with older workings at higher elevations, mining upper workings (despite the difficulty to get ore down), and expanding the mill and chemical plant capacities. A separate crushing, conveying, and sampling plant were constructed at the Pine Creek mill site to process ores purchased from other mines. U.S. Vanadium hired vigorously to support increased production activities. Some of the employees were members of the Paiute and Shoshone tribes that lived in the local area.

The recruitment program doubled the number of employees, and created a housing shortage. The company built more houses at Rovana and Scheelite villages to accommodate new employees. Rovana Village was located near the mouth of Pine Creek at 5,000 feet in elevation; Scheelite Village was located near the mill. An avalanche in March of 1952 destroyed several houses in the Morgan Creek area, tore out a power substation and terminal for the aerial tramway, and crashed into the mill. The *Engineering and Mining Journal* reported that the "15 month-old Mike Holmes, son of Tom Holmes, mine superintendent, was buried under 18 ft. of snow and debris when an avalanche destroyed the Holmes house. Rescue workers found the boy two hours later unharmed and kept warm by two pet dachshunds." Operations at the mine stopped for only a month while everything was repaired. In 1955, the company completed the 1,500 ft. raise between adits (*EMJ*, May 1951:76-83; *EMJ*, May 1952:138; *EMJ*, February 1955:99; Kurtak 1998:107-11, 120-121; *Oakland Tribune*, 11 July 1976, 12D).

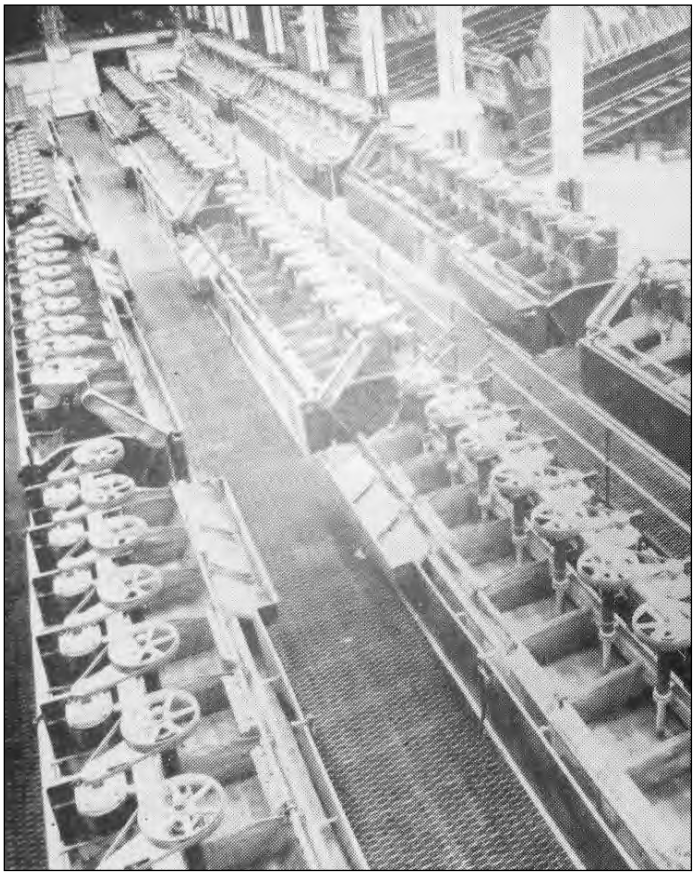

Figure 18. Flotation Section at Pine Creek uses M.S. machines, makes copper, molybdenum, and scheelite concentrate (Photograph from *Engineering and Mining Journal*, May 1951:83.)

The best production year for tungsten in the United States was 1955, but in June of 1956, the federal government reached its stockpile goals and ended its buying program in December of that

year. Pine Creek was the only mine operating in the Bishop area at the end of 1957 (Kurtak 1998:107-11; Ridge 1968:1534).

7.6 Vietnam War (1958 - 1975)

Tungsten production and demand continued to fall through 1959, and only two mines produced tungsten in the United States in 1958 and 1959 - Pine Creek Mine in California and Climax Molybdenum Mine in Colorado. The tungsten market began to recover in 1960, largely because of the United States involvement in the Vietnam War. Asian imports declined and production in the United States accounted for 70 percent of domestic consumption. The development of new fabrication techniques and tools including arc-casting, electron-beam welders, and electron gun and plasma-jet spraying devices created additional uses for tungsten, and also aided domestic production and demand. However, for a period between December of 1961 and September of 1963, the tungsten market seemed to be in decline. Russia and China flooded the world market with tungsten, which caused a decrease in prices that undermined American producers. Prices dropped from $24-$26 a unit to $15-$16 a unit within two months, and by December of 1962, prices fell to $8 per unit with an additional duty of $7.93 placed on domestic buyers. Concerns over whether the federal government would sell its tungsten reserves further depressed domestic market prices, but Russian and Chinese exports to Europe stopped, which allowed prices to recover and the outlook for domestic producers seem brighter. Again, tungsten was produced by only two mines in 1963, Pine Creek and Climax Molybdenum. Another supply shortage in 1964 caused prices and production to spike, but prices and demand stabilized between 1965 and 1968. Tungsten demand was stimulated by the war in Vietnam and the market for snow-tire studs, the federal government's stockpile sales policy, the absence of exports from China, and industrial activity in the US, Western Europe, and Japan (*EMJ*, February 1959:152; *EMJ*, February 1960:139;, *EMJ*, January 1962:123; *EMJ* February 1962:113; *EMJ*, February 1963:133; *EMJ*, February 1964:136-137; *EMJ*, March 1968:139; Kurtak 1998:111).

During this time, Pine Creek Tungsten Mine was, according to the *Engineering and Mining Journal*, "the largest and most stable operation in the district." Pine Creek did well despite the slump in the early 1960s caused by the flood of tungsten from China and Russia, because of the high demand for ammonium paratungstate (APT) produced from a process unique to the company. Ray Kurtak discovered the process working in the metallurgical laboratory at Pine Creek in the late 1950s. The process for APT was implemented in 1959 by adding two steps to Pine Creek's milling procedure (See Figure 19), and was reported by the *Engineering and Mining Journal* as the "first direct method for preparing pure tungstate from scheelite ore sources." The building of a full-scale APT plant at a site adjacent to the mill was done in 1959 and took eight months to complete, and the first product was shipped in January of 1960. The APT plant was designed by chemical engineer Lew Twichell in New York, and final design and construction was completed by Bob Klotzback, Carl Jealous, and Mal Twichell. According to Kurtak, "The success of the product, like the earlier scheelite process, put the company into the

forefront of the U.S. tungsten market…In honor of this pioneering work, Union Carbide received the K.C. Li award … in recognition of contributions that advanced tungsten technology" (*EMJ*, October 1956:103,135; Kurtak 1998:132).

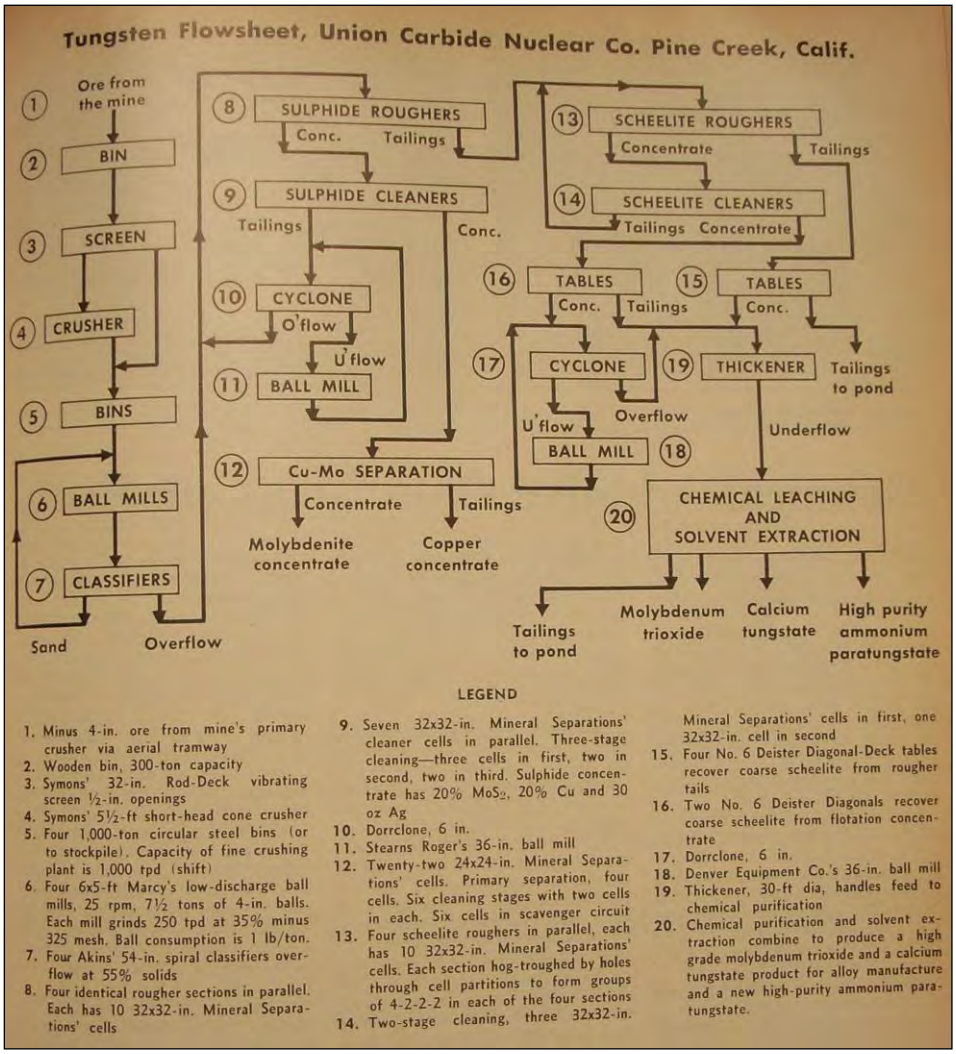

Figure 19. Mill flowsheet from *Engineering and Mining Journal*, October 1959:103.

Ore grades dropped as the mine's resources were depleted, so the company made plans to drill below Zero Tunnel in 1958 to see what ore, if any, extended further down. In the fall of 1960, miners started cutting the new Easy Go tunnel, which got its name for the labor saving improvements it created. The first 5,000 feet of the Easy Go were relatively simple to dig, but after a long weekend a cave-in occurred at the back of the tunnel, which left a large void and mud and water streaming everywhere. To correct the situation and move forward with the Easy Go, Kurtak noted,

> A pilot tunnel was driven for some 200 feet around the bad ground and timbered every foot of the way. Once the pilot tunnel had reached solid ground beyond,

> miners worked back through the weak ground, trying to stabilize it. Men worked in diver's wet suits as protection from the ice-cold water flowing everywhere. Concrete and chemical grouts were used with no avail. Stabilization was finally achieved through the use of steel I-beams set on three-foot centers. Wooden lagging was installed between the sets to prevent rock from coming in at the sides. [Kurtak 1998:136]

Further drilling of the Easy Go drained water out of Zero tunnel, because Easy Go intercepted with the fracture system that conveyed water through the mountain. As Kurtak explained, "At peak runoff, up to 8,000 gallons of water per minute would flow from the Easy Go portal, but the engineers had planned ahead for this, using knowledge gained from Zero level experience. A drainage ditch was excavated to handle the flow as the tunnel advanced." Once finished, miners delivered ore directly to the mill from Easy Go without the use of the aerial tramway and no longer needed to commute up the mountain. John Ridge, editor of *Ore Deposits in the United States*, reported in 1966 that, "the new Easygoing Tunnel has intercepted an ore body at an elevation of 8,100 feet. From elevation 8,100 feet to about 9,200 feet, the known part of this ore body consists of tactite confined in a south-plunging trough on the quartz-monazite contact south of and below the Main ore body." The company completed the Easy Go tunnel in 1970; it was two miles long and 60 feet below the ore body. Kurtak noted that in order "to mine the ore, two raises -- one a manway and the other for ore, were driven 1,300 feet up to the Zero Level. The connection was excellent, coming within two feet. An ore zone extending vertically for some 3,400 vertical feet could now be accessed through one tunnel." With the completion of Easy Go, the aerial tramway shut down. Zero Level facilities were abandoned and then permanently removed in the 1980s (Kurtak 1998:133-136; Ridge 1968:1534-1535).

7.7 The Decline and Closure of the Mine (1975 – 1990)

With a new process for creating marketable tungsten products out of low grade concentrates and completion of the Easy Go Tunnel, the decade of the 1970s started on a golden note. However by 1975, the future did not look so promising. Pine Creek mine historian Kurtak stated that Pine Creek's "massive tactite ore bodies had 'bottomed out' after extending three mining levels and nearly 3,400 feet below the original discovery point." He added that "there were no indications of ore beneath the Easy Go level and high-grade rock at the north end of the mine, used to sweeten the lower grade ores, was running out." The company tried to locate additional ore bodies in 1977 and 1983, but was unsuccessful. Tungsten prices hit a record high of $165 per short ton unit in May of 1977. This influenced Union Carbide to return to mining places once deserted for safety reasons, which eventually caused caving in the depths of the mine. It became a serious problem by 1978, noted Kurtak, who stated "… the caving began to threaten the integrity of a major raise connecting Zero and A Levels. In an effort to stabilize the caving, a raise was driven to the surface above A Level. Then over 100,000 tons of surface-waste rock were dumped down the raise, …which…was…1,400 feet deep." The company stabilized caving

in the mine, but high grade ore was lost. In the 1980s, China returned to producing tungsten and flooded the market with ore. Additionally, demand for carbide bits went down, because exploration subsided in the oil and mining businesses. These factors led to the collapse of the tungsten market. Decreases in ore grades coupled with an increase in operational costs and the market collapse eventually caused the closure of Pine Creek. Union Carbide closed the mine in 1982, and sold its mining assets in 1986 to several former executives. The new owners formed Strategic Minerals Corporation (Stratcor). Stratcor later became U.S. Tungsten Corporation, and reopened Pine Creek Mine for a final time in 1988. However, mining operations ceased in 1990 because of a depressed market. The mill continued to process stockpiled ore until it closed in 1994 (*EMJ*, March 1978:158-160; Kurtak 1998:146-153).

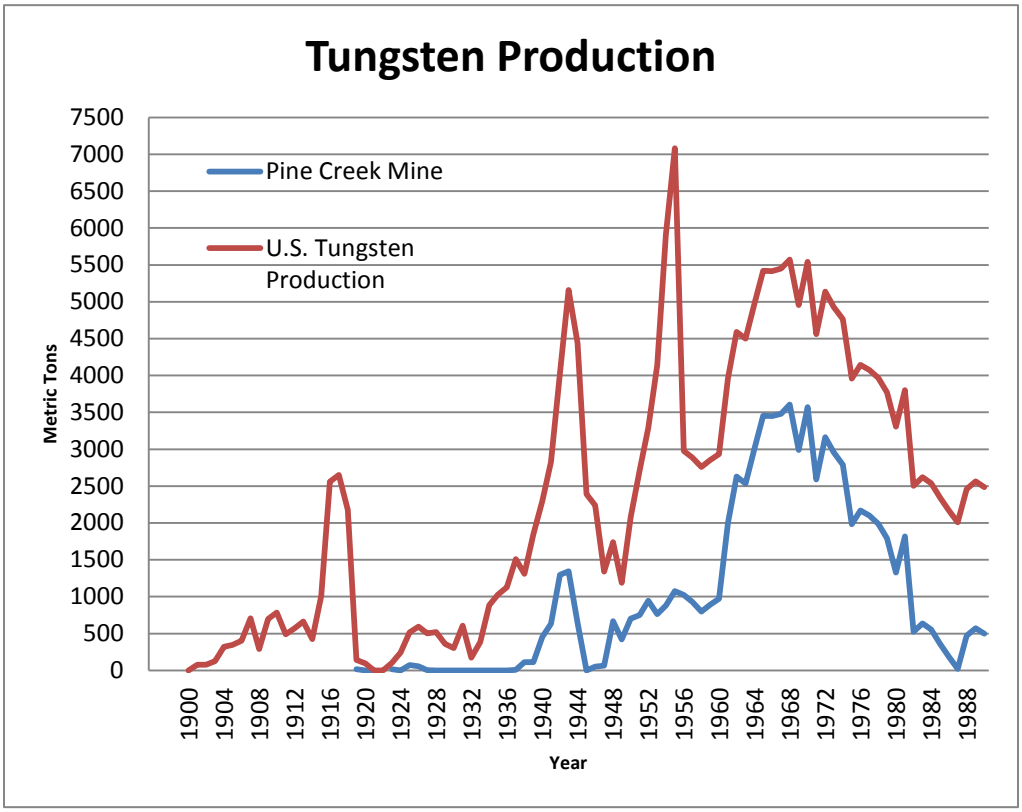

Figure 20. Tungsten Production (Kurtak 1998:198-1999; USGS 2012). USGS provided information for Tungsten production in the United States in two categories "Primary Production" and "Secondary Production," which were added together to create a total production number used for this table. Pine Creek Mine production information furnished by Kurtak was listed in Units of WO_3, which was converted into metric tons for use in this table.

7.8 Present Conditions at Pine Creek

The existing structures of the mine including the Easy Go Adit were primarily developed during and after World War II, and are located at an elevation of 8,063 feet. Pine Creek Mine remains closed today and many of the primary buildings at the mill site have been demolished, including

the mill, the lab, and carpenter and machine shops. Foundations for many of these are visible. There are some support buildings and structures, mill equipment, and mine adits existing at the mill site (See Figure 21). Additionally, some of the aerial tramway towers and sections of road remain along the mountain side.

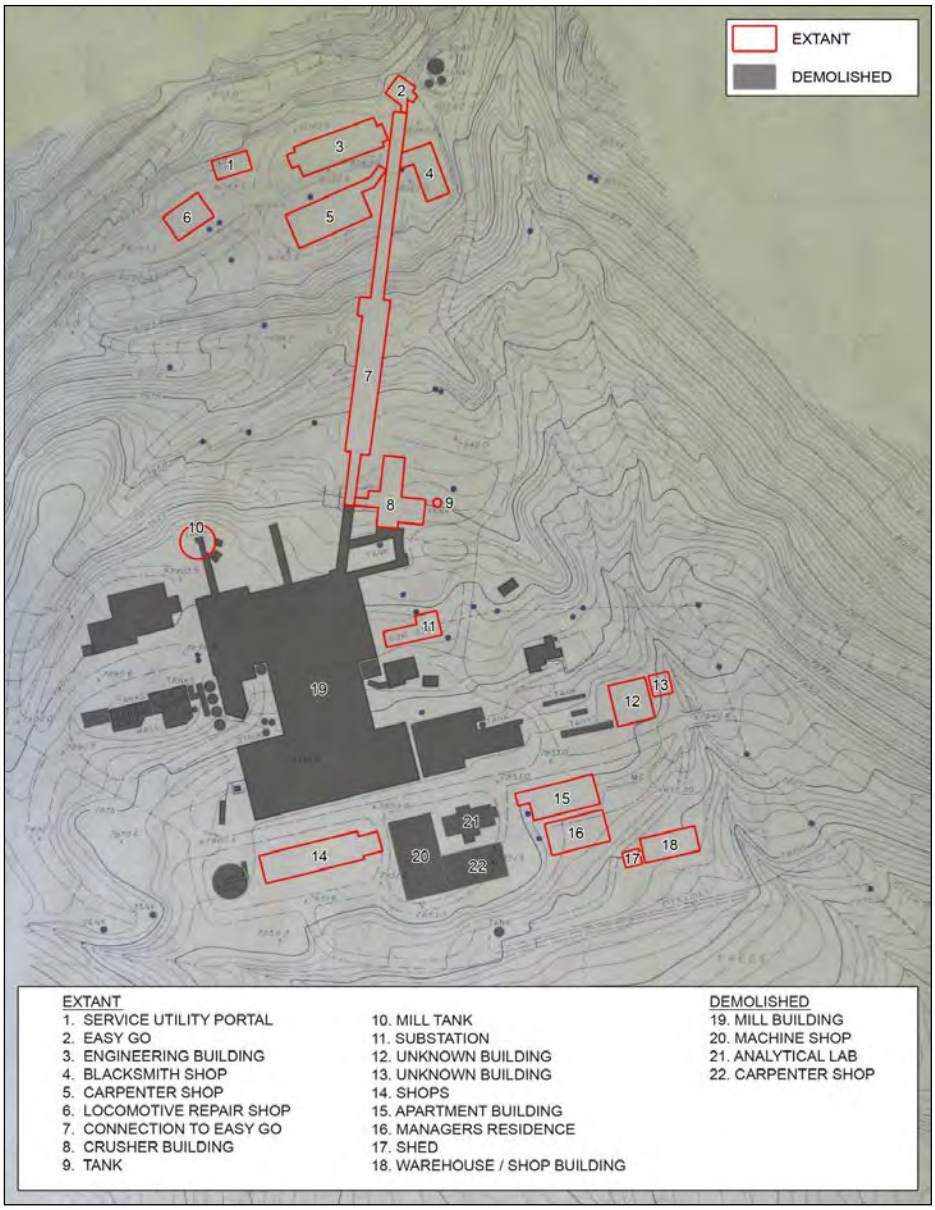

Figure 21. Mill Site near Easy Go showing extant and demolished buildings (Base map, "Pine Creek Mine, Inyo County, California, Property Map," no date; provided by Pine Creek Mine).

Figure 22. Pine Creek Mill Site at junction of Pine and Morgan Creeks 1941 (Photograph from *Engineering and Mining Journal*, November 1941:72.)

Figure 23. Pine Creek Mine from Switchback Road (Photograph by JRP October 18, 2013).

Figure 24. Easy Go Portal (Structure 2); facing north (Photograph by JRP October 18, 2013).

Figure 25. Easy Go portal connection to Crusher (Building 8) on left and Carpenter shop (Building 5) on right, facing south (Photograph by JRP October 18, 2013).

Figure 26. Mechanics Shop (Building 3) and Carpenter Shop (Building 5), facing northeast (Photograph by JRP October 18, 2013).

Figure 27. Blacksmith shop (Building 4), facing south (Photograph by JRP October 18, 2013).

Figure 28. Carpenter shop (Building 5), facing east (Photograph by JRP October 18, 2013).

Figure 29. Locomotive Repair Shop (Building 6) and substation, facing northwest (Photograph by JRP October 18, 2013).

Figure 30. Connection to Easy Go (Building 7), Crusher (Building 8), and tank (Structure 9); facing northwest (Photograph by JRP October 18, 2013).

Figure 31. Site of mill and processing plant (Structures 19 and 20), Crusher (Building 8), mill tank (Structure 10), and Shops (Building 14), facing north (Photograph by JRP October 18, 2013).

Figure 32. Substation (Structure 11) and Shops (Building 14); facing south (Photograph by JRP October 18, 2013).

Figure 33. Outfall discharging mine water into Morgan Creek, showing Buildings 12 and 13, facing west (Photograph by JRP October 18, 2013).

Figure 34. Apartment (Buildings 15) and Manager's Residence (Building 16); facing west (Photograph by JRP October 18, 2013).

Figure 35. Buildings 17 and 18, facing southwest (Photograph by JRP October 18, 2013).

8 EVALUATION OF MINING RESOURCES – GENERAL (By R. Herbert)

Evaluation of mining sites as cultural resources requires the same criteria be met as other built resources such as houses, commercial and industrial structures, dams, bridges, highways and so forth. To be eligible for listing in the National Register of Historic Places, a mining property must be significant in American history, architecture, engineering, or culture and possess integrity of location, design, setting, materials, workmanship, feeling, and association. In addition, the mining property must meet one or more of the four National Register criteria:

A. be associated with events that have made a significant contribution to the broad patterns of our history; or

B. be associated with the lives of persons significant in our past; or

C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that posses high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. have yielded, or may be likely to yield, information important in prehistory or history.

While the same criteria are applied to mines as other cultural resources, mining resources that may or may not have above-ground remains differ in the way they are evaluated against the criteria. It should be noted that mining sites that appear to meet the criteria for listing in the National Register are typically evaluated as single sites. A discussion of rural historic landscapes, and how they apply to mining sites, appears in the next section.

8.1 Criterion A

National Register Bulletin No. 42: *Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties* (*Bulletin No. 42*) suggests that mines can be found eligible under Criterion A (associated with events that have made a significant contribution to the broad patterns of history) under such themes as business and engineering. The resource must have a strong relationship with a theme to be eligible (US Department of the Interior, National Parks Service [USDI, NPS] 1997). [1]

[1] A complete list of themes suggested in *Bulletin 42* is: agriculture, business, commerce, community development, economics, education, engineering, ethnic heritage, labor, law, literature, military, politics/government, science, and social history. U.S. Department of the Interior, National Park Service, *National Register Bulletin 42: Guidelines for Identifying, Evaluating, and Registering Historic Mining Properties* (1997) 15-17.

Business is a likely theme for these mining sites, but of the fifteen themes suggested in *Bulletin No. 42*, the theme of engineering appears to be the most pertinent. The bulletin states,

> After 1890, many mining complexes featured components designed by mining engineers. This would include water and transportation systems built to serve mining operations. Noteworthy examples of mining engineering would fall under this area of significance. The ascendance of the mining engineer over the skilled craftsperson was a gradual process. Many mining properties can demonstrate the nature of the change and provide evidence of the intermediate steps in the process of change. [USDI, NPS 1997:16]

Pine Creek Mine might be considered under Criterion A under the theme of business for its association with tungsten mining as the largest producer and supplier during the Korean and Vietnam Wars as a reflection of the importance of tungsten mining during times of war.

8.2 Criterion B

A mining property would have to be directly associated with a historical person to meet Criterion B and be a resource that best exemplifies his/her significance.

Individuals associated with Pine Creek Mine do not appear to reach the level of significance necessary to meet this criterion.

8.3 Criterion C

As is the case with all Criterion C evaluations, a mining property must embody "the distinctive characteristics of a type, period, method of construction, or represent the work of a master, possess high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction" (USDI, NPS 1997: 17). Those mining properties found eligible under Criterion C are often assessed under the categories of architecture and engineering.

8.3.1 Architecture

Mining complexes occasionally contain cabins, storehouses, and workshops, as well as other, more mining-specific structures as mills, hoists, and processing sites. Such mining structures are often in ruins. Architecture found in these complexes can reflect common building trends or demonstrate innovative use of materials. Mines are generally established in remote locations, necessitating the use of locally available materials.

The few standing buildings in the study group do not exhibit innovative use of materials nor does there appear to be "noteworthy vernacular architecture… constructed by particular ethnic

groups" (USDI, NPS 1997:17). However, some of the buildings may provide "distinctive characteristics of a type, period, or method of construction" (USDI, NPS 1997:17).

Structures that are mine-specific, such as mills, hoists, or processing sites, may also have architectural significance. These structures contributed to the surface plant, which consisted of the machines that served the mine and their housing.

The main feature of a mine's surface plant is the mill. Mining mills can be a simple machine or a processing complex. Mills are used to separate the mineral from the ore.

Surface plants established for prospect sites would typically be relatively inexpensive and mobile. Prospectors would develop the site only to the point where its potential could be assessed. If the vein was promising the claim would often be sold and further developed by others. If not, the prospector would abandon the site for a richer location. Either way, he would pack his gear to move to the next claim. Therefore the unnamed prospect sites that only feature adits and prospect pits would have had temporary surface plants that were removed when the prospector moved on (Twitty 2002:34-35).

While the remains of surface plants may yield information regarding the engineering and working aspects of mining, they do not represent the work of master architects or builders, nor do they have high artistic value.

8.3.2 Engineering

The methods and technology of mining, like most technical industries, continues to evolve. Mining properties can illustrate these changes through the remnants of machinery and structures. Typically, few mining properties have enough remaining features to fulfill Criterion C under the theme of engineering, because the sites had the equipment removed after operations ceased, the remaining equipment was scavenged for scrap during the first or second world wars, or if continually used, it was upgraded with new features and/or equipment. The removal of equipment for reuse elsewhere or for scrap value was a common practice that raises the value of what little does remain at mining sites.

Miners were aided in erecting such complex machinery based on diagrams and specific instructions in texts such as Robert Peele's *Mining Engineers' Handbook*, which provided detailed information on common mining practices of the period. Miners used these books for instruction on everything from engineering thermodynamics to the proper methods for carving sub-level caves into the earth (Peele 1927:217-218,706). The manuals contained so much information that it may have been more difficult for miners in desolate areas to obtain materials to assemble these devices than it was to conceptualize and construct them. The *Mining Engineers' Handbook* also allowed miners to judge which equipment design would work best given their specific climate and topography (See Figure 36) (Peele 1927:1091-1092).

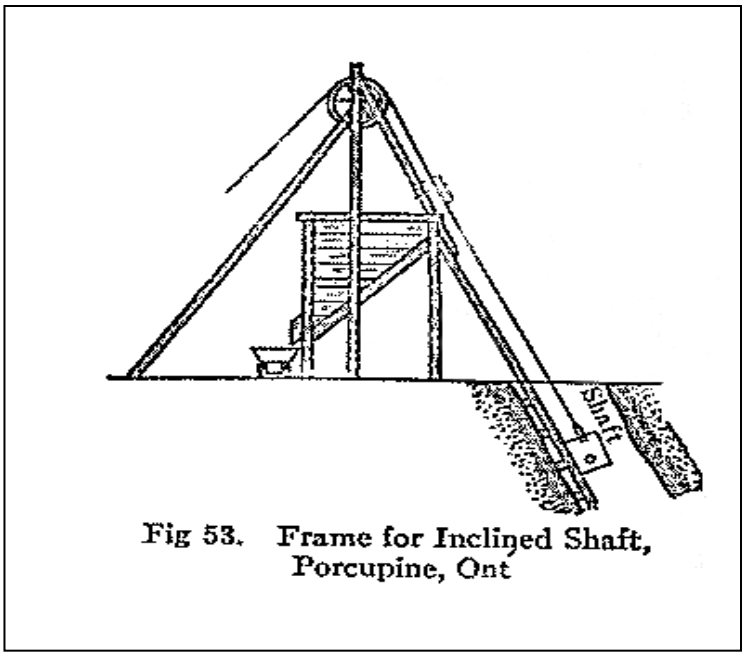

Figure 36. Diagram of an A-frame headframe for an inclined shaft from Peele's *Mining Engineers' Handbook,* published in 1927 (Peele 1927: 1091).

Aerial tramways were first successfully used in the 1860s. Developed and patented by Andrew S. Hallidie, a mining engineer based in San Francisco and designer of the city's iconic cable car system, aerial tramways allowed access to locations that would otherwise have been too difficult or too expensive to work owing to their remoteness and rugged intervening terrain. A series of wooden (or later, steel) towers supported wire ropes guided on idler wheels fastened to the towers. The rope looped at the top and bottom stations, providing a tight, smooth ride for ore buckets. The buckets were filled at the top and the force of gravity brought them down while pulling the empty buckets back to the top. The raising buckets might also have transported equipment and men to the mine (See Figure 37) (Twitty 2002: 126-130).

The Hallidie, and later other aerial tramway designs, were very expensive and complex to erect. Although the tramways' assembly was standard, each system was configured to address the individual mine's requirements. Smaller mining operations used single and double-rope reversible aerial tramways. "A fixed line extended from an ore bin located high up at the mine down to another ore bin below," noted mining historian Eric Twitty. "A hoist at the mine wound and unwound a second cable that pulled a bucket" (Twitty 2002:138). One vehicle would move back and forth between the bins picking up and dropping off ore. This form of aerial tramway was simple and inexpensive, but slow. Double tramways featured a second line of buckets on a parallel line. There are very few surviving mining aerial tramways that are complete (Twitty 2002:138-139).

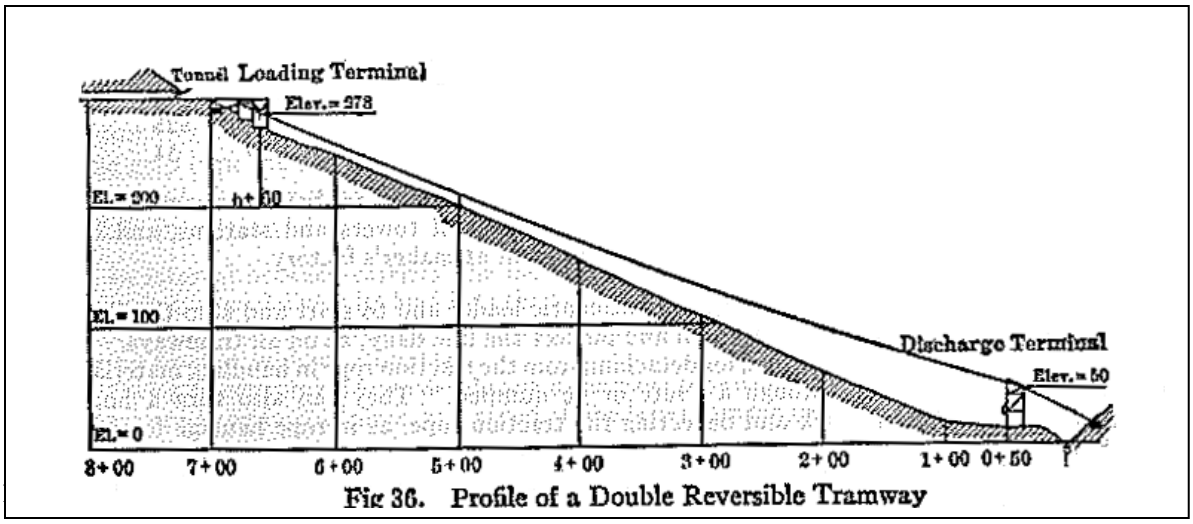

Figure 37. Diagram of Double Reversible Tramway Used for Mining Ores (Peele 1927:1784).

The mining structures and buildings associated with Pine Creek were built for their utility and were not designed by a significant architect. These buildings do not appear to be significant examples of an architectural style. Additionally, the mining equipment and techniques used were similar to other mines in the local area and the United States. However, under the theme of science, the process for producing ammonium paratungstate (APT) at the mine was unique to Pine Creek. Ray Kurtak discovered the process working in the metallurgical laboratory at Pine Creek in the late 1950s. Criterion C might have been considered for the APT process developed at the mill site, particularly if the laboratory and APT plant had survived.

8.4 Criterion D (By S. Davis-King and R. Herbert)

Bulletin No. 42 states,

> Under Criterion D, a mining property is significant if it contains information important in prehistory or history. Eligible resources which may provide such information include standing buildings or structures; surviving machinery; landforms such as mill tailings or mine waste rock dumps; or less visible physical remains such as privy pits, trash dumps, prospect pits, collapsed headframes, building foundations, roads, and machine pads or anchor piers.

For these resources to be considered eligible under Criterion D, they must provide information regarding an important and specific scholarly research question. For example if one asked how changes in technology affected mining's impact on the environment or on land use of mines. Another question might be, "did the economic depression of the 1930s broaden the ethnic and

social diversity of miners?" The mines described as appearing eligible for listing in the National Register of Historic Places have extensive remaining features as described in *Bulletin No. 42*.

Buildings, structures, and objects at Pine Creek do not appear to have the potential to yield important information to our understanding of history or prehistory, and Criterion D would not apply.

As described in the previous archaeological section, there do not appear to be any surviving archaeological deposits that might be eligible under Criterion D in the Project area. To be clear, the entire mine property was not formally surveyed for archaeological resources, but rather the inspection was cursory, since the majority of the mine is outside the probable APE for the Project. No cultural deposits were observed in any areas inspected.

8.5 Integrity Considerations

Integrity refers to the ability of a site to convey its significance. Mining sites are almost never found intact, complete with equipment, buildings, and related structures in the condition they were in at the time the mine ceased activities. *Bulletin No. 42* provides detailed guidance on how to address integrity for mining sites.

The National Register recognizes seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. A resource must maintain several of these aspects to maintain integrity. This is true of mining sites; however, some adjustment of degree is allowed in assessing lack of integrity. While the location of a mine cannot be altered, the equipment used to mine and process the ore was frequently relocated as ores were depleted. The integrity of historic mining equipment relocated to another contemporary historic mine would not diminish even though the equipment had been moved from its original location of operation. If the same equipment was relocated to a modern mine, its integrity would be diminished.

The second aspect of integrity is design. As discussed before, new developments in mining and milling technology introduced new equipment to mining sites as well as changing the methods that mines were worked. Improved methods led to revisiting old sites where tailings could be processed a second time. Just as the surface plant might change, so too could the size and scope of the excavations. Design refers to the layout of the site. Because of the evolving nature of mining operations, a mine does not have to maintain its original site plan to have integrity. The changes should demonstrate the mine's evolution, and should have taken place at least 50 years ago. Changes within the last 50 years, or the modern period, would reduce the integrity.

Another aspect of design is the completeness of the site. Does the site have all of the surface plant or stages of ore processing? Few mines possess a complete surface plant, but if there are enough artifacts remaining to understand the process of reducing ore to the target mineral, then the mine could be considered to retain this form of integrity.

Setting, the third aspect of integrity, reflects both the grounds of the mine and its surrounding environment.

Integrity of materials requires that the resource be constructed with materials that date to any period of significance. The aspect of workmanship is maintained by "preservation of such features as square-set timbering systems, the protection of pipelines, and track, and retaining the feel of confined working spaces" (USDI, NPS 1997:21).

Regarding the aspect of "feeling," *Bulletin 42* states,

> As abandoned industrial properties generally located in isolated areas, the sites of historic mining activity often evoke a strong sense of feeling when viewed by contemporary observers … The feeling of a deserted historic mine can help reflect the character of the boom and bust cycles of mining regions. The loss of this feeling of isolation and abandonment due to encroaching modern development can diminish the integrity of a mining property [USDI, NPS 1997:21].

The final aspect of integrity is that of association, which as *Bulletin 42* notes, "will exist in cases where mine structures, machinery, and other visible features remain to convey a strong sense of connectedness between mining properties and a contemporary observer's ability to discern the historical activity which occurred at the location" (USDI, NPS 1997:21). There are two ways a mine can maintain integrity of association. The first is to have a mining complex complete with surface plant, worker housing, transportation, and shaft. Complete mining complexes are very rare and provide a very clear illustration of life and operation methods at the mine.

The second way is more common. A mining resource which lacked buildings or has extensively altered buildings, but does feature other elements such as building foundations, shaft, headframes, tramways, tailings, trash dumps, cemeteries, privies, equipment, and other artifacts might be considered eligible. Even though buildings are either missing or in a dilapidated state, a mining site that has retained critical pieces of its mining operation could maintain integrity of association. On the other hand, a site could retain the buildings and not have enough evidence of the mining operation to illustrate a working mine. Such a mine would not have integrity of association because it is not the state of the buildings that holds integrity but the "degree to which the overall mining system remains intact and visible" (USDI, NPS 1997: 21).

9 RURAL HISTORIC LANDSCAPES (By R. Herbert)

National Register guidance related to historic landscapes states that industrial sites such as mines can be considered rural historic landscapes. The guidance notes,

> Mining properties may include not only the most prominent mining structures, but also the communities shaped as a result of the mining activity and the surrounding

> land covered by related mining claims and containing historic shafts, tunnels, pits, and tailings. Landscape characteristics can be used to describe and evaluate these properties [USDI, NPS 1999: np].

In order to be eligible, components of a landscape must be directly related to one another, and must meet one or more National Register criteria of significance.

National Register Bulletin No. 30: Guidelines for Evaluating and Documenting Rural Historic Landscapes (*Bulletin No. 30*) defines rural historic landscapes, for the purposes of the National Register, as "a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features" (USDI, NPS 1999:2). Rural historic landscapes are listed in the National Register as either sites or districts. Historic sites can include small-size landscapes with no buildings or structures, whereas historic districts feature a number of buildings, sites and structures on extensive acreage. The extensive acreage and limited number of buildings and structures distinguish rural historic landscapes from other kinds of historic properties (USDI, NPS 1999:1).

There are seven general types of rural historic landscapes: agriculture, industry, maritime activities, transportation systems, migration trails, conservation, and sites adapted for ceremonial, religious or other cultural activities. The types of landscapes are based on land use and "commonly reflect the day-to-day occupational activities of people engaged in traditional work such as mining, fishing, and various types of agriculture" (USDI, NPS 1999:2). Industrial landscapes include mining, lumbering, aquaculture, and milling.

There are also eleven landscape characteristics that upon which evidence of human use or activity is based, and are used to understand the natural and cultural influences that have shaped the landscape. *Bulletin No. 30* defines landscape characteristics as "the tangible evidence of the activities and habits of the people who have occupied, developed, used, and shaped the land to serve human needs; they may reflect the beliefs, attitudes, traditions, and values of these people." The first four characteristics, land uses and activities, patterns of spatial organization, response to the natural environment, and cultural traditions, are described as processes that "have been instrumental in shaping the land." The remaining seven characteristics are physical elements on the land, which, in the case of mining, include such things as buildings, pits, or tailing patios. The component characteristics are circulation networks, boundary demarcations, vegetation related to land use, buildings, structures and objects, feature or building clusters, archeological sites, and small scale elements such as abandoned machinery, fence posts, or traces of a road, which add to the historic setting (USDI, NPS 1999:18).

9.1 Evaluation of Rural Historic Landscapes

Evaluation of mines or mining areas as rural historic landscapes requires application of the National Register criteria. *Bulletin No. 30* states,

> A property must possess significance in at least one of the four aspects of cultural heritage specified by the National Register criteria. Because of their complex evolution and the layering of subsequent land uses without destroying previous ones, many rural landscapes have significance under several criteria [USDI, NPS 1999:13].

Mining sites considered as historic landscapes must be significant under Criteria A, B, C, or D described above (USDI, NPS 1999:13-20)

The criteria are applied within the context of the landscape's area of significance. *Bulletin No. 30* states, "[the] area of significance is that aspect of history in which a rural property, through use, occupation, physical character, or association, influenced the development of identity of its community or region." There are ten suggested areas of significance for rural landscapes. These included agriculture (the most commonly applied), architecture, archeology, community planning and development, conservation, engineering (reclamation, irrigation and water power for example), exploration/settlement, industry, landscape architecture and science. The area of significance with the greatest weight regarding mines is "Industry, where the landscape has been shaped or manipulated to provide goods or services, through activities such as lumbering, mining, milling and quarrying, that have contributed to the development of a community or society in general" (USDI, NPS 1999:21).

While assessing the integrity of a rural landscape it is accepted that no potential landscape will retain appearance from a period long ago. Natural changes in vegetation, deterioration of buildings, and land use changes will have had an effect. The overall sense of the historic period must be retained. The landscape should reflect the spatial organization, maintain physical components, and historic associations attained during its period of significance. Integrity may be lost, notes the bulletin, "due to the cumulative effect of relocated and lost historic buildings and structures, interruptions in the natural succession of vegetation and the disappearance of small-scale features that define historic land uses" (USDI, NPS 1999:23).

Other losses of integrity that relate to mining sites may include: "abandonment and realignment of roadways;" "widening and resurfacing of historic roadways;" "modern methods of mining that leave large open pits or massive tailings uncharacteristic of historically significant extraction methods;" and "deterioration, abandonment, and relocation of historic buildings and structures.

9.2 Evaluation of Mining Properties as Rural Historic Landscapes

Regarding mining properties, *Bulletin No. 30* notes the following considerations:

> Mining properties may include not only the most prominent mining structures, but also the communities shaped as a result of the mining activity and the surrounding land covered by related mining claims and containing historic shafts, tunnels, pits, and tailings. Landscape characteristics can be used to describe and evaluate these properties.
>
> Modern methods of extraction may alter integrity. While the historic presence of tailings may be viewed as part of the historic setting, modern tailings and excavation, with or without recent structures, threaten historic integrity. Open pit mining in an area historically mined through tunnels and shafts destroys historic characteristics, altering an area's historic integrity. However, an open pit mine that has operated since the historic period retains its integrity, if recent extraction methods have been similar to those practiced historically and if the character of the pit is similar, although greater in size, to that of the historic period. [USDI, NPS 1999:27]

10 REPORT CONCLUSIONS

This report has been prepared to provide a basis for considering Pine Creek Mine's *potential* eligibility for listing in the NRHP, but does not render a final eligibility analysis for the mine. This report does not formally assess the eligibility of Pine Creek Mine rather it gives a historic context and provides the ground-work for further examination.

As the historic context discussed, Pine Creek Tungsten Mine located near Bishop in Inyo County, California was discovered in 1916 at an elevation of 11,300 feet in the Sierra Nevada. The mine underwent expansion, development, and ownership changes over the next seventy years, and its success peaked during the Vietnam era. The mill site at 8,000 feet was developed between 1942, when it was moved from the original location at 11,000 feet, and 1970, when the Easy Go Tunnel was completed.

Pine Creek Tungsten Mine provided some advances in the production of tungsten products with the development of the process for APT that was unique to the company at the time. Criterion C under the theme of science may be considered for the APT process developed at the mill site, particularly if the laboratory and APT plant had survived. Although foundations remain, consideration of the characteristics of the APT process and the remaining structures at the property that could potentially convey the significance of the process developed at the mill site would need to be reviewed for a final evaluation.

Besides the mine features themselves as detailed above, there was an investigation of archaeological, ethnographic, and Native American issues. No archaeological sites, features, or

artifacts were identified in the areas investigated. There are two creation stories that have survived for the general vicinity, but the precise location of these was not identified, and there does not appear to be any impact of any sort by the proposed Project activities to any potential surviving features. Native Americans who were interviewed did not raise any issues or concerns about the proposed Project, but consultation is ongoing.

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12 PREPARERS' QUALIFICATIONS

The ethnographic and archaeological portions of this report were written by Shelly Davis-King (B.A., Anthropology, University of California, Santa Barbara; M.A, Anthropology, University of Arkansas, Fayetteville; Doctoral research University of Cambridge, Cambridge, England), principal and owner of Davis-King & Associates (DKA) with more than 40 years of experience in conducting cultural resources investigations. Ms. Davis-King is the Principal Investigator for the project, was responsible for Native American outreach, archaeological investigations, and general project oversight. She qualifies as a prehistoric and a historical archaeologist under the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61), and as an ethnographer as described in National Register Bulletin 38.

The historic context provided for this report was conducted under the general direction of Rand F. Herbert (B.A., History, University of California, Berkeley; M.A.T in History, University of California, Davis), a partner of JRP with 36 years of experience conducting these types of studies. Mr. Herbert provided overall project direction and guidance, and reviewed and edited this report. Based on his level of experience and education, Mr. Herbert qualifies as both an architectural historian and historian under the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61).

JRP Staff Historian Leslie Trew (M.A., Public History, California State University, Sacramento) was the lead historian for this project. Ms. Trew conducted research and wrote the historic context, and prepared the final report. Ms. Trew qualifies as an architectural historian and historian under the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61).

JRP President Stephen R. Wee (B.A. History, University of Washington, Seattle; M.A. US History, University of California, Davis), a partner of JRP with 37 years of experience conducted the site survey of the Pine Creek mill and mining facilities on October 18, 2013. Mr. Wee qualifies as historian/architectural historian under the United States Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61).

APPENDIX A: DPR-PRIMARY RECORD (PREVIOUS STUDY)

RECEIVED IN

NOV 25 2009

EIC

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI # 14-10312
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

Page 1 of 2 *Resource Name or #: ASM-1

P1. Other Identifier: Pine Creek Tungsten Mine Mill
***P2. Location:** ☒ Not for Publication ☐ Unrestricted *a. County: Inyo
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad: Mt. Tom, CA Date: 1994 T 7S; R 30E; NW ¼ of NE ¼ of Sec 8; M.D. B.M.
c. Address: City: Zip:
d. UTM: Zone: 11; 349283 mE/ 4136162 mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate): From the junction of US-395 and US-6 in Bishop, California, drive west on US-395 for 9.66 miles. Turn left (west) onto Pine Creek Road and drive for 10.24 miles, passing through the town of Rovona and into Pine Creek canyon. The road ends at the Pine Creek Tungsten Mine mill. Cross the bridge into the mill complex and turn right (west) onto a maintained drive. The pole is located about 100 meters down the road, on the left (south) side directly in front of the Morgan Sub-station.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
This is the site of the Pine Creek Tungsten Mine mill, located in Pine Creek Canyon at the confluence of Morgan Creek and Pine Creek. The area is covered with fill and has been heavily impacted by construction and long-term mining activities. At present, the mill complex contains a variety of structures and mining/milling equipment including ore cars, heavy machinery, and tools. Although the mine was established circa 1916, the current mill was not constructed until about 1941. It was operated continuously until 1990, over which time several alterations, additions, and impacts to the original structures and landscape occurred. The mill saw a slight resurgence in use during the 1990s but closed again in 2000. Currently, the mine and mill are inactive, and there are no obvious and strictly historic-era buildings, features, or artifact deposits within the site area.

***P3b. Resource Attributes:** (List attributes and codes) AH6- Water Conveyance Systems, AH7- Roads, AH9- Mines/Tailings, AH10- Machinery, AH15- Standing Structures, AH16- Tramway

***P4. Resources Present:** ☐Building ☐Structure ☐Object ☒Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #) 006: Overview of the project area showing the nearby mill structures. View to 130°. 11/6/09.

***P6. Date Constructed/Age and Sources:** Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Pine Creek Development LLC
9050 Pine Creek Road
Bishop, CA 13514

***P8. Recorded by:** (Name, affiliation, and address)
K. Manske and J. Larson
ASM Affiliates, Inc.
121 California Ave.
Reno, NV 89509

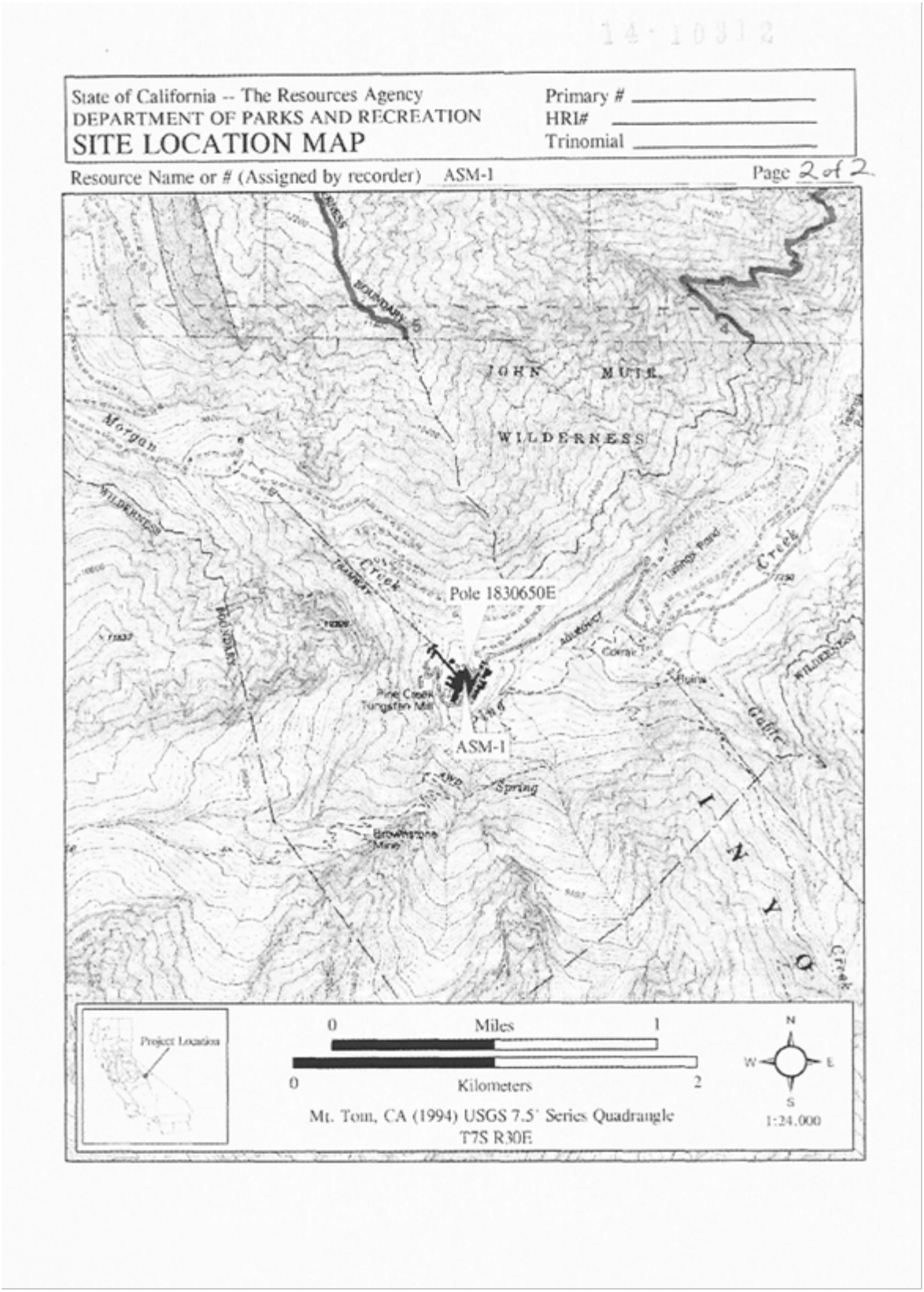
***P9. Date Recorded:** 11/6/09

***P10. Survey Type:** Intensive Pedestrian Survey with 15-meter spacing

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") 2009, Manske and Giambastiani, Class III Cultural Resources Inventory Of Two Utility Poles On The Southern California Edison/ Control-Morgan 55 Kv Line, Inyo County, California

***Attachments:** ☐NONE ☒Location Map ☐Sketch Map ☐Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

DPR 523A (1/95) *Required information


State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SITE LOCATION MAP
Primary # _____
HRI# _____
Trinomial _____
Resource Name or # (Assigned by recorder) ASM-1
Page 2 of 2
JOHN MUIR
WILDERNESS
Pole 1830650E
ASM-1
Pine Creek Tungsten Mill
Spring
Project Location
0 Miles 1
0 Kilometers 2
Mt. Tom, CA (1994) USGS 7.5' Series Quadrangle
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APPENDIX B: RECORD SEARCH

EASTERN INFORMATION CENTER
CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM
Department of Anthropology, University of California, Riverside, CA 92521-0418
(951) 827-5745 - Fax (951) 827-5409 - eickw@ucr.edu
Inyo, Mono, and Riverside Counties

October 31, 2013
CHRIS Access and Use Agreement No.: 6
EIC-INY-ST-2404

Shelly Davis-King
Davis-King & Associates
PO Box 10
Standard, CA 95373

Re: Cultural Resources Records Search for the Pine Creek Mine Hydroelectric Project

Dear Ms. Davis-King:

We received your request on October 23, 2013, for a cultural resources records search for the Pine Creek Hydroelectric project located in Sections 5 and 8, T.6 and 7S, R.30E, MDBM, in the Pine Creek Tungsten Mill area of Inyo County. We have reviewed our site records, maps, and manuscripts against the location map you provided.

Our records indicate that four cultural resources studies have been conducted within a quarter-mile radius of your project area. One of these studies involved the project area. One additional study provides an overview of cultural resources in the general project vicinity. Copies of the title pages of the reports are included for your reference. All of these reports are listed on the attachment entitled "Eastern Information Center Report Listing" and are available upon request at 15¢/page plus $40/hour for hard copies and 25¢/page plus a $25 flat fee and $40/hour for PDFs.

Our records indicate that one cultural resources property has been recorded within a quarter-mile radius of your project area. This property involved the project area. A copy of the record is included for your reference. All of these resources are listed on the attachment entitled "Eastern Information Center Resource Listing".

The above information is reflected on the enclosed maps. Areas that have been surveyed are highlighted in yellow. Numbers marked in blue ink refer to the report number (IN #). Cultural resources properties are marked in red; numbers in black refer to Trinomial designations, those in green to Primary Number designations. National Register properties are indicated in light blue.

Additional sources of information consulted are identified below.

National Register of Historic Places: no listed properties are located within the boundaries of the project area.

Office of Historic Preservation (OHP), Archaeological Determinations of Eligibility (ADOE): no listed properties are located within the boundaries of the project area.

Office of Historic Preservation (OHP), Historic Property Directory (HPD): no listed properties are located within the boundaries of the project area.

Note: not all properties in the California Historical Resources Information System are listed in the OHP ADOE and HPD; the ADOE and HPD comprise lists of properties submitted to the OHP for review.

Copies of the relevant portions of the 1949 USGS Mt. Tom 15' and the 1912 USGS Mt. Goddard 30' topographic maps are included for your reference.

As the Information Center for Inyo County, it is necessary that we receive a copy of all cultural resources reports and site information pertaining to this county in order to maintain our map and manuscript files. Confidential information provided with this records search regarding the location of cultural resources outside the boundaries of your project area should not be included in reports addressing the project area.

Sincerely,

Gayat Adame
Information Officer

Enclosures

Eastern Information Center Report Listing

Report No.	Year	Author(s)	Title	Affiliation	Pages	Resources	----- Acreage ----- Survey	Monitoring
IN-00246	1986	MILLER, BRIAN	ARCHAEOLOGICAL RECONNAISSANCE REPORT - UMETCO BORROW PIT	INYO NATIONAL FOREST	4	0	5.00	0.00
IN-00273	1986	WERNER, ROGER H.	TUNGSTAR HYDROELECTRIC PROJECT ARCHAEOLOGICAL SURVEY	AUTHOR(S)	5	0	25.00	0.00
IN-00276	1992	HANEY, JEFFERSON W	WRITTEN IN BEDROCK: PREHISTORIC ACORN USE IN THE EASTERN SIERRA NEVADA		229	0	0.00	0.00
IN-00676	2002	Hornick, Martin	Heritage Resources Report (Pine Creek Trail Reconstruction)	Inyo National Forest	7	0	31.52	0.00
IN-00826	2008	Michael R. Hilton	HRR No. 2008-05-04-01282, Heritage Resources Report	Inyo National Forest	8	0	0.10	0.00

Page 1 of 1

10/31/2013 12:09:17 PM

APPENDIX C: NAHC RESPONSE LETTER

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916) 373-3715
Fax (916) 373-5471
Web Site www.nahc.ca.gov
Ds_nahc@pacbell.net

February 19, 2014

Ms. Shelly Davis-King, RPA
Davis-King & Associates
P.O. Box 10
Standard, CA 95373

Sent by U.S. Mail
No. of Pages: 3

RE: Sacred Lands File Search and Native American Contacts list for the **"Pine Creek Mine Hydroelectric Project;"** located in the Community of Rovana; Inyo County, California

Dear Ms. Davis-King:

A record search of the NAHC Sacred Lands Inventory **failed to indicate** the presence of Native American traditional cultural places in the Project site(s) or 'area of Potential effect' (APE), submitted to this office. Local tribes consider the Round Valley/Rovana area very culturally sensitive. Note also that the absence of archaeological and/or Native American cultural resources does not preclude their existence at the subsurface level.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the Court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

Attached is a list of Native American tribes, Native American individuals or organizations that may have knowledge of cultural resources in or near the proposed project area (APE). As part of the consultation process, the NAHC recommends that local government and project developers contact the tribal governments and native American individuals on the list in order to determine if the proposed action might impact any cultural places or sacred sites. If a response from those listed on the attachment is not received in two weeks of notification, the NAHC request that a follow-up telephone call be made to ensure the project information has been received.

California Government Code Sections 65040.12(e) defines 'environmental justice' to provide "fair treatment of people...with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations and policies." Also, Executive Order B-10-11 requires that state agencies "consult with Native American tribes, their elected officials and other representatives of tribal governments in order to

provide meaningful input into…the development of legislation, regulations, rules and policies on matter that may affect tribal communities."

If you have any questions or need additional information, please contact me at (916) 373-3715.

Sincerely,

Dave Singleton
Program Analyst

Attachments

Native American Contacts
Inyo County California
February 19, 2014

Big Pine Paiute Tribe of the Owens Valley
Genevieve Jones, Chairperson
P. O. Box 700 Owens Valley Paiute
Big Pine , CA 93513
G.Jones@BigPinePaiute.org
760- 938-2003
760-938-2942-FAX
(760) 938-2942-FAX

Bishop Paiute Tribe
Dale Chad Delgado, Chairperson
50 Tu Su Lane Paiute - Shoshone
Bishop , CA 93514
(760) 873-3584
(760) 873-4143 - FAX
(760) 873-4143

Fort Independence Community of Paiute
Israel Naylor, Chairperson
P.O. Box 67 Paiute
Independence CA 93526
Israel@fortindependence.
(760) 878-5160
(760) 878-2311 FAX
(760) 878-2311- Fax

Big Pine Band of Owens Valley THPO
Bill Helmer, Tribal Historic Preservation Officer
P.O. Box 700 Paiute
Big Pine , CA 93513
b.helmer@bigpinepaiute.org
(760) 938-2003
(760) 938-2942 - FAX
(760) 938-2942 fax

Bishop Paiute Tribe THPO
Raymond Andrews, THPO
50 Tu Su Lane Paiute - Shoshone
Bishop , CA 93514
(760) 873-8435 ext 250
(760) 920-0357 - cell - cell
gwest@ovcdc.com
(760) 873-4143 - FAX

Lone Pine Paiute Shoshone Reservation
Mary Wuester, Chairwoman
P.O. Box 747 Paiute
Lone Pine , CA 93545 Shoshone
(760 876-1034
760-876-8302 - FAX

(760) 876-8302

Lone Pine Paiute Shoshone Reservation
Kathy Bancroft, Cultural Resources Officer
P.O. Box 747 Paiute
Lone Pine , CA 93545 Shoshone
406-570-5289
kathybncrft@yahoo.com
760-876-8302 FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list s only applicable for contacting locative Americans with regard to cultural resources for the proposed Pine Creek Mine Hydroelectric Project; located in the Community of rovana; in northern Inyo County, Califvornia for which a Sacred Lands File search and Native American Contacts list were requested.

APPENDIX D: JENNIE NEWLAND CREATION STORY

87.3c

D1930

Lee Warlie,
Interpreter.

Jennie Newland,
Informant.

ROUND VALLEY PAIUTE:

THE STORY OF CREATION

The creation story begins in Que-na-ba (Round Valley). There, at the mouth of Pine Creek, for generations past, we have been told that it is our birthplace. This place, which the Indians designate as the very spot, certainly looks like it. This place is circular, like that of an Indian camp of today. On the east side stand two pillars. They say that these are our father and mother. After they had grieved a long time, a greater spirit than they took pity on them and turned them into stone.

Coyote, in his wanderings, came upon a young maiden whom he followed to her home. After seeing her camp, he said to himself, "I must go and hunt ducks. I will bring them the ducks and in that way make a good impression. Maybe I can get the girl for my wife." After getting a string of ducks, he headed for the camp. He was greeted by the maiden and her mother. He presented them with his gift of ducks. The mother was

pleased, and right away she offered the hand of her daughter to the Coyote. He accepted with great happiness. Their toney was near-by. The girl led him there and built a fire for him. She told him to lie down and rest until the supper was ready. While he was there he noticed sets of teeth hanging all around on the wall of the toney. This set him to thinking very deeply. He planned carefully so that he could outwit these women. After seeing these teeth, he knew that they were destroyers of men. He was called to come and eat supper. They all ate together. He noticed something very peculiar about the way the ladies ate the ducks. They broke the bones by throwing them into their vaginas. He thought of the plans he had made and was more than ever determined to carry them out. After the evening meal was over, it was dark. They all went to bed. During the night things began to happen. Coyote went outside and got himself a tough piece of wood. He knocked the beast-woman senseless and changed them to normal human beings. Then, afterwards, he made love to the young maiden. He told them, "We will all go back to my country." The women agreed. They started out. Just as they were to descend to the valley below, the daughter became sick. The mother knew the reason of the sickness (i.e., child-birth). She sent Coyote to fetch some water. He did. Then the

event of creation took place. There were the stalwart Monos, Shoshone, and Paiute of the North, and many other tribes. They had bows and arrows and were also carrying many other things. They were playing on the sunny side of the canyon, shooting arrows, and many other games. Father Coyote called them together. He began to send them out in pairs in all directions. He sent all except one. This one was small, a poor specimen of mankind. He was short and carried a che-ve-nu. Father Coyote turned to him and bestowed all the blessings on him. "You shall be brave and invincible in all your undertakings, whether it be in sport or in war. You shall always live here, and this great valley shall belong to you. No other tribe shall take it from you. Go now and claim that which I, father Coyote, have bestowed on you." After saying this, father Coyote turned to his mate and said, "Let us go away from here. The memory of this event will only bring added sorrow to our dying days." They started out. Just as they were about to pass the doorway, a greater being, whom all the Indians fear, intervened. He said, "Stop, my good people. You have done your share for the good of the land, but the memory of it will linger, long and bitter. It will always cause you suffering. To save you from this, you are pillars of stone." To this day you can see the

two stones standing side by side, a mute evidence of this story. The tears streaming down their faces are also visible. The arrangement of the camp is the same as in that day. Any one wishing to see this place, can find it at Pine Creek in Round Valley.

Che-na-ba: Round Valley
Toney: Grass house
Che-ve-nu: Gathering basket for taboose

APPENDIX E: SECTION 106 CONSULTATION AUTHORIZATION

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426
MAR 27 2013

OFFICE OF ENERGY PROJECTS

Project No. 12532-001 - California
Pine Creek Mine Hydroelectric Project
Pine Creek Mine, LLC

Lynn Goodfellow, Managing Member
Pine Creek Mine, LLC
9050 Pine Creek Road
Bishop, CA 93514

Re: Section 106 Consultation Authorization.

Dear Mr. Goodfellow:

In your March 13, 2002, letter (see enclosure), you requested that we grant you permission to initiate Section 106 consultation on our behalf. By copy of this letter, we are authorizing Pine Creek Mine, LLC to initiate consultation with the California State Historic Preservation Officer, appropriate Native American tribes, and other consulting parties pursuant to 36 CFR § 800.2(c)(4) of the regulations implementing Section 106 of the National Historic Preservation Act. This consultation pertains to the licensing effort by Pine Creek Mine, LLC involving the Pine Creek Mine Hydroelectric Project located in Inyo County, California.

As requested in your letter, we are granting authorization to Pine Creek Mine, LLC in order for them to conduct day-to-day Section 106 consultation responsibilities in regards to the above relicensing effort. However, the Commission remains ultimately responsible for all findings and determination.

If you have any questions, please contact Dr. Frank Winchell at 202-205-6104.

Sincerely,

for

Timothy J. Welch, Chief
West Branch
Division of Hydropower Licensing

cc letter w/enclosure:

APPENDIX F: CHRONOLOGICAL LIST OF CONTACTS/PINE CREEK MINE HYDROELECTRIC

Chronological List of Contacts/Pine Creek Mine Hydroelectric
Davis-King & Associates (Shaded entries predate DKA involvement)
April 2011- 9 June 2014/Page 1

Date	Who? Affiliation?	Method	Substance
2011 April	Lone Pine Paiute-Shoshone Tribe	Letter	Asking Tribe if they wish to participate in licensing process.
2011 April	Fort Independence Indian Reservation	Letter	Asking Tribe if they wish to participate in licensing process.
2011 April	Bridgeport Paiute Indian Colony of California	Letter	Asking Tribe if they wish to participate in licensing process.
2011 April	Bishop Paiute Tribe	Letter	Asking Tribe if they wish to participate in licensing process. Letter received from Tribe saying they would like to consult.
2011 April	Big Pine Paiute Tribe	Letter	Asking Tribe if they wish to participate in licensing process.
2011 April	Utu Utu Gwaitu Paiute Tribe of the Benton Paiute Reservation	Letter	Asking Tribe if they wish to participate in licensing process.
2011 May 12	Bishop Paiute Tribe	Letter	Tribe request to participate in projects consultation in four FERC applications.
2011 May 20	SHPO	Notice of Intent/PAD	Filing of Notice of intent to file license application, filing of pre-application document (PAD) to initiate consultation and request comments on PAD and Scoping Document, plus identification of issues and associated study requests
2013 April 10	SHPO	Letter	Letter from Licensee to SHPO to initiate consultation and request for concurrence on Area of Potential Effects (APE)
2013 May 13	SHPO	Letter	Letter to Applicant regarding adequacy of APE,
2013 June 10	USFS	Letter	Letter to FERC regarding inadequacy of APE, need to collaboratively consult with Forest, need for prehistoric and historic era resource discussion, and consultation with Native Americans
2013 Sept 30	Raymond Andrews/Bishop Paiute THPO	Email/Visit	Sent Mr. Andrews an email that I would be in Bishop, and asked to meet with him. Went to office to meet regarding the project; he had left for the day due to the government shutdown; left a message regarding the project and asking him to contact me.
2013 Oct 1	Raymond Andrews/Bishop Paiute THPO	Email	Received email from Mr. Andrews acknowledging receipt of my business card and note, and letting me know his availability.

Chronological List of Contacts/Pine Creek Mine Hydroelectric
Davis-King & Associates (Shaded entries predate DKA involvement)
April 2011- 9 June 2014/Page 2

Date	Who? Affiliation?	Method	Substance
2013 Oct 8	Raymond Andrews/Bishop Paiute THPO	Email/PowerPoint	Sent Mr. Andrews an email requesting a meeting regarding the project, and asking if he would like to attend a field meeting with me. Also sent him an older version of a PowerPoint presentation to familiarize himself with the project.
2013 Oct 8	Bill Helmer/Big Pine Paiute THPO	Email/PowerPoint	Sent Mr. Helmer an email requesting a meeting regarding the project, and asking if he would like to attend a field meeting with me. Also sent him an older version of a PowerPoint presentation to familiarize himself with the project.
2013 Oct 15	Bill Helmer/Big Pine Paiute THPO	Telephone	Mr. Helmer telephone to discuss a possible meeting time. He asked if I could meet with his cultural committee in the coming week, and invited me to attend the Big Pine Fandango on Saturday, 19 October, so I could discuss issues with the tribe. I agreed to send him some documentation about the project, and he will get back to me regarding the meeting. Also he mentioned the creation story of the Pine Creek area by Jim Tom Jones, and said he would send me some information.
2013 Oct 15	Raymond Andrews/Bishop Paiute THPO	Telephone	Telephoned Mr. Andrews to discuss a possible meeting time. He asked if I could meet with his cultural committee this coming Thursday evening to explain the project, and then perhaps attend the field meeting on Friday. We agreed that I would send him some documentation about the project. He mentioned that the whole Pine Creek area was a sacred area from Rovana on up, and that while there may not be much of an impact, he wanted me to know about this. We will discuss more at the meetings.
2013 Oct 15	Raymond Andrews/Bishop Paiute THPO	Email	Sent Mr. Andrews information he requested. This included a Project Description and two versions of the previous APE map.
2013 Oct 17	Bishop Paiute THPO Advisory meeting	Meeting	Attended the Bishop Paiute Tribe Tribal Historic Preservation Office (THPO) Tribal Historic Preservation Advisory Committee at their Monthly Meeting (see Contact Report). Explained the project and provided background information. Questions were raised about groundwater contamination, land ownership, what happens to the water when it leaves the turbine, the relationship of this project to the "Kelly" project and other projects. Although they expressed that the areas have been compromised by the mining activities ("the damage is already done"), it must be recognized that Pine Creek canyon is the location of the origin story of the Paiute people and that the canyon is full of cultural trails to get to the higher mountains. With respect to the Bishop Paiute Tribe having been originally interested in being a project partner, the Tribe is said to have backed away because they were concerned about the contaminants. They might be interested still if the contaminants are not an issue. The THPO Advisory Committee can only pass information along to the Tribal Council, and ask the Tribal Council to make a decision about the project.

Chronological List of Contacts/Pine Creek Mine Hydroelectric
Davis-King & Associates (Shaded entries predate DKA involvement)
April 2011- 9 June 2014/Page 3

Date	Who? Affiliation?	Method	Substance
2013 Oct 18	Raymond Andrews	Telephone	Mr. Andrews called to say that he could not attend the field meeting today.
2013 Oct 18	Big Pine Paiute Tribe THPO Committee	Meeting	The Big Pine THPO and two members of the Advisory Committee met with me at the project site to look at the mine and better understand it. Before discussion, we read one of the Paiute creation stories that happens here in Pine Creek canyon (see contact report). There were no concerns about the project expressed.
2013 Nov 2	Big Pine Paiute THPO	Email	Sent draft contact report for review.
2013 Nov 2	Bishop Paiute THPO	Email	Sent draft contact report for review.
2013 Nov8	Bishop Paiute Economic Development	Telephone	Manual Ruiz, head of the Bishop Paiute Tribe Economic Development Department called to talk with me about the Pine Creek Mine Hydro Project. He had been provided information about the project from the THPO Advisory Committee and wanted background information. I explained how the Tribe had been involved previously, and what the current status was. I suggested he contact Mr. Goodfellow and provided him with contact information. He said he would talk with the Tribal Council about this and get back to me.
2014 Feb 13	USFS/Sheila Irons	telephone	Called Ms. Irons to reintroduce myself and ask if I might visit with her to discuss the project. She said there is a new Forest Archaeologist, and she would prefer to wait until the new archaeologist could meet or confer. She said she would arrange and get back to me. Later she called to say that neither were available on 14 Feb, but that we could have a conference call the following week.
2014 Feb 14	USFS/Sheila Irons and Jacquie Beidl	telephone	See contact report. Discussed project status, cultural resources issues, and meeting dates. They also suggested that DKA would have needed a permit to conduct studies since they were on "BLM land." I susggested that the land was not owned by BLM but the unpatented mining claims did have a relationship with BLM in the form of annual claim payments.
2014 Feb 15	Native American Heritage Commission	Letter	Requested Sacred Land Files Information.
2014 Feb 18	Native American Heritage Commission/Dave Singleton	Email	Mr. Singleton sent me an email to say that he is responsible for Inyo County and the southern half of California from Modesto down to the US-Mexico Border for the past seven years. Mt. Tom is sacred to the folks at the Bishop Paiute Tribe and is usually featured on the "tribal flag."
2014 Feb 19	Native American Heritage Commission	Letter	NAHC reported that the Sacred Land Files failed to indicated the presence of Native American cultural places but that the Round Valley/Rovana areas is considered very sensitive. They also provided (outdated) contact Information for tribal groups.

Chronological List of Contacts/Pine Creek Mine Hydroelectric
Davis-King & Associates (Shaded entries predate DKA involvement)
April 2011- 9 June 2014/Page 4

Date	Who? Affiliation?	Method	Substance
2014 Feb 21	Bill Helmer/Big Pine	Telephone	Asked if he had concerns about the project, and he said that there was "not much to be concerned about" the way the project was described. He will review the memo.
2014 Mar 5	USFS/Jacquie Beidl	Email	Sent her some project information and clarification on meeting time 20 March.
2014 Mar 21	USFS/Jacquie Beidl/Colleen Nicholas	Meeting	Met with the new Inyo NF Archaeologist Beidl and South Zone Archaeologist Nicholas regarding the Pine Creek Mine Project. Explained to them the work that was done to date, the desire to include them in all of the studies, and a general discussion of FERC licensing process. They provided a list of items that they would like addressed in the report, and these will be entered. Some items of concern to them are not within the current scope, but might be addressed in future studies. We arranged to meet the second week of April for me to review USFS files and to provide a draft of the cultural resources report.
2014 Mar 25	USFS/Jacquie Beidl	Email	Contacted Ms. Beidl to let her know about the FERC letter issued 21 March 2014 denying an extension of the term for the preliminary permit, and that I intended to submit my draft report to her still, and that some Native American consultation would be ongoing while the report is under review. Cancelled meeting to be held at Inyo NF offices.
2014 Apr 11	USFS/Jacquie Beidl	Email	Sent an email to Ms. Beidl that the draft report is ready, and provided her with the text of the response to the USFS letter for her to respond before the draft report is issued.
2014 Apr 16	USFS/Jacquie Beidl; Big Pine THPO; Bishop THPO; BIC EPA; FT Ind THPO; FERC Winchell	Email	Sent copy of draft cultural resources report for review and comment. Asked to have them contact me if they would like a printed copy.
2014 Apr 29	USFS/Jacquie Beidl; Big Pine THPO; Bishop THPO	Email	Message asking if I could provide any additional information and requesting their comments and additions by the middle of May.
2014 Apr 30	USFS/Jacquie Beidl	Email	USFS received report and will be reviewing shortly.
2014 Apr 30	Big Pine THPO/Helmer	Telephone	Telephone call regarding the report, with memo follow up. No real concerns– asked to have consultant statement altered to say they do wish to consult; also change a couple of references.
2014 May 2	Big Pine THPO, USFS, SHPO, FERC	Email	Memo detailing Big Pine Tribe's comments on Cultural report.
2014 May 5	USFS/Jacquie Beidl	Email	Email acknowledging receipt of Big Pine Tribe's comments.

Chronological List of Contacts/Pine Creek Mine Hydroelectric
Davis-King & Associates (Shaded entries predate DKA involvement)
April 2011- 9 June 2014/Page 5

Date	Who? Affiliation?	Method	Substance
2014 June 3	USFS/Jacquie Beidl	Email	Reminder request for comments.
2014 June 3	USFS/Jacquie Beidl; Bishop THPO; BIC EPA; FT Ind THPO; FERC Winchell	Email	Reminder request for comments.
2014 June 3	USFS/Jacquie Beidl; Bishop THPO	Read Receipt	Received "read receipt" for the preceding email contact.
2014 June 9	Big Pine THPO/Helmer	Email	Request for references
2014 June 10	Big Pine THPO/Helmer	Telephone/Email	Request for references received and incorporated into report.
2014 June 10	Bishop THPO/Andrews	Telephone/Email	Followup on any comments; notified him that we would be sending in draft final report to SHPO and would copy him on the transmission.

APPENDIX G: MEMO FROM BIG PINE PAIUTE TRIBE OF OWENS VALLEY

Davis-King & Associates
Heritage Resources Management
Post Office Box 10 • Standard • California • 95373
Courier Delivery: 17301 Fitch Ranch Road • Sonora • CA 95370
Electronic Mail • shellydk@frontiernet.net•Cell Phone (209) 694-0420
Telephone (209) 928-3443

TO: Bill Helmer,
FROM: Shelly Davis-King
DATE: 30 April 2014
SUBJECT: Telephone conversation

Page 16, Item 5: would like to change the consultation statement for the Big Pine Tribe to "Big Pine Paiute Tribe of the Owens Valley: Letter asking if the Tribe would like to participate in the licensing process. Big Pine Tribal THPO responded that they would like consult and be involved." The Tribe does wish to consult.

The references to the creation stories should be changed in the bibliography. He will get me the proper citation

Otherwise the report looks okay.