



**United States Department of the Interior  
BUREAU OF LAND MANAGEMENT**

Bishop Field Office  
351 Pacu Lane Suite 100  
Bishop, California 93514  
[www.blm.gov/ca/bishop](http://www.blm.gov/ca/bishop)



September 20, 2012

3809 (CA-170.60) P

Dear Interested Public:

The Bureau of Land Management (BLM) has completed an Environmental Assessment (EA) of the potential environmental impacts that could occur from a proposed Plan of Operations to re-activate the Bishop Mill in northern Inyo County, California. Issues and alternatives identified through public scoping have been incorporated into this environmental review. The EA completed for this proposed project has been posted on the BLM internet site for a 30-day public review and comment period at <http://www.blm.gov/ca/bishop>. To be considered in the environmental review, comments must be received by Friday, October 19, 2012.

Written comments should be addressed to the Bureau of Land Management, Bishop Field Office, 351 Pacu Lane, Suite 100, Bishop, CA, 93514; Attn: Bishop Mill Project. Comments may also be submitted via email to [BLM\\_CA\\_Bishop\\_Public\\_Comment@blm.gov](mailto:BLM_CA_Bishop_Public_Comment@blm.gov); Subject: Bishop Mill Project.

If you would like a hard copy of the EA, or have further questions regarding the proposed Plan of Operations for the Bishop Mill, please contact Collin Reinhardt, Geologist with the BLM Bishop Field Office at (760) 872-5024.

Sincerely,

/s/ Bernadette Lovato  
Bernadette Lovato  
Bishop Field Manager

# BISHOP MILL PROJECT

Environmental Assessment

DOI-BLM-CAC-070-2011-043-EA



September 19, 2012

U.S. Department of the Interior  
Bureau of Land Management  
Bishop Field Office

Bishop Resource Management Plan, Benton Management Area  
T. 6 S., R. 33 E., SW ¼ Section 4, MDB&M  
Inyo County, California

Lease/Serial/Case File No.: CACA 30866  
Proposed Action Title/Type: Bishop Mill/3809

## Project Applicant

0877887 BC Ltd./CMC Metals Ltd.  
369 Terminal Avenue Suite 305  
Vancouver, B.C. V6A 4C4

## Prepared by:

Hauge Brueck Associates  
P.O. BOX 10291  
Zephyr Cove, NV 89448

## Table of Contents

|  |      |
|--|------|
| <b>1.0 INTRODUCTION</b>  |      |
| 1.1. Summary .....   | 1-1  |
| 1.2 Project Area Overview.....                                 | 1-2  |
| 1.3 Purpose and Need .....                                     | 1-6  |
| 1.4 Decision to be Made .....                                  | 1-6  |
| 1.5 Scoping and Issues.....                                    | 1-6  |
| 1.6 Plan Conformance.....                                      | 1-7  |
| 1.7 Prevention of Unnecessary or Undue Degradation.....        | 1-7  |
| 1.8 Relationship to Other Regulatory Authorities .....         | 1-8  |
| 1.8.1 Air Quality .....  | 1-8  |
| 1.8.2 Water Quality.....                                       | 1-8  |
| <b>2.0 PROPOSED ACTION AND ALTERNATIVES</b>                    |      |
| 2.1 Introduction .....   | 2-1  |
| 2.2 Proposed Action Alternative .....                          | 2-1  |
| 2.2.1 Project Overview .....                                   | 2-1  |
| 2.2.2 Project Facilities.....                                  | 2-3  |
| 2.2.3 Project Implementation Specifications .....              | 2-7  |
| 2.2.4 Reclamation .....  | 2-9  |
| 2.3 Limited Operating Period Alternative .....                 | 2-13 |
| 2.4 Reclamation Only Alternative .....                         | 2-14 |
| <b>3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES</b> |      |
| 3.1 Air Quality .....  | 3-1  |
| 3.1.1 Affected Environment .....                               | 3-1  |
| 3.1.2 Direct and Indirect Effects .....                        | 3-1  |
| 3.2 Area of Critical Environmental Concern (ACEC) .....        | 3-4  |
| 3.2.1 Affected Environment .....                               | 3-4  |
| 3.2.2 Direct and Indirect Effects .....                        | 3-4  |
| 3.3 Cultural Resources.....                                    | 3-4  |
| 3.3.1 Affected Environment .....                               | 3-4  |
| 3.3.2 Direct and Indirect Effects .....                        | 3-4  |
| 3.4 Environmental Justice .....                                | 3-4  |

BISHOP MILL PROJECT

3.4.1 Affected Environment ..... 3-4

3.4.2 Direct and Indirect Effects ..... 3-5

3.5 Essential Fish Habitat ..... 3-5

3.5.1 Affected Environment ..... 3-5

3.5.2 Direct and Indirect Effects ..... 3-5

3.6 Farmlands (Prime or Unique) ..... 3-5

3.6.1 Affected Environment ..... 3-5

3.6.2 Direct and Indirect Effects ..... 3-5

3.7 Floodplains..... 3-6

3.7.1 Affected Environment ..... 3-6

3.7.2 Direct and Indirect Effects ..... 3-6

3.8 Global Climate Change..... 3-7

3.8.1 Affected Environment ..... 3-7

3.8.2 Direct and Indirect Effects ..... 3-7

3.9 Invasive, Non-native Species..... 3-8

3.9.1 Affected Environment ..... 3-8

3.9.2 Direct and Indirect Effects ..... 3-9

3.10 Native American Cultural Values..... 3-10

3.10.1 Affected Environment ..... 3-10

3.10.2 Direct and Indirect Effects ..... 3-10

3.11 Noise ..... 3-10

3.11.1 Affected Environment ..... 3-10

3.11.2 Direct and Indirect Effects ..... 3-11

3.12 Rangelands and Permitted Livestock Grazing..... 3-12

3.12.1 Affected Environment ..... 3-12

3.12.2 Direct and Indirect Effects ..... 3-12

3.13 Recreation ..... 3-12

3.13.1 Affected Environment ..... 3-12

3.13.2 Direct and Indirect Effects ..... 3-12

3.14 Social and Economic Values ..... 3-13

3.14.1 Affected Environment ..... 3-13

3.14.2 Direct and Indirect Effects ..... 3-13

3.15 Soils and Geology..... 3-13

## BISHOP MILL PROJECT

|   |      |
|---|------|
| 3.15.1 Affected Environment .....   | 3-13 |
| 3.15.2 Direct and Indirect Effects .....  | 3-14 |
| 3.16 Vegetation – Including Endangered, Threatened and Special Status Species ..... | 3-15 |
| 3.16.1 Affected Environment .....   | 3-15 |
| 3.16.2 Direct and Indirect Effects .....  | 3-16 |
| 3.17 Visual Resources .....   | 3-16 |
| 3.17.1 Affected Environment .....   | 3-16 |
| 3.17.2 Direct and Indirect Effects .....  | 3-17 |
| 3.18 Wastes, Hazardous or Solid .....   | 3-19 |
| 3.18.1 Affected Environment .....   | 3-19 |
| 3.18.2 Direct and Indirect Effects .....  | 3-19 |
| 3.19 Water Quality and Hydrology, Surface and Ground .....                          | 3-21 |
| 3.19.1 Affected Environment .....   | 3-21 |
| 3.19.2 Direct and Indirect Effects .....  | 3-22 |
| 3.20 Wetlands and Riparian Zones .....  | 3-24 |
| 3.20.1 Affected Environment .....   | 3-24 |
| 3.20.2 Direct and Indirect Effects .....  | 3-24 |
| 3.21 Wild and Scenic Rivers .....   | 3-24 |
| 3.21.1 Affected Environment .....   | 3-24 |
| 3.21.2 Direct and Indirect Effects .....  | 3-24 |
| 3.22 Wild Horses and Burros .....   | 3-24 |
| 3.22.1 Affected Environment .....   | 3-24 |
| 3.22.2 Direct and Indirect Effects .....  | 3-25 |
| 3.23 Wilderness .....   | 3-25 |
| 3.23.1 Affected Environment .....   | 3-25 |
| 3.23.2 Direct and Indirect Effects .....  | 3-25 |
| 3.24 Wildlife - Including Endangered, Threatened and Sensitive Species.....         | 3-25 |
| 3.24.1 Affected Environment .....   | 3-25 |
| 3.24.2 Direct and Indirect Effects .....  | 3-26 |
| 3.25 Traffic and Circulation.....   | 3-27 |
| 3.25.1 Affected Environment .....   | 3-27 |
| 3.25.2 Direct and Indirect Effects .....  | 3-27 |
| 3.26 Cumulative Impacts .....   | 3-28 |

BISHOP MILL PROJECT

4.0 LIST OF PREPARERS AND PERSONS/AGENCIES CONSULTED

4.1 List of Preparers ..... 4-1

4.2 Persons/Agencies Consulted ..... 4-1

4.3 Final Agency Review ..... 4-2

5.0 REFERENCES

**Figures**

Figure 1. Bishop Mill Site Location ..... 1-3

Figure 2. Bishop Mill Project Area..... 1-4

Figure 3. Bishop Mill Site Plan and Existing Disturbance ..... 1-5

Figure 4. Proposed Site Disturbance..... 2-2

**Tables**

Table 1. Project Area Disturbance Estimates for Reclamation..... 2-10

## 1.0 INTRODUCTION

|                                     |  |
|-------------------------------------|--|
| <b>EA NUMBER:</b>                   | DOI-BLM-CAC-070-2011-043-EA  |
| <b>LEASE/SERIAL/CASE FILE NO.:</b>  | CACA 30866   |
| <b>PROPOSED ACTION TITLE/TYPE:</b>  | Bishop Mill/3809   |
| <b>LOCATION OF PROPOSED ACTION:</b> | Bishop Mill, Inyo County, California; Bishop Resource Management Plan (RMP) Benton Management Area; T. 6 S., R. 33 E., SW ¼ Section 4, MDB&M (Figures 1 - 3) |
| <b>APPLICANT:</b>                   | 0877887 BC Ltd., a wholly-owned subsidiary of CMC Metals Ltd., Vancouver, British Columbia, Canada   |

### 1.1 SUMMARY

This Environmental Assessment (EA) was prepared to analyze and disclose the environmental consequences of re-activating or not re-activating the Bishop Mill in Inyo County, California. The applicant (0877887 BC Ltd., a wholly-owned subsidiary of CMC Metals Ltd., Vancouver, British Columbia, Canada) has submitted a proposed Plan of Operations and Reclamation Plan (PoO) for the Bishop Mill (0877887 BC Ltd., 2012) in response to a U.S. Department of the Interior, Bureau of Land Management, Bishop Field Office (BLM) order to bring the mill site into compliance with federal regulatory requirements for mining claims located on public lands pursuant to Title 43, Code of Federal Regulations, Part 3800 (43 C.F.R. § 3800 *et seq.*).

As proposed, the applicant plans to re-activate the existing Bishop Mill as an independent or custom mill (43 C.F.R. § 3832.31(b)), processing ores transported from existing off-site mining locations. The applicant intends to transport up to 75 tons of ore per day to stockpile at the site for processing. The ore would be processed through the existing gravity mill at an estimated throughput rate of up to four tons per hour (approximately 96 tons per day). The waste derived from ore processing (tailings) would be deposited in a new waste management unit (WMU) for Group A mining waste to be constructed at the site of an existing, but inoperative, tailings impoundment. The WMU would be constructed and operated in accordance with waste discharge requirements specified by the Lahontan Region of the California Regional Water Quality Control Board (LRWQCB) on July 13, 2011 in Board Order No. R6V-2011-0048 (CRWQCB, 2011a). No cyanide, or other chemicals classified as hazardous substances, would be used in the milling process.

The mill would be operated for a period of up to five years with a projected total of up to 32,000 tons of tailings being deposited into the WMU as outlined in the proposed PoO. While the mill has the capacity to process up to 96 tons of ore per day, the currently identified sources of ore are not capable of producing a steady feed to the mill that would allow for continuous operation at that rate. As a result, the applicant anticipates extended periods of reduced throughput due to the combined effects of limited ore availability and maintenance shutdowns. Regardless of the operating schedule, the capacity of the WMU would not be exceeded as part of the proposed PoO. At the end of the operating period, only tailings characterized as Group C (non-hazardous) waste would be allowed to remain in the WMU. The applicant would be required to remove, and

## BISHOP MILL PROJECT

transport to an approved hazardous waste facility, any and all tailings characterized as either Group A or Group B waste as part of any BLM approved PoO for the Bishop Mill.

Three alternatives for future action at the Bishop Mill are considered in this EA: Alternative 1, the Proposed Action alternative, would authorize operation and reclamation of the Bishop Mill as outlined in the applicant's proposed PoO; Alternative 2, the Limited Operating Period alternative, would authorize operation and reclamation of the Bishop Mill consistent with the applicant's proposed PoO except that night time operations would not be permitted; and Alternative 3, the Reclamation Only alternative, would deny re-activation of the Bishop Mill and require removal of the existing facilities and reclamation of the site.

If the Bishop Field Manager selects an alternative for implementation that would have "significant" impacts on the human environment based on the analyses in the EA, then an Environmental Impact Statement (EIS) must be prepared before the action could be authorized. If not, a Decision Record (DR) will be issued along with a Finding of No Significant Impact (FONSI), documenting the reasons why implementation of the selected alternative would not result in "significant" impacts.

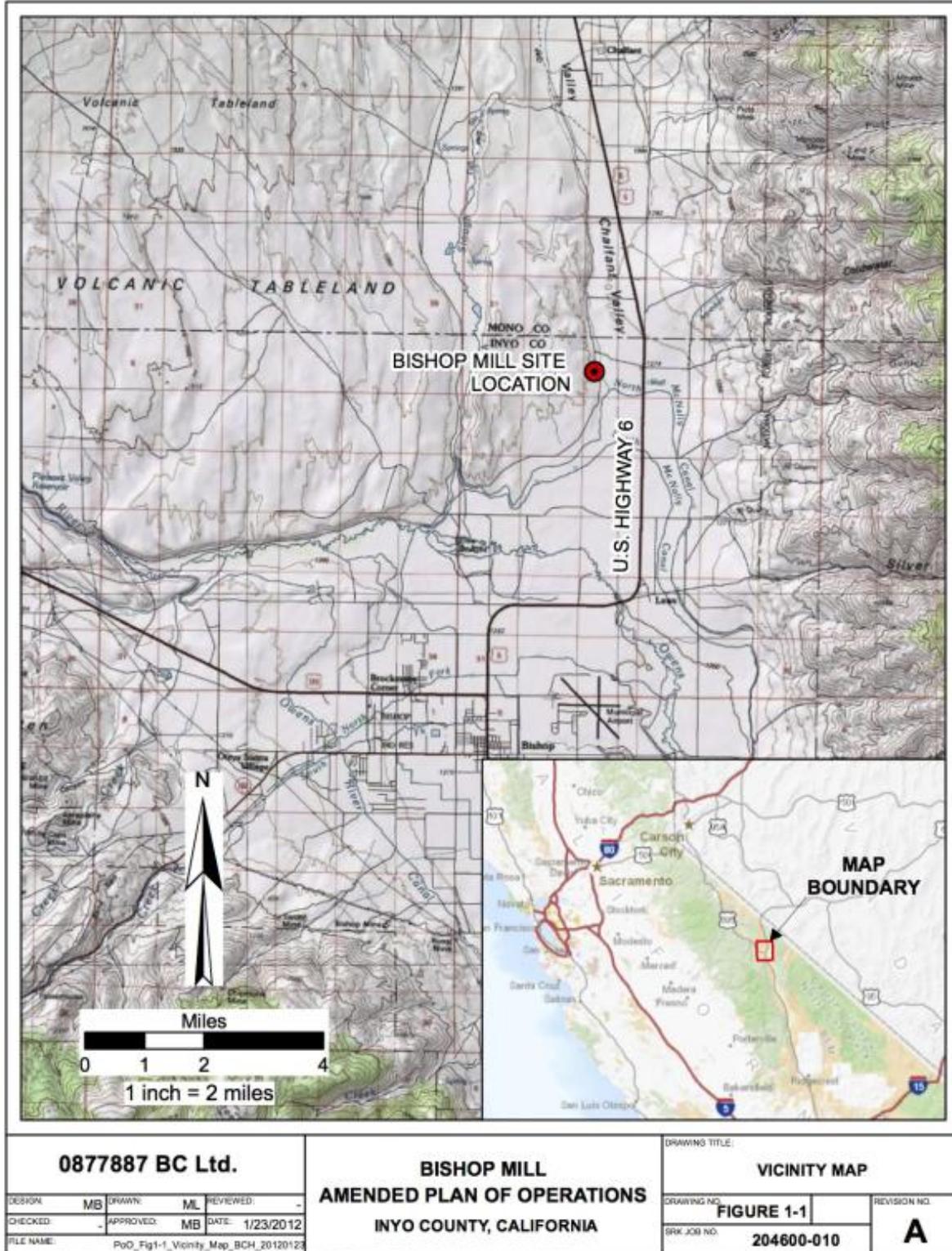
## 1.2 PROJECT AREA OVERVIEW

The Bishop Mill is located in Inyo County near the northern extent of the Owens Valley, approximately 9 miles northeast of the town of Bishop, California (Figure 1). The project area is situated on public lands administered by the BLM Bishop Field Office within the bounds of seven (7) mill site claims (43 C.F.R. § 3832.31) controlled by the applicant (CAMC 264196, CAMC 264197, CAMC 264198, CAMC 264199, CAMC 264200, CAMC 301739 and CAMC 301740). Together, these mill-site claims total approximately 35 acres. Rudolph Road (an existing, improved dirt road) traverses westerly from U.S. Highway 6 for approximately one mile to Pumice Road, which provides access to the mill site (Figure 2). Existing surface disturbance in the project area encompasses about 9.1 acres (Figure 3) and is restricted to four (4) claims (CAMC 264196, CAMC 264197, CAMC 264198 and CAMC 301739).

As shown in Figure 3, existing site facilities consist of: a main mill building (formerly the concentrate treatment building), a storage warehouse, a garage, 5 groundwater wells (4 monitoring wells and 1 production well), a propane tank, above-ground and below-ground utilities, historic tailings storage facilities (existing tailings pond), and an area south of the main mill building where tailings from the earliest mill operations (known as the Mammoth Mine tailings) were relocated and covered by the previous operator in 2006 during construction of the current tailings impoundment. All facilities and equipment to be utilized for this project are enclosed by a chain-link perimeter fence. Public access to the project area is restricted by a locked gate and monitored by an on-site guard.

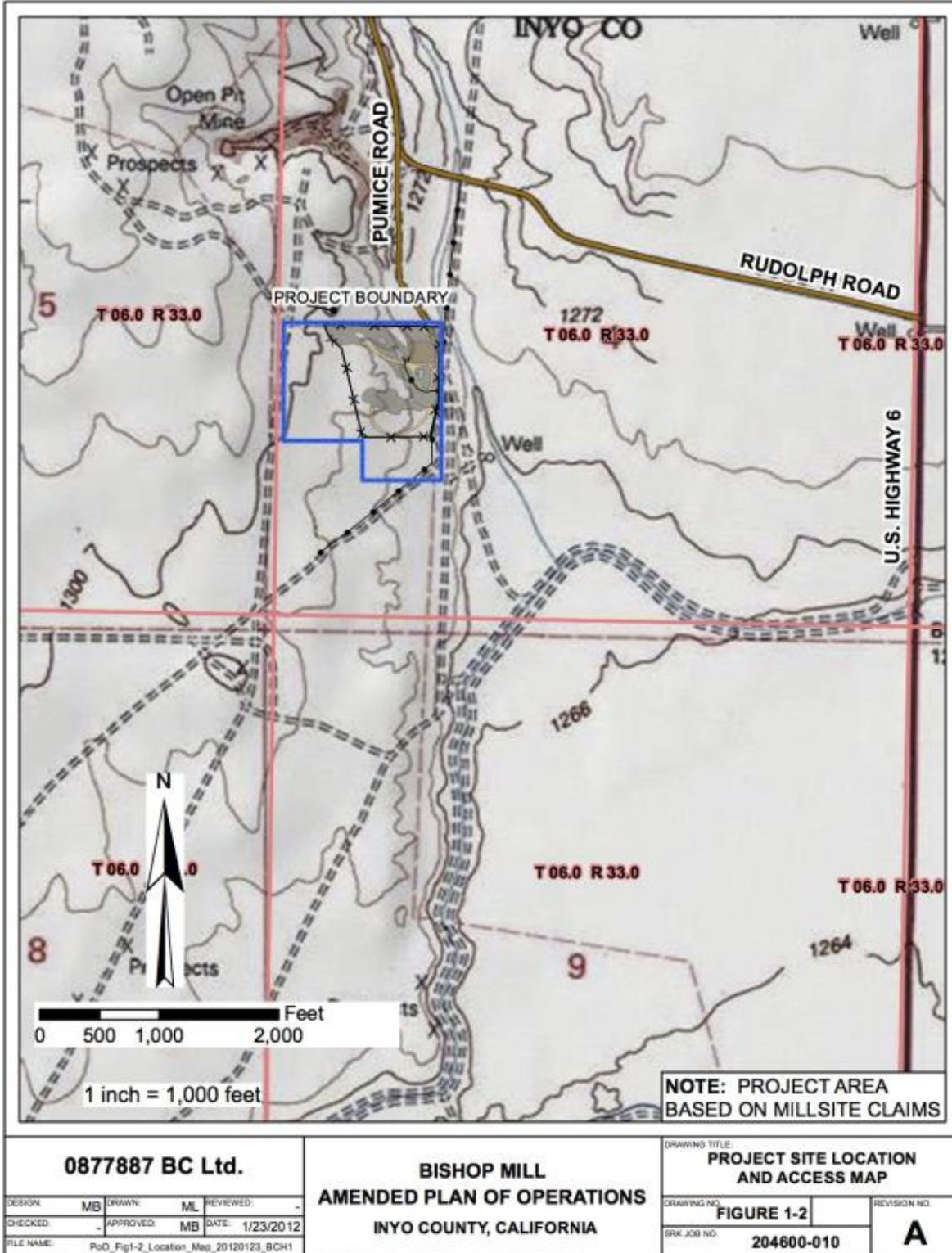
BISHOP MILL PROJECT

Figure 1 Bishop Mill Site Location



BISHOP MILL PROJECT

Figure 2 Bishop Mill Project Area





## BISHOP MILL PROJECT

Ranching, dispersed recreation, and municipal watershed protection are the primary land uses in the vicinity of the project site. In addition, residential development occurs approximately 2.0 miles east of the project site at Rudolph Ranch/White Mountain Estates, 4 miles southeast of the project site at Laws, and 4.5 miles north of the project site at Chalfant. There are no active mines or mills in the area. The nearest minerals extraction and processing operation is a sand and gravel plant located on City of Los Angeles Department of Water and Power (LADWP) lands approximately 3.5 miles southwest of the project site near the Owens River on Jean Blanc/Five Bridges Road.

### 1.3 PURPOSE AND NEED

The purpose and need for action is to consider approval and authorization of the applicant's proposed Plan of Operations and Reclamation Plan (PoO) for re-activation of the Bishop Mill (0877887 BC Ltd., 2012). The need for action is established by the BLM's responsibility under the Federal Land Management and Policy Act (FLPMA) to manage public lands "in a manner which recognizes the Nation's need for domestic sources of minerals" (43 U.S.C. § 1701(a)(12)) and to respond to an application to operate an independent or custom mill site on valid existing claims pursuant to regulations implementing the general mining laws (43 C.F.R. § 3800 *et seq.*). Action is also needed to bring the existing Bishop Mill into compliance with applicable federal regulations by either permitting it to operate as an independent or custom mill site under an approved PoO, or to deny re-activation of the mill and require removal of the existing facilities and reclamation of the site.

### 1.4 DECISION TO BE MADE

This EA will identify and evaluate the project-related environmental impacts that could result from the re-activation and subsequent reclamation of the Bishop Mill as proposed by the applicant, as well as other reasonable alternatives for operation and/or reclamation of the mill site. Based on the analyses in the EA, the BLM will determine the best course of action for the future operation and/or reclamation of the Bishop Mill.

### 1.5 SCOPING AND ISSUES

In early May 2012, the BLM solicited public input on the applicant's proposed Plan of Operations and Reclamation Plan (PoO) for re-activation of the Bishop Mill. A public notice pursuant to 43 C.F.R. § 3809.411(c) ran in the Inyo Register on May 3, 2012 and again on May 17, 2012. The notice also ran in the Mammoth Times on May 4, 2012 and again on May 18, 2012. The notice was also mailed to residents in the vicinity of the Bishop Mill on May 4, 2012. A news release soliciting public comments on the proposal was also posted on the BLM's public website at [http://www.blm.gov/ca/st/en/info/newsroom/2012/may/CC1254\\_bishopmill.html](http://www.blm.gov/ca/st/en/info/newsroom/2012/may/CC1254_bishopmill.html) on May 8, 2012.

Public scoping comments were accepted until June 4, 2012 and 19 comment letters were received from nearby residents, interested environmental groups, and other public agencies. A summary of key issues raised during public scoping include potential effects on: 1) water quality and quantity, including domestic and agricultural water supplies (both for the Tri-Valley area and the City of Los Angeles) and surface and groundwater (Tri-Valley and Fish Slough aquifers)

## BISHOP MILL PROJECT

sources; 2) traffic and public safety; 3) visual quality, including night-skies; 4) air quality and fugitive dust emissions; 5) quietness and noise; 6) economics, including the potential for job creation and the potential for reduction in nearby residential property values; 7) the area's rural setting and compatible land uses; 8) cultural resources and Native American values; and 9) fish, wildlife and plants, including endangered, threatened and sensitive species. Other issues identified during public scoping included characterization of ore sources and cumulative effects.

## 1.6 PLAN CONFORMANCE

The proposed action and alternatives are subject to the Bishop Resource Management Plan (RMP), approved March 25, 1993 (USDI BLM, 1993). The Bishop RMP provides a comprehensive framework for managing land use authorizations, including minerals operations, for public lands administered by the BLM Bishop Field Office. The proposed action and alternatives have been reviewed and are in conformance with the plan.

Specifically, the action would occur in an area identified as open to locatable mineral entry in the Bishop RMP (RMP p.22). Additional RMP direction that supports implementation of the action includes:

### General Policies

5. Public lands will be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber including implementation of the Mining and Minerals Policy Act of 1970, as it pertains to the public lands [Section 102(a)(12)] (RMP p. 8).

### Standard Operating Procedures for Minerals

1. Reclamation bonds will be required for all minerals actions occurring under a Plan of Operations in accordance with Memorandums of Understanding with Inyo and Mono Counties (RMP p. 14).
2. Claim markers must be in conformance with state law and Bureau policy (RMP p. 14).
4. All mineral operations will conform with the state's Surface Mining and Reclamation Act, and county and local health and operations requirements (RMP p. 14).

## 1.7 PREVENTION OF UNNECESSARY OR UNDUE DEGRADATION

Section 302 of the FLPMA established the BLM's multiple use mandate and responsibility to manage the use, occupancy, and development of the public lands while preventing unnecessary or undue degradation of those lands (43 U.S.C. § 1732 *et seq.*). The FLPMA requires that the Secretary of the Interior "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the [public] lands" (43 U.S.C. § 1732(b)).

The BLM's mining regulations, codified in Title 43, Code of Federal Regulations, Part 3800 (43 C.F.R. § 3800 *et seq.*), provide the regulatory framework for the prevention of unnecessary or undue degradation of the public lands for minerals operations conducted under a plan of

## BISHOP MILL PROJECT

operations. These regulations require that a “plan of operations must demonstrate that the proposed operations would not result in unnecessary or undue degradation of public lands” (43 C.F.R. § 3809.401(a)).

To prevent unnecessary and undue degradation while conducting milling operations on public lands an applicant is required to: 1) Comply with the applicable performance standards identified by regulation under 43 C.F.R. § 3809.420; 2) Comply with the terms and conditions established by the BLM for any approved plan of operations; and 3) Comply with any other federal or state laws related to environmental protection and protection of cultural resources (43 C.F.R. § 3809.415(a)). The applicant must also assure that operations are “reasonably incident” to the milling operation (43 C.F.R. § 3809.415(b)).

## **1.8 RELATIONSHIP TO OTHER REGULATORY AUTHORITIES**

### **1.8.1 Air Quality**

The Bishop Mill is located within an air basin under jurisdiction the State of California’s Great Basin Unified Air Pollution Control District (GBUAPCD). To ensure conformance with federal, state and local air quality regulations, the applicant must apply for, and receive, an Authority to Construct (ATC) from the GBUAPCD. An ATC (1410 00 07) was issued to the previous mill site owner in 2008. An updated ATC, based on the current proposed Plan of Operations and Reclamation Plan (PoO) must be received by the applicant prior to any BLM authorization for operation of the Bishop Mill.

To mitigate potential risks from hazardous airborne pollutants associated with mill operations, the BLM will incorporate terms and conditions prescribed by the GBUAPCD in an approved ATC into any BLM authorization for operation of the Bishop Mill.

### **1.8.2 Water Quality**

The Bishop Mill is located within a watershed under jurisdiction of the State of California’s Lahontan Region of the California Regional Water Quality Control Board (LRWQCB). To ensure conformance with California's Clean Water Act, the applicant must comply with the waste discharge requirements for the Bishop Mill adopted by the LRWQCB in July, 2011 under Board Order No. R6V-2011-0048 (CRWQCB, 2011a).

To mitigate potential risks to water quality associated with mill operations, the BLM will incorporate the waste discharge requirements prescribed by the LRWQCB in Board Order No. R6V-2011-0048 into any BLM authorization for operation of the Bishop Mill.

---

## **2.0 PROPOSED ACTION AND ALTERNATIVES**

---

### **2.1 INTRODUCTION**

The BLM's internal and external scoping process contributed to the formulation of three alternatives described below. The applicant submitted a proposed Plan of Operations and Reclamation Plan (PoO) for the Bishop Mill in January of 2012 (0877887 BC Ltd., 2012). The proposed PoO serves as Alternative 1, the Proposed Action alternative, which would be the re-activation and reclamation of the Bishop Mill as outlined in the PoO. Alternative 2, the Limited Operating Period alternative, would be the same as Alternative 1 except that night-time operations would not be permitted. Alternative 3, the Reclamation Only alternative, would deny re-activation of the Bishop Mill and require removal of the existing facilities and reclamation of the site.

### **2.2 PROPOSED ACTION ALTERNATIVE**

#### **2.2.1 Project Overview**

Figure 4 presents the general configuration and extent of proposed surface disturbance in the project area. The proposed operation would include importation and stockpiling of ore, processing of ore, disposal of processed ore (tailings) and site reclamation. The majority of the ore processed would contain gold, silver, tungsten, molybdenum minerals, and copper, lead, and zinc sulfide minerals. Processing is described in detail in Sections 3.13.6 and 3.15 and diagrammed in Figure 3-2 of the proposed PoO (0877887 BC Ltd., 2012). Ore processing would use existing on-site facilities as well as a proposed Krupp Screen improvement. No mineral exploration or mining would occur on site. Chemicals would be used during the floatation and gravity separation processes. No cyanide or other chemicals classified as hazardous substances would be used in the milling process.

Sources of ore would be supplied to the Bishop Mill from existing mining operations. The primary ore source would be the Radcliffe Mine in the Ballarat Mining District in south-central Inyo County. Ore may also come from the Darwin Mine, which is also located in south-central Inyo County. Both mines are located on private land and permitted by Inyo County. Neither mine is dependent upon the Bishop Mill for either authorization or operation.

The Radcliff Mine operates under Inyo County Conditional Use Permit (CUP) No. 2007-05 (formerly CP No. 93-10) issued to Pruett Ballarat Inc. Access to the Radcliff Mine across public lands is authorized under a Plan of Operations (PoO) by the BLM Ridgecrest Field Office (2007-05/Pruett Ballarat Inc. formerly RP# 93-1). The Darwin Mine operates under Inyo County CUP No. 2007-04. Environmental documentation (Negative Declarations) was prepared by Inyo County pursuant to the California Environmental Quality Act (CEQA) to support their authorization of both CUPs.



## BISHOP MILL PROJECT

Up to 75 tons of ore per day would be trucked to the Bishop Mill in over-the-highway haul trucks. The ore would be off-loaded at the existing concrete ore patio and/or the temporary ore stockpile area northwest of the ore patio. The raw ore would be loaded into the ore feed bin (25-ton capacity) by a front end loader, then gravity fed to the mill at the rate of approximately 4 tons per hour, or approximately 96 tons per 24-hour shift. If large diameter rocks are present in the transported ore, the ore may be processed through a grizzly screen before passing to the coarse ore bin. Larger diameter rocks would be stored on the ore patio until they could be broken up for processing. The ore would be crushed and milled to approximately minus 10 mesh. The material would then go through a jigging concentration process where the coarse concentrates are dried and bagged for off-site refining. The tailings from the jigging process would be mixed with water and flotation reagent chemicals consisting of Xanthate 350 (a general collector), Aero 208 (a free gold collector), and Aero 31 (a sulfide collector) creating chemically charged ore slurry that is 30 percent solids. Soda ash would be added to maintain a near neutral pH.

The ore slurry would be transferred to flotation cells where Aero Froth, a flotation agent, is added to facilitate recovery of metallic particles. The flotation cells and frothing agent create an agitated air-infused froth bringing the metallic particles to the surface of the cells. Each cell in the system collects the frothed metallic particles and transports them to the conditioner tank.

The concentrate containing the processing reagents and precious metals would be piped to the conditioner tank and dewatered, which would allow most of the additive chemicals to be re-circulated back into the processing system for re-use. The concentrate would be further dewatered at the Leaf/Disk filter. The concentrate filter material would then be put through a concentrate dryer to reduce the moisture content to around 10 percent and then loaded in drums or flexible intermediate bulk container sacks for shipping to an off-site refinery.

The tailings from the flotation cells would be passed from the last flotation cell to the Launderer tray where a surfactant (Shaklee's Basic H) would be added. The Basic H would break down any remaining flotation reagents, allowing the heavy metal particles to sink and prepare the ore slurry for the Diester gravity recovery shaker table. The shaker table would recover metallic particles that were too large or heavy to be recovered by the flotation process. The table concentrates would then be sent to the concentrate thickener tank to be dewatered, filtered and sent through the concentrate dryer. The dried concentrate would also be shipped to an off-site refinery. The rejects from the Diester table (tailings) would be piped to a proposed Waste Management Unit (WMU) for Group A mining waste permitted by the Lahontan Region of the California Regional Water Quality Control Board (LRWCB) for disposal. Tailings piped to the WMU would be allowed to settle and the water re-circulated to the mill for reuse. At the end of the operating period, only tailings characterized as Group C (non-hazardous) waste would be allowed to remain in the WMU. The applicant would be required to remove, and transport to an approved hazardous waste facility, any and all tailings characterized as either Group A or Group B waste as part of any BLM authorization for operation and reclamation of the Bishop Mill.

### 2.2.2 Project Facilities

The proposed project would maintain and utilize the existing on-site gravity and flotation mill facilities as detailed in Section 3.15 of the proposed PoO (0877887 BC Ltd., 2012). The applicant also proposes the installation of a Krupp Screen to increase the efficiency of the

## BISHOP MILL PROJECT

grinding process, which would require the construction of a concrete pad (approximately 500 square feet or 0.01 acre) southwest of the existing mill building.

Waste (tailings) derived from ore processing would be deposited via slurry into the proposed WMU, designed to comply with Title 27, California Code of Regulations for a Group A mining waste unit. The new WMU would be constructed at the location of the existing, but currently inoperative, tailings impoundment.

### ***WMU Design***

The applicant proposes the temporary removal of previously deposited tailings from the existing tailings impoundment, disposal of the existing liner, and construction of a new double-lined WMU for Group A mining waste at the site of the existing tailings impoundment. The design report and drawings were developed during the preparation of a Report of Waste Discharge (RoWD) prepared for the LRWQCB in November 2010 (SRK, 2010). Design and construction details of the proposed WMU are specified in the Engineering Design Report in Appendix A of the RoWD.

The WMU would be double lined with a leachate recovery and collection system (LRCS). The WMU would be approximately 25 feet deep with internal tailings impoundment side slopes configured at 2H:1V to maximize storage capacity within the available disturbance area footprint. The top surface area at the inside crest of the WMU would be approximately one acre (43,000 square feet).

Proposed WMU construction activities include:

1. Removal of a section of the 40-mil liner for use at the ore patio to underlay and cover the relocated existing tailings.
2. Removal of the existing tailings (approximately 100 tons) and placement on the ore patio that is covered with a 40-mil liner. The temporary stockpile would be covered with an additional layer of 40-mil liner.
3. Removal and disposal of the remaining 40-mil liner in a permitted municipal solid waste facility.
4. Conducting confirmation soil sampling at the bottom of the WMU to ensure that soil is clean, including coordination with the BLM and the LRWQCB to establish success criteria and submittal of lab analytical results for review and approval.
5. Reconstructing the existing tailings impoundment to install the proposed Group A WMU with 2H:1V side sloped tailings impoundment and LCRS.
6. Moisture conditioning and compacting the new WMU base and side slopes to a minimum of 90 percent of maximum dry density at +/-2 percent of optimum moisture content per ASTM D1557, modified Proctor testing - compacted density of existing tailings impoundment side slopes and base to be confirmed and reconstructed as required to meet technical specifications.

## BISHOP MILL PROJECT

7. Smooth rolling the final compacted soil surface and removal of protrusions that could damage liner.
8. Excavating the LCRS sump, overliner seepage collection drain sump, and liner anchor trenches around tailings impoundment perimeter.
9. Placing a 60-mil Agru Super GripNet geomembrane secondary liner over the compacted WMU base and side slopes.
10. Placing 6-inch diameter PVC pipe and clean drain gravel in sump.
11. Placing geotextile over the gravel-filled sump to protect the primary liner.
12. Placing a 80-mil smooth HDPE liner over the top of the secondary liner.
13. Backfilling and compacting liner anchor trenches.
14. Constructing an overliner seepage collection drain and riser.
15. Constructing an up-gradient diversion berm around the top of the up-gradient slope cut to divert the 100-year, 24-hour storm volume.

The new WMU would utilize as much of the existing tailings impoundment configuration as possible, but would be approximately five (5) feet deeper at the same side slope ratio and expanded to the north within the existing disturbed area using the existing fence line and access road as the boundary limitations. The layout of the WMU has crest dimensions of approximately 185 feet by 240 feet.

The discharge pipe from the mill to the tailings impoundment and the reclaim water pipe back to the mill would both be constructed as pipe-in-pipe such that the outer leak detection pipe would gravity drain back into the WMU. Final pipe size would be determined by the applicant, but would be one of the following combinations: 2-inch HDPE inside 4-inch HDPE; 3-inch HDPE inside 6-inch HDPE; or 4-inch HDPE inside 8-inch HDPE. An HDPE wear sheet would be installed at the discharge point in the WMU, and wherever else required to protect the liner from abrasion. Wear sheets would be anchored at the WMU crest by either welding the wear sheets to the existing liner or by constructing a second anchor trench outside the WMU crest. Wear sheets would be inspected weekly and replaced as necessary to protect the primary WMU liner.

Additional design details are referenced in Sections 5.5.1 through 5.6.8 of the RoWD (SRK, 2010) including storage capacity, water/solids balance, stability analyses, storm water diversion, overliner seepage collection system and construction standards.

### ***Electrical Power***

Southern California Edison supplies electrical power via an existing power line. The mill operates on 440-volt, three-phase power and would draw an estimated 937,320 kWh of electricity per year. Other facilities in the project area operate on 220-volt and 110-volt power. The proposed project includes no backup power sources.

## BISHOP MILL PROJECT

***Water Supply***

Water is supplied via an on-site production well (PW-3). Throughout the milling process, approximately 1,000 gallons of water would be used per ton of ore, or up to 96,000 gallons per day at the maximum operating capacity. A large portion of the processing water would be recycled at the thickener tank and the remaining water would be reclaimed from the WMU after the tailings settle out. Although most of the water would be recycled, there would be some losses due to evaporation and moisture content with the concentrate products. These losses would require replenishment from the on-site production well as needed. Water for fugitive dust mitigation (approximately 50 gallons daily) would also come from the on-site production well.

***Monitoring Wells***

Two existing monitoring wells (MW-3 and MW-4) constructed to implement State of California Waste Discharge Requirements (WDRs) issued by the LRWQCB (CRWQCB, 2011a) require BLM authorization as part of the proposed project. State and local permits were acquired prior to monitoring well installation and commencement of the pumping test. These permits included Inyo County Well Permits (approved by Andrew Kirk - Inyo Co. Health Department prior to drilling), LRWQCB well location approval (Tammy Lundquist - Board approved on September 27, 2010), and a State Wide Discharge to Land Permit (Harold Singer - Board approved on September 29, 2010).

Drilling activities and monitoring well construction was completed by a California licensed driller (Reeves Drilling Company contracted by CMC Metals Ltd.) in accordance with Title 27 of the California Code of Regulations (CCR), Sections 20923 and 20925. Drill holes were advanced using mud rotary drilling techniques and wells were installed under the direct supervision of Inyo County, SRK, and CMC Metals Ltd..

On September 29, 2010 a borehole was advanced into groundwater to a total depth of 93 feet below ground surface (bgs) at the location shown in Figure 4, but it collapsed to a total depth of 88 feet bgs. Well MW-3 was completed in this borehole to a total depth of 88 feet bgs, and consists of 2-inch box thread, flush joint, schedule 40 PVC pipe with 0.01-inch factory perforations through the bottom 30 feet of the well.

On September 30, 2010 a borehole was advanced to a total depth of 53 feet below ground surface (bgs) at the location shown in Figure 4. Well MW-4 was completed in this borehole to a total depth of 53 feet bgs, and consists of 2-inch, box thread, flush joint, schedule 40 PVC pipe, with 0.01-inch factory perforations through the bottom 30 feet of the well.

The drilling company was contracted to complete the development of wells MW-3 and MW-4 with approved methods. Development of well MW-3 began on September 30, 2010 via airlifting techniques; however, it was observed that this technique was not an effective method due to the static groundwater level and submergence depth necessary to achieve a desirable airlift for well development. SRK advised the use of bailers or a swabbing tool would be more effective for development of the wells. Consequently, water was bailed from well MW-3, totaling approximately 30 gallons, and from well MW-4 totaling about 10 gallons, in efforts to develop the two wells. The drilling contractor was not able to accommodate additional well development

## BISHOP MILL PROJECT

due to lack of equipment. SRK advises additional well development be conducted in the future for wells MW-3 and MW-4.

***Geochemical Characterization of Off-Site Ore and On-Site Tailings***

Representative ore samples for each source and/or lithological variant of ore that is shipped to the Bishop Mill would be collected for analysis of the constituents identified in Table 4-1 of the Report of Waste Discharge (RoWD) prepared for the LRWQCB in November 2010 (SRK, 2010) prior to transport to the mill for processing. Each sample would be submitted to a certified laboratory for leachable solutes (e.g., Meteoric Water Mobility Procedure, Acid Base Accounting analyses or equivalent, total threshold limit concentrations, and soluble threshold limit concentrations).

Representative tailings samples would be collected prior to final reclamation of the WMU. Each sample would be submitted to a certified laboratory for leachable solutes (e.g., Meteoric Water Mobility Procedure, Acid Base Accounting analyses or equivalent, total threshold limit concentrations, and soluble threshold limit concentrations).

***Exploration***

No mineral exploration is proposed and no mineral exploration would occur in the project area.

***Work Force***

Up to seven (7) workers would be employed at the facility during full time operations. Technical and professional services would be contracted as needed.

**2.2.3 Project Implementation Specifications*****Measures to Minimize Surface Disturbance and Avoid Adverse Effects***

The BLM's surface management regulations (43 C.F.R. § 3809.420) establish the performance standards that apply to the proposed project. Additional measures to be taken to prevent unnecessary and undue degradation of public lands due to the proposed project are listed below. Performance standards established by regulation (43 C.F.R. § 3809.420), as well as the measures listed below, would be implemented during the design, construction, operation and reclamation of the project:

- Regulated components of the project would be designed and constructed to meet or exceed both LRWQCB and/or BLM design criteria.
- Roads would be constructed to the minimum necessary width and would receive maintenance as necessary.
- Regulated wastes would be managed according to relevant regulations.
- Surface disturbance would be minimized while optimizing the recovery of mineral resources.

## BISHOP MILL PROJECT

- Fugitive dust and other air emissions from disturbed and exposed surfaces would be controlled with water application (onsite well PW-3) in accordance with regulations and permits.
- The applicant would comply with applicable federal and state water quality standards, including the Federal Water Pollution Control Act, as amended (30 U.S.C. § 1151 *et seq.*).
- Surface water drainage control would be accomplished by diverting storm water, isolating facility runoff, and minimizing erosion.
- Where suitable as a growth media, surface soils would be managed as a growth media resource and removed, stockpiled, identified, and replaced during reclamation.
- Reclamation would be implemented which includes earthwork and re-contouring, revegetation and stabilization, detoxification and disposal, and monitoring operations necessary to satisfactorily reclaim the project area disturbance including: roads, processing facilities, tailings impoundment, ancillary buildings, equipment and any remaining ore stockpiles.
- The applicant would be required to implement exclusion measures to prevent bird and bat species from coming in contact with the WMU surface. Exclusion measures shall include netting to be placed over the WMU. Netting shall be of a type that is weather resistant and UV treated to prevent breakdown and decomposition and shall be constructed of 1-inch mesh to exclude bird and bat species from contacting the WMU. The netting would be supported by cables and supports anchored into the ground surface to prevent net sagging and contact with the WMU surface. Exclusion netting shall be inspected on a daily basis to ensure no openings have been created and to maintain the net to prevent snow/ice buildup in the winter months.
- If previously undiscovered archaeological resources or human remains are encountered during project construction or operation, operations shall be immediately stopped and the Bishop Field Office manager and archaeologist notified. Project operations in the vicinity of the discovery shall cease until the BLM determines that continued operations would not adversely affect significant historical or archaeological properties. If the BLM determines that resumption of operations would adversely affect historical or archaeological resources that may be eligible for listing in the National Register of Historic Places (NRHP), the BLM shall consult as appropriate to determine measures to be completed before operations can resume. The BLM shall ensure compliance with regulations pertaining to the evaluation of significance, assessment of effects, and consultation with the State Historic Preservation Officer and the Advisory Council on Historic Preservation as appropriate (36 C.F.R part 800.4 through 800.9).
- To avoid impacts to night skies, any new outdoor light fixtures shall use low-energy, fully shielded light fixtures which direct light downward (i.e. lighting shall not emit higher than horizontal level).

## BISHOP MILL PROJECT

- Primary access to the project area would be limited to existing roads. The applicant shall provide their fair share of road maintenance to access roadways located outside project boundaries. The applicant shall conduct routine inspection of Rudolf Road and Pumice Road (between U.S. Highway 6 and the project site) and provide grading or an equivalent contribution toward road maintenance in coordination with the BLM.

#### **2.2.4 Reclamation**

Major land uses occurring in the vicinity of the project site include ranching, dispersed recreation, and municipal watershed protection. In addition, residential development occurs approximately 2.0 miles east of the project site at Rudolf Ranch/White Mountain Estates, 4 miles southeast of the project site at Laws, and 4.5 miles north of the site at Chalfant. There are no active mines or mills in the area. The nearest minerals extraction and processing operation is a sand and gravel plant located on City of Los Angeles Department of Water and Power (LADWP) lands approximately 3.5 miles southwest of the project site near the Owens River on Jean Blanc/Five Bridges Road. Following mill closure, the project area would be reclaimed to support land uses consistent with direction prescribed by the Bishop Resource Management Plan (RMP)(USDI BLM, 1993).

##### ***Reclamation Objectives***

The objectives of the reclamation program are:

- To provide a stable post-milling landform that supports prevailing land uses.
- To minimize erosion and protect water resources through control of water runoff and stabilization of disturbed areas (e.g., cut and fill embankments, growth media stockpiles, etc.).
- To establish post-reclamation surface soil conditions conducive to the regeneration of a stable plant community through stripping, stockpiling and reapplication of soil material.
- To revegetate disturbed areas with a diverse mixture of plant species in order to establish long-term productive plant communities compatible with existing land uses.
- To maintain public safety by stabilizing or limiting access to landforms that could constitute a public hazard.
- To maintain public health and provide municipal watershed protection by removing all existing and newly produced mining waste characterized as either Group A or B from the project area to an appropriate landfill for disposal.

##### ***Financial Assurance Bond***

The applicant must post an adequate financial assurance bond to cover the cost of the required reclamation work, including the removal of buildings, equipment, vehicles, personal property and any trash, debris, refuse or hazardous materials generated by the operation. An estimate of the reclamation bond amount is included in the proposed PoO (0877887 BC Ltd., 2012).

## BISHOP MILL PROJECT

**Area of Disturbance**

Reclamation of disturbed areas resulting from activities outlined below would be completed in accordance with federal and state regulations. Predicted project disturbance areas are summarized in Table 1. Areas proposed for disturbance can be divided into the following: roads, stockpiles, structures, yards and tailings.

**Table 1**

## Project Area Disturbance Estimates for Reclamation

| Facility     | Existing (acres) | Proposed (acres) | Total (acres) |
|--------------|------------------|------------------|---------------|
| Roads        | 1.29             | 0.09             | 1.38          |
| Stockpile    | 0.00             | 0.43             | 0.43          |
| Structures   | 0.29             | 0.01             | 0.30          |
| Yards*       | 6.69             | -1.17            | 5.52          |
| Tailings     | 0.81             | 0.66             | 1.47          |
| <b>Total</b> | <b>9.08</b>      | <b>0.02</b>      | <b>9.10</b>   |

Source: Table 3-4 of the proposed Plan of Operations and Reclamation Plan (0877887 BC Ltd., 2012).

Notes: \* Includes the area for the 2006 waste material that was relocated and covered in 2006. The cover material stockpile would be placed on land previously disturbed under the "yards" category. A portion of the "yards" area was converted to "tailings", hence the reduction of "yards" disturbance.

**Schedule**

The proposed project would operate for up to five years of active milling. One year beyond that date may be anticipated for the completion of closure activities and final reclamation. Groundwater monitoring would continue until there is no longer a threat to water quality. This schedule may be modified based on the rate of milling and future commodities prices. Concurrent reclamation would be ongoing over the operational life of the mill in areas that have reached final reclamation configurations. The estimated time to complete reclamation assumes average precipitation occurs during the years following reseeding, noting that periods of drought could delay revegetation. Reclamation activities (i.e., regrading, slope stabilization and revegetation) are expected to be completed within about one year.

**Growth Media**

Where possible, growth media would be salvaged prior to construction of any mill component. Growth media would be recovered, targeting minimum reclamation cover volumes for nearby components. Growth media would be hauled or otherwise placed to facilitate preservation through milling activities (e.g. stockpiles) and stockpiles would be strategically located to reduce reclamation costs associated with reuse. Growth media would be adequately identified with

signage. Since all proposed activities are taking place on previously disturbed areas, it is anticipated that minimal growth media would be available for salvage. If the volume of salvaged growth media is unable to satisfy reclamation activities, the BLM would require that growth media be imported from a BLM approved source to meet reclamation goals.

### ***Revegetation, Seeding and Planting***

Reclaimed surfaces would be revegetated to control runoff, reduce erosion, provide forage for wildlife and livestock, and reduce visual impacts. Seed would be applied with either a rangeland drill or with a mechanical broadcaster and harrow, depending upon accessibility. Seedbed preparation and seeding would take place in the fall after grading and top soiling (if necessary) of reclaimed areas. A final reclamation seed mix would be developed in coordination with, and approved by, the BLM.

### ***Post-Milling Contours and Topography***

The final grading plan for the proposed project is designed, in part, to minimize the visual impacts of the disturbance proposed by the applicant. Slopes would be re-graded with mobile equipment (examples include, dozers, trucks, loaders and scrapers) to blend with surrounding topography, interrupt straight line features and facilitate revegetation, where practical.

### ***Final Slope Gradient and Stability Criteria***

Soils salvaged from project components, as well as some of the near-surface alluvial material, may be used as soil cover materials during reclamation. Recent similar experience indicates that the use of erosion control best management practices (BMPs) during reclamation activities can greatly reduce sediment migration until vegetation can be established. The applicant would maintain BMPs at the base and (where applicable) diversion at the head of reclaimed slopes having excessive erosion until vegetation has established. Re-graded slopes would include slight breaks in slopes to reduce overall slope lengths to reduce surface water flow velocities and erosion.

### ***WMU Reclamation***

If stockpiled ore remains unprocessed after operations have terminated, the residual ore material would either be sold and transported off-site or would be disposed of in the WMU prior to construction of final cover. Prior to closure, the BLM requires that the contents of the WMU be non-hazardous or treated to appropriate levels and that sampling and testing occur to confirm the status of the contents. The liner of the WMU would remain in place for reclamation and permanent closure of the project.

In accordance with 27 C.C.R. § 22510(l) Tailings Pond Closure, a 24-inch foundation layer of cover material would be placed on the tailings and overlain by a 60-mil Linear Low Density Polyethylene (LLDPE) membrane to create an impermeable layer over the tailings. An 8-ounce geotextile material would be placed over the entire surface, covered with a minimum of 18 inches of growth media, and the surface would be re-graded to drain water away from the center of the WMU at a nominal 5 percent grade. The surface would be seeded with a BLM approved reclamation seed mix. Soils salvaged from stockpiled excess soils from tailings impoundment

## BISHOP MILL PROJECT

construction and the near-surface alluvial material may be used as soil cover materials during reclamation.

***Road Reclamation***

Roads without a defined post-milling use would be reclaimed concurrently as they are no longer needed for access. Where the original topography exceeds 3H:1V, the cross-section would be blended to ensure no steeper than 2.5H:1V slopes. Roads and safety berms would be re-contoured or re-graded to approximate the original contour using excavators or dozers as appropriate. Some access roads will be needed to access monitoring points. As monitoring is completed and the project is closed, these access roads would be reclaimed. Upon completion of re-contouring the surface would be seeded with a BLM approved reclamation seed mix.

***Disposition of Structures and Ancillary Facilities***

The reclamation cost estimate includes costs associated with the demolition and disposal of all structures and ancillary facilities to establish a land use similar to adjacent undisturbed lands. Structures and facilities associated with the project would be removed from the project area during the salvage and site demolition phase. Those building materials that are suitable for salvage, and meet the solid waste disposal criteria, would be disposed of in a Class III landfill located in Bishop. Concrete foundations and stem walls would be demolished to natural grade, broken up to allow drainage through slab foundations and buried in place. Fill would be used to fill subgrade portions of the foundations.

Prior to demolition, mill processing components would be rinsed with fresh water to remove any residual ore and reagents. The rinse water would be directed to the WMU and allowed to evaporate. All reagents, chemicals and other hazardous or toxic chemicals would be removed from the project area. Above surface pipelines would be removed. Underground pipelines would be capped and left in place. Power poles would be cut off at ground level and removed. Perimeter fences would also be removed.

Existing roads on public lands suitable for public access, or which continue to provide public access consistent with pre-milling conditions, would not be reclaimed at mill closure at the discretion of the BLM. Narrower access roads may remain on large haul roads after they have been re-contoured.

***Post-Reclamation Monitoring and Maintenance***

Following mill closure, berm and sign maintenance, site inspections, and any other necessary monitoring for the period of reclamation responsibility would be conducted.

Monitoring of revegetation efforts would be conducted annually until revegetation standards have been met and would include noxious weed monitoring and abatement as necessary. Revegetation monitoring would occur based on seasonal growth patterns, precipitation, and weather conditions. Revegetation monitoring would be conducted for a minimum of three (3) years following implementation of revegetation activities or until revegetation success has been achieved. Noxious weed monitoring and control would also be implemented for a three-year (3) period.

## BISHOP MILL PROJECT

Post-milling groundwater quality would be monitored according to the requirements established by the LRWQCB with the goal of ensuring the project does not adversely affect water quality. Monitoring would occur as specified in the Monitoring and Reporting Program outlined in Board Order No. R6V-2011-0048 (CRWQCB, 2011b) with reports submitted quarterly and annually to the LRWQCB. Water quality monitoring would be implemented throughout operations (five years) and for up to 30 years post closure.

***Well Abandonment***

Monitoring wells would be maintained until there is no longer a threat to water quality and the LRWQCB releases the applicant of this requirement. These wells would then be capped and abandoned according to the requirements of the BLM and/or Inyo County.

***Measures for Extended Periods of Non-Operation***

The applicant does not anticipate planned non-operation of the mill. However, in the event that continuous, full-scale production is interrupted due to economic considerations or unforeseen circumstances, interim maintenance and/or reclamation may be initiated. Potential interim maintenance and reclamation is outlined below:

- Power Lines - The power line would be inspected regularly and maintained as necessary.
- Roads - The main access road would be maintained as necessary.
- Erosion and Sediment Control Measures - Erosion control measures and BMPs would be regularly inspected and maintained, including the ore patio and WMU.
- Structures - All building, equipment, fences, and support facilities would be protected from public access and maintained as necessary.
- Equipment - Mobile equipment not needed elsewhere would be stored on-site for occasional use for maintenance of facilities (e.g., erosion control, road maintenance, etc.).
- Monitoring - Continued monitoring, notifications, and report submittals would occur during periods of non-operation. This includes site monitoring and monitoring of leak detection systems.

The applicant would be required to notify the BLM and the LRWQCB in writing within 90 days of any project suspension that is anticipated to last longer than 120 days. The applicant would be required to identify the nature and reason for the suspension, the anticipated duration of the suspension, and the events expected to result in either the resumption of mill operations or the permanent closure and reclamation of the mill.

**2.3 LIMITED OPERATING PERIOD ALTERNATIVE**

Project design and implementation including all facilities, operations, project implementation specifications, and reclamation activities for the Limited Operating Period alternative would be the same as described for the proposed action with the exception of operating hours. This

## BISHOP MILL PROJECT

alternative would limit mill operations to daylight periods only. For summer time operations, operations would occur between the hours of approximately 6:00 AM and 8:00 PM. In the winter, the hours of operation would be further limited due to shortened daylight hours (approximately 7:00 AM to 5:00 PM). Night time operation of the mill (between sunset and sunrise) would not be authorized.

## **2.4 RECLAMATION ONLY ALTERNATIVE**

The BLM National Environmental Policy Act (NEPA) Handbook (H-1790-1) states that for EAs on externally initiated proposed actions, the No Action alternative is generally to reject the proposed action or deny the application. The Reclamation Only alternative for the Bishop Mill project would deny re-activation of the Bishop Mill and functionally serves as the No Action alternative in this EA. However, true “no action” is not considered a reasonable alternative for the Bishop Mill.

Under this alternative, the Bishop Mill would be closed to future milling operations and reclamation would be implemented as outlined in Section 4 of the proposed Plan of Operations and Reclamation Plan (PoO). Existing facilities, including all structures, equipment and materials would be removed as outlined in the PoO. The site would also be re-contoured and revegetated as outlined in the PoO. As with the other alternatives considered, the BLM would not authorize the permanent storage of any hazardous materials on-site under the Reclamation Only alternative. Reclamation of the site would require the neutralization or removal of any Group A or B mining wastes on-site.

---

## **3.0      **AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES****

---

This section describes the affected environment and environmental consequences that could result from implementation of the proposed action and alternatives described in Section 2. Aspects of the affected environment described in this section focus on relevant resources as determined by the context, duration and intensity of potential effects and by the issues identified during internal and external scoping. Certain environmental components require analysis under BLM policy. Only those aspects of the affected environment that are potentially affected by the proposed action and alternatives are described in detail.

### **3.1 AIR QUALITY**

#### **3.1.1 Affected Environment**

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including seven nationally regulated ambient air pollutants. Regulation of air quality is also delegated to some states. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management and visibility.

The Bishop Mill is located within an air basin under jurisdiction the State of California's Great Basin Unified Air Pollution Control District (GBUAPCD). To ensure conformance with federal, state and local air quality regulations, the applicant must apply for, and receive, an Authority to Construct (ATC) permit from the GBUAPCD. A previous permit (ATC 1410 00 07) was issued for the Bishop Mill in 2008. An updated permit based on the proposed Plan of Operations and Reclamation Plan (PoO) must be received by the applicant prior to any BLM authorization for operation of the mill. To mitigate potential risks from hazardous airborne pollutants associated with mill operations, the BLM will incorporate terms and conditions prescribed by the GBUAPCD in an approved ATC permit into any BLM authorization for operation of the Bishop Mill.

The proposed project site is not within a federal non-attainment/maintenance area under jurisdiction of the GBUAPCD. Federal actions are not subject to conformity determinations pursuant to 40 § CFR 93.

#### **3.1.2 Direct and Indirect Effects**

##### ***Proposed Action***

The purpose of the Unified Great Basin Air Pollution Control District (GBUAPCD) is to enforce federal, state and local air quality regulations and to ensure that federal and state air quality standards are met. These standards are set to protect the health of sensitive individuals by restricting how much pollution is allowed in the air. To meet these standards, the GBUAPCD enforces delegated federal laws, state laws on stationary (as opposed to mobile) sources of

## BISHOP MILL PROJECT

pollution, and establish and enforce local regulations as they become necessary. The GBUAPCD does not generally regulate mobile air pollution sources (cars and trucks), which is the responsibility of the California Air Resources Board (CARB).

Although no specific air quality plans are applicable to the proposed project area, the GBUAPCD requires compliance with state and federal air quality standards. The applicant must obtain permits for ore processing and land disturbance with the GBUAPCD prior to commencing operations. Compliance with permit conditions would assure the proposed project does not degrade air quality. Because no applicable air quality plan exists, the proposed project would have no impact on such a plan.

Project construction and operation would not cause violations of any air quality standard or contribute substantially to an existing or projected air quality violation. Based on URBEMIS emissions reports prepared for the Lahontan Regional Water Quality Control Board (LRWQCB) as part of their initial study (CRWQCB, 2011d, Appendix E), the proposed project would not result in appreciable permanent reductions in air quality.

Owens Lake and Mono Lake particulate sources within the GBUAPCD violate the Federal PM10 standard, but these sources are over 60 miles from the project area. Although the GBUAPCD reports no existing air quality violations for the project site and surrounding vicinity, the proposed project includes air pollution control measures and practices designed to avoid and minimize air emissions that could contribute to air quality violations. The proposed project includes dust control measures for disturbed areas. Fugitive dust emissions in the processing area would be controlled at the crusher and conveyor drop points using water sprays and/or negative air pressure dust collection where necessary. Pollution control equipment would be installed, operated and maintained for optimal performance of components. For ongoing fugitive dust control, the applicant or its contractor would water haul roads, complete moisture conditioning of borrow material to be used for fill and maintain in-place fill materials.

Project effects were modeled over a three-month period during the summer and early fall to estimate the URBEMIS summer and combined annual emissions for construction and operations (CRWQCB, 2011d, Appendix E). Unmitigated PM10 emissions could total 46 pounds/day during construction, but are reduced to 3.5 pound/day through implementation of soil stabilization and dust control measures. Unmitigated PM10 emissions could total 0.31 pounds/day during demolition and reclamation, but are reduced to 0.05 pound/day through implementation of soil stabilization and dust control measures.

Project facilities would be powered by existing overhead power lines on the east side of the project area that are owned by Southern California Edison. The proposed project would draw an estimated 937,320 kWh per year. The project does not propose back up power from fuel run generators. Over-the-highway haul trucks would deliver up to 75 tons of ore per day to the project area over a 5-year time span. Four (4) haul trucks and seven (7) worker trips per day trips were used to model maximum operational emissions. Operational emissions could contribute 0.8 pounds/day of PM10.

## BISHOP MILL PROJECT

Given the relatively small contributions towards PM10 emissions, the proposed project would not contribute substantially towards non-attainment of PM10 standards during the construction, operation, or demolition and reclamation phases.

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is subject to non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). Although there are portions of Inyo County within non-attainment areas for federal and state PM10 (particulate matter 10 microns or less in diameter) ambient air quality standards, the primary source for this pollution is the Owens dry lake, located more than 80 miles from the project site. As a result of proposed dust control measures, the proposed project would not measureable increase PM10 pollutants over existing levels.

Project milling operations would be performed within buildings and using processing equipment that minimize the creation of air borne pollutants. Should airborne pollutants be released during operations, the prevailing wind direction at the project site is to the north, where no sensitive receptors (e.g., a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant than is the population at large) are located within 1 mile of the project area. The nearest residential development is approximately one mile east of U.S. Highway 6 on Rudolph Road, which is approximately two miles east of the project area.

The proposed project would not create objectionable odors that could adversely affect nearby residential areas because most mill operations would occur within buildings and by processing equipment designed to contain and/or neutralize objectionable odors.

***Limited Operating Period Alternative***

Effects under the Limited Operating Period alternative would be similar to the proposed action, and would not exceed the air emissions estimated for the proposed action. Because operations would be limited to daylight hours only, this alternative would result in fewer vehicle trips and operations emissions and less electricity consumption. Compliance with GBUAPCD permit requirements and implementation of soil stabilization and dust control measures would limit air pollutant emissions and air emissions standards would not be exceeded. The Limited Operating Period alternative would not create objectionable odors that could affect nearby residential developments and appropriate protective equipment would be provided to employees at the site.

***Reclamation Only Alternative***

The Reclamation Only alternative would deny re-activation of the Bishop Mill and require immediate reclamation of the project area. No processing operations would occur, existing structures and facilities would be removed, and existing disturbed areas would be re-contoured and re-vegetated. On-site air emissions would be limited to those generated during temporary reclamation activities. As discussed for the proposed action, dust control and soil stabilization measures would be implemented to limit emissions and no air emissions standards would be exceeded. The Reclamation Only alternative would not result in the generation or release of objectionable odors.

## **3.2 AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)**

### **3.2.1 Affected Environment**

The proposed project is not located within or adjacent to any designated Area of Critical Environmental Concern (ACEC). The nearest ACEC is Fish Slough, located approximately 2 miles west of the project area.

### **3.2.2 Direct and Indirect Effects**

#### ***Proposed Action and Alternatives***

The proposed action and alternatives would have no effect on any designated Area of Critical Environmental Concern (ACEC) because the proposed project is not located within or adjacent to any designated ACEC. None of the concurrent analyses conducted in this EA identify the potential for measureable indirect effects to the Fish Slough ACEC under any of the alternatives considered.

## **3.3 CULTURAL RESOURCES**

### **3.3.1 Affected Environment**

A complete pedestrian cultural resource survey of the proposed project site was completed which covered the entire Area of Potential Effects (APE) in March 2011 (USDI, 2011a). Surveys identified no sites that are potentially eligible for the National Register of Historic Places and identified no unevaluated cultural resources. The cultural resource inventory report (CA170-11-30) submitted to the regional Information Center contains the negative survey results.

### **3.3.2 Direct and Indirect Effects**

#### ***Proposed Action and Alternatives***

The proposed action and alternatives would have no adverse effect on any known cultural resources because no pre-historic or historic cultural resources have been identified within the APE. During construction and reclamation, it is possible for unknown cultural resources to be unearthed. However, the proposed project is not expected to adversely affect previously unidentified cultural resources because the likelihood of encountering such resources is considered low and adequate measures would be in place to minimize potential adverse effects.

## **3.4 ENVIRONMENTAL JUSTICE**

### **3.4.1 Affected Environment**

Executive Order 12898 requires federal agencies to assess proposed projects to ensure there are no disproportionately high or adverse environmental, health or safety effects on minority and low-income populations. While minorities and low-income households are represented in both Inyo and Mono counties, no minority or low-income populations are dependent upon the project area for their well-being or livelihood, nor are they likely to be affected by the proposed project.

### **3.4.2 Direct and Indirect Effects**

#### ***Proposed Action and Alternatives***

The proposed action and alternatives would not result in disproportionately high or adverse environmental, health, or safety effects on any minority or low-income populations. None of the alternatives would displace any existing household or population, nor result in the construction of new or replacement housing. In addition, none of the alternatives would require additional public services and thus would have no impact on acceptable service ratios, response times, or other public services performance objectives. None of the alternatives would create adverse environmental, health, or safety effects on minority or low-income populations of any kind. There would not be a disproportionate impact, either negative or positive, to any minority or low-income population under any of the alternatives.

## **3.5 ESSENTIAL FISH HABITAT**

### **3.5.1 Affected Environment**

The proposed project site is not located within or adjacent to any designated essential (anadromous) fish habitat.

### **3.5.2 Direct and Indirect Effects**

#### ***Proposed Action and Alternatives***

The proposed action and alternatives would have no effect on any designated essential (anadromous) fish habitat because the proposed project site is not located within or adjacent to any designated essential fish habitat.

## **3.6 FARMLANDS (PRIME OR UNIQUE)**

### **3.6.1 Affected Environment**

The proposed project site is not located within or adjacent to any prime or unique farmlands.

### **3.6.2 Direct and Indirect Effects - Proposed Action and Alternatives**

#### ***Proposed Action and Alternatives***

The proposed action and alternatives would have no effect on any prime or unique farmlands because the proposed project site is not located within or adjacent to any prime or unique farmlands.

## 3.7 FLOODPLAINS

### 3.7.1 Affected Environment

The proposed project site is not located within or adjacent to any delineated floodplain or flood hazard zone. The proposed project site is located just upslope of a dry wash subject to intermittent localized flooding during high intensity, short duration rain events (primarily summer thunderstorms).

### 3.7.2 Direct and Indirect Effects

#### *Proposed Action*

The proposed project would result in the construction of a new Group A WMU that would impound up to 32,000 tons of tailings. The proposed project has been designed to operate as a zero-discharge facility and no release from the WMU is anticipated. The WMU design includes 3 feet of freeboard (vertical distance from the lowest point of a berm to the water surface in a pond) at the maximum tailings and water storage level. Maintaining adequate freeboard during operations would reduce the possibility of over topping of the WMU during any short duration rain events. Quarterly monitoring for the LRWQCB requires the freeboard to be recorded on a weekly basis.

Localized flooding could result from liner failure combined with slope failure, or from a high intensity, short duration rain event. The WMU design incorporates the results of a slope stability analysis (0877887 BC Ltd, 2010, Appendix B) to maximize the safety factor built into the project. The WMU liner would be visually inspected on a weekly basis for indication of excessive wear, wrinkles, rips or tears. Observed breaches in liner integrity would be repaired as soon as possible and if necessary, processing operations would be suspended to accommodate liner repair. Wear sheets comprised of 80-mil liner scraps or other approved materials would be placed below potential tailings discharge points and anchored either by welding to the primary liner or by constructing a new dedicated anchor trench outside the primary anchor trench. Wear sheets would be inspected weekly during the inspections of the WMU liner and replaced as often as required to protect the primary liner from damage. The proposed design and committed practices reduce the risk of flooding as a result of WMU failure or WMU over topping as a result of short duration rain events.

#### *Limited Operating Period Alternative*

Effects under the Limited Operating Period alternative would be identical to the proposed action.

#### *Reclamation Only Alternative*

The Reclamation Only alternative would deny future mill operations and require immediate reclamation in an area that contains no delineated flood hazards. Reclamation of the project site would reduce the potential for on-site or localized flooding during high intensity, short duration rain events.

## 3.8 GLOBAL CLIMATE CHANGE

### 3.8.1 Affected Environment

Global climate change is caused in large part by anthropogenic (human caused) emissions of GHGs released into the atmosphere through the combustion of fossil fuels and by other activities that affect the global GHG budget, such as deforestation and land use change. According to the California Energy Commission (CEC), GHG emissions in California are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors as well as natural processes (California Energy Commission, 2006a).

Carbon Dioxide (CO<sub>2</sub>) is the primary GHG attributed to operation of the Bishop Mill. CO<sub>2</sub> accounts for more than 75% of anthropogenic GHG emissions. Increasing concentrations of CO<sub>2</sub> in the atmosphere are largely due to emissions from the burning of fossil fuels, gas flaring, cement production, and land use changes such as vegetation removal and large-scale agriculture.

The project area includes three existing buildings: the mill, warehouse/office and a garage. Existing GHG emissions from these facilities are primarily generated by natural gas and electricity usage. Water pumping and usage also generate small amounts of GHG emissions. In addition, fuel usage from vehicles and haul trucks traveling to and from the mill represent an additional source of GHG emissions.

In order to simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method to compare GHG emissions is the “global warming potential” (GWP) methodology defined in the Intergovernmental Panel on Climate Change (IPCC) reference documents (IPCC, 1996 and IPCC, 2001). The IPCC defines the GWP of various GHG emissions in terms of CO<sub>2</sub> equivalents (CO<sub>2</sub>e), which compares the GHG in question to that of the same mass of CO<sub>2</sub> (by definition, CO<sub>2</sub> has a GWP of 1.0).

The California Air Resources Board (ARB) completed a GHG inventory of California’s 2006 GHG emissions. Their report states that 1990 emissions amounted to 433.3 million metric tons (MMT) of CO<sub>2</sub>e, while 2006 emissions levels rose to 483.9 MMT of CO<sub>2</sub>e (California Air Resources Board 2009a). Based on California’s 2006 population of 37,114,598, this amounts to approximately 13 metric tons of CO<sub>2</sub>e per person (State of California, Department of Finance 2008).

### 3.8.2 Direct and Indirect Effects

#### *Proposed Action*

The proposed action would contribute to greenhouse gas emissions because the proposed project includes the use of natural gas, electricity and fuel for vehicles and haul trucks.

During the construction phases of the project, greenhouse gas emissions would occur on a temporary and intermittent basis from the use of construction equipment, which is estimated at 5,860 pounds/day of CO<sub>2</sub> during the construction period and 803 pounds/day of CO<sub>2</sub> during the demolition and reclamation period.

## BISHOP MILL PROJECT

During operations, greenhouse gas emissions would occur from the use of natural gas and electricity and from the use of vehicles and haul trucks accessing the project site. Limited emissions are anticipated from vehicles of workers commuting to and from the project site for operations and maintenance. Limited emissions would also result from over-the-highway haul trucks delivering ore to the project site. URBEMIS model results estimate that 138 metric tons of unmitigated CO<sub>2</sub> emissions from energy use for ore processing, over the highway haul trucks, and worker vehicles would be produced annually. In comparison with CARB estimates for annual CO<sub>2</sub> emissions, the maximum estimate of greenhouse gas emission that would result from long-term project operations is nominal. In addition, estimated Bishop Mill GHG emissions are minuscule in comparison to current and estimated future global GHG emissions. Attributing any potential for climate change to Bishop Mill emissions is not supported by the currently available data.

The proposed project would not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions because such plans specific to the project area and immediate vicinity do not exist.

### ***Limited Operating Period Alternative***

Effects under the Limited Operating Period alternative would be similar to the proposed action; however, effects would be less than the proposed action since operations would be limited to daylight periods. This alternative would result in fewer emissions from worker vehicle trips and haul truck trips than those estimated for the project under the URBEMIS model and under CARB estimates. No operations would occur between 8:00 PM and 6:00 AM during the summer months or between 5:00 PM and 8:00 AM during the winter months, resulting in a nominal contribution to statewide greenhouse gas emissions.

### ***Reclamation Only Alternative***

The Reclamation Only alternative would not contribute to long-term greenhouse gas emissions because the mill would be closed, operations would not occur, and the site would be reclaimed. Indirectly, during demolition and reclamation of the site, greenhouse gas emissions would occur on a temporary and intermittent basis from the use of construction equipment, which is estimated at 803 pounds/day of CO<sub>2</sub>.

## **3.9 INVASIVE, NON-NATIVE SPECIES**

### **3.9.1 Affected Environment**

Currently, there are no known state or county listed noxious weeds within the project area; however, salt cedar (*Tamarix ramosissima*) and Russian thistle (*Salsola tragus*) both occur within the project area. The California Invasive Plant Council (Cal-IPC) has assigned salt cedar an overall rating of “High” and Russian thistle an overall rating of “Limited.” A rating of “High” means that: “These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.” A rating of “Limited” means that: “These species are invasive

## BISHOP MILL PROJECT

but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic” (Cal-IPC, 2012). The distribution and abundance of salt cedar is limited within the project area while Russian thistle is more common and abundant.

### 3.9.2 Direct and Indirect Effects

#### *Proposed Action*

Adverse effects to native plant species and populations may occur as a result of introduction of invasive non-native or noxious weed species. Non-native, noxious weeds increase competition for resources and result in an overall decrease in the health of native plant populations. It is expected that the disturbance associated with the proposed action may cause a slight increase in both the abundance and distribution of Russian thistle. No increase in salt cedar is expected. An increase in Russian thistle may negatively impact native plant populations within and adjacent to the project area by outcompeting native species for available resources such as water, soil nutrients and available space. These potential impacts are expected to be minimized by project design features and post project reclamation.

For actions on public lands that involve surface disturbance or rehabilitation, reasonable steps are required to prevent the introduction or spread of invasive non-noxious weeds. This includes power washing or air blasting of construction equipment to remove seed bearing soil and vegetative parts, and using certified weed-free seed and weed-free hay, mulch and straw during reclamation. In addition, actions that result in the introduction or spread of invasive non-native or noxious weeds are mitigated by standard weed management guidelines under the direction of the BLM. The proposed project includes a requirement for noxious weed monitoring and control for a three-year period following site reclamation.

#### *Limited Operating Period Alternative*

Effects under the Limited Operating Period alternative would be identical to the proposed action.

#### *Reclamation Only Alternative*

The Reclamation Only alternative would likely result in a gradual and/or fluctuating increase (weather dependent) of Russian thistle until reclamation of the site is completed. Reclamation of the site would include measures to avoid the introduction and spread of noxious weeds. Reclamation efforts designed to reduce the distribution and abundance of invasive non-native noxious weeds in the project area would occur approximately five (5) years sooner under this alternative than under the Proposed Action and Limited Operating Period alternatives.

## 3.10 NATIVE AMERICAN CULTURAL VALUES

### 3.10.1 Affected Environment

There are 11 Native American communities within, or in close proximity to, the eastern Sierra region administered by the Bishop Field Office. None of these communities are living on, or adjacent to, the proposed project area. No treaty rights (hunting, fishing, etc.) are associated with any of these communities or with the proposed project area.

Some members of these communities hunt and some do subsistence collecting of materials such as basket weaving materials and medicinal plants on public lands. However, this is general use and no specific “traditional use areas” have been identified by any of the tribes at this time. Any other traditional uses or use areas have not been divulged to this office. The proposed project area has not been identified as a Native American religious or sacred site.

### 3.10.2 Direct and Indirect Effects

#### *Proposed Action and Alternatives*

The proposed action and alternatives would have no effect on Native American cultural values or religious concerns because there would be no measureable change in the condition of the natural environment upon which Native American cultural values depend and the proposed project area is not identified as a Native American religious or sacred site.

## 3.11 NOISE

### 3.11.1 Affected Environment

Noise sources can be grouped into two categories: mobile and stationary. Mobile sources are noise producers that move within and adjacent to the proposed project site. In Inyo County, these include vehicle traffic on highways and roads, aircraft noise from military operations, noise from general and commercial aviation, and noise associated with transient land use activities. The primary mobile source in the project area is road noise associated with U.S. Highway 6. According to the Inyo County General Plan, primary stationary sources in Inyo County include mining, industrial, commercial, and utility land uses (Jones & Stokes 2001). Currently, there are no substantive stationary noise sources in the vicinity of the proposed project site.

The Inyo County Noise Standards identify noise levels up to 70 Ldn as normally acceptable and noise levels between 70 and 80 Ldn to be conditionally acceptable for mining, industrial, manufacturing, utilities and agriculture activities (Jones & Stokes 2001). Noise levels that exceed 80 Ldn are considered unacceptable for these activities.

### 3.11.2 Direct and Indirect Effects

#### *Proposed Action*

Project operations would generate periodic noise, but because of the distance of the mill site from the project area boundary, the proposed operations would not increase the ambient noise

## BISHOP MILL PROJECT

level (as measured at the greater 35-acre mill site claim site boundary) above the established Inyo County noise standards.

Construction equipment would create temporary and periodic vibration effects in the project area, but because of the distance to the nearest residential development, would not expose residents to excessive ground-borne vibration or noise. The proposed project does not include fulltime or backup generator power for operations, so no generator noise would be produced.

The proposed project would operate for a period of five (5) years and project operations would generate noise from ore processing equipment during this period. However, due to the topography and remote location of the project site ambient noise levels would not substantially increase, and would not exceed Inyo County standards as measured at the claim site boundary. Over-the-highway haul trucks would deliver ore to the project site daily; however, because of the low volume of daily trips (e.g., up to four deliveries per day), current or future noise levels from transportation sources would not exceed 65-dB Ldn, the level of significance stated in Inyo county Policy NOI-1.4.

Project construction noise would be intermittent, and the level would vary depending on the type, location, and length of the activity. Project construction would generate temporary and periodic noise, but ambient noise would not increase substantially as measured at the claim site boundary because of the topography and distance from the construction activity to the project area boundary. The nearest residential uses or other sensitive receptors are located approximately 2 miles from the project site.

#### ***Limited Operating Period Alternative***

Effects under the Limited Operating Period alternative would be similar to the proposed action, except that noise generation would cease during nighttime conditions, resulting in less overall noise generation than the proposed action. Daytime operational noise levels would be identical to the proposed action and would not result in adverse noise effects due to the topography and remote location of the project site. The minor increase in vehicle trips would not result in a substantial increase in noise. There would be no potential for adverse night-time noise effects under this alternative.

#### ***Reclamation Only Alternative***

Construction equipment would create temporary and periodic vibration effects in the project area during reclamation activities only, but because of the distance to the nearest residential development, would not expose residents to excessive ground-borne vibration or noise. Reclamation related construction noise would be intermittent, and the level would vary depending on the type, location, and length of the activity. Ambient noise would not increase substantially during reclamation activities as measured at the project area boundary because of the topography and distance from the project site. Noise impacts would occur only during the day and would be short-term and of limited duration under this alternative.

## **3.12 RANGELANDS AND PERMITTED LIVESTOCK GRAZING**

### **3.12.1 Affected Environment**

The proposed project area is located within the Chalk Bluff (6043) grazing allotment. The allotment has one permittee. The current permit authorizes cattle use of up to 555 Animal Unit Months (AUMs). The permitted grazing season is October 1 to May 15 annually. Cattle are currently excluded from the project area by an existing perimeter fence.

### **3.12.2 Direct and Indirect Effects**

#### ***Proposed Action and Alternatives***

The proposed action and alternatives would have no effect on rangelands or permitted grazing operations because none of the alternatives would result in any measureable change in overall range conditions or available forage on the Chalk Bluff allotment. In addition, none of the alternatives would result in any change in permitted Animal Unit Months (AUMs) on the allotment.

## **3.13 RECREATION**

### **3.13.1 Affected Environment**

The proposed project site is located in an area that experiences low density dispersed recreation use, primarily off-highway vehicle (OHV) recreation. There are no developed recreations sites within or near the project area. The project area is currently fenced to preclude public access and no recreation occurs on-site.

### **3.13.2 Direct and Indirect Effects**

#### ***Proposed Action***

The proposed project involves ore processing and installation of a Group A WMU for treatment of tailings. The proposed project does not involve actions that would change recreation use in the area or adversely affect existing recreational use or developed recreational facilities.

#### ***Limited Operating Period Alternative***

Effects under the Limited Operating Period alternative would be identical to the proposed action.

#### ***Reclamation Only Alternative***

The Reclamation Only alternative would deny future mill operations and require immediate reclamation in an area that contains no developed recreational facilities and currently receives no on-site recreation use. Post reclamation, the site would be open to dispersed recreation which would occur sooner under this alternative.

## 3.14 SOCIAL AND ECONOMIC VALUES

### 3.14.1 Affected Environment

Ranching, dispersed recreation, and municipal watershed protection are the primary land uses in the vicinity of the project site. In addition, residential development occurs approximately 2.0 miles east of the project site at Rudolph Ranch/White Mountain Estates, 4 miles southeast of the project site at Laws, and 4.5 miles north of the project site at Chalfant. There are no active mines in the project area. The nearest minerals extraction and processing operation is a sand and gravel plant located on City of Los Angeles Department of Water and Power (LADWP) lands approximately 3.5 miles southwest of the project site near the Owens River on Jean Blanc/Five Bridges Road.

### 3.14.2 Direct and Indirect Effects

#### *Proposed Action*

Because of current vacancy rates in the region, demand for new housing from reactivation of the mill would not result in housing shortages or increased rents. Mill operation would employ up to seven workers and housing is readily available in Bishop and other nearby communities.

Literature identifying the effects of industrial land uses on property values indicates that properties within a few kilometers of an undesirable land use often experience reduced property value due to the stigma associated with the industrial site. The reduction in value varies substantially among the studies examined, with more contaminated sites or more publicized sites generally reducing housing values more. Because the Bishop Mill is an established and non-hazardous industrial use site, and because it is located approximately 2 miles away from the nearest residential properties, operation of the re-activated mill is expected to have little effect on either the demand for, or the market values of, nearby residential properties.

#### *Limited Operating Period Alternative*

Effects under the Limited Operating Period alternative would be identical to the proposed action.

#### *Reclamation Only Alternative*

The Reclamation Only alternative would deny future mill operations and require immediate reclamation of the project area. No change in housing demand would occur as a result of closure and reclamation. Closure of the mill and reclamation of the site would not adversely affect existing residential properties or market values.

## 3.15 SOILS AND GEOLOGY

### 3.15.1 Affected Environment

The project area is located in the southern part of the Chalfant Valley, which joins the Owens Valley approximately five miles north of Bishop, California. Chalfant Valley is a narrow alluvial plain bounded on the east by the White Mountains and on the west by the Volcanic

## BISHOP MILL PROJECT

Tableland. The White Mountains are composed predominantly of granitic rocks partially overlain by metasedimentary and metavolcanic rocks. The Volcanic Tableland is comprised of pyroclastic deposits derived from the volcanic explosions in the Long Valley caldera. The White Mountains extend to more than 13,000 feet above mean sea level (msl), while the Volcanic Tableland rises to 6,000 feet above msl. Chalfant Valley extends north from its junction with the Owens Valley to a geomorphic intersection with the Millner Creek alluvial fan, approximately 4.5 miles north of Chalfant. The Millner Creek alluvial fan dissects the valley and marks the separation of Chalfant Valley from Hammill Valley to the north. Several faults run through the valley, including the Fish Slough fault approximately 2 miles west of the project area and the White Mountain range front fault approximately 2 miles east of the project area (0877887 BC Ltd., 2010).

Soils in the project area consist of the Yaney-Yaney loam association and the Cambidic Haplodurids-Type Haplodurids association. The Yaney-Yaney loam is described as well drained and containing sand, sandy loam and sandy loam with various amounts of gravel. The parent material is described as “Volcanic ash and/or alluvium derived from mixed sources.” The Cambidic soil is described as well drained and containing gravelly to extremely gravelly sandy loam with some cementation at 11 to 18 inches below ground surface (bgs). The parent material is described as “alluvium derived from mixed sources.” (NRCS, 1996 and NRCS , 2011).

### 3.15.2 Direct and Indirect Effects

#### *Proposed Action*

Impacts to soils under the proposed action would be minimal due to the extremely small amount of new disturbance. The project area currently has 9.08 acres of existing surface disturbance from previous milling activity. Implementation of the proposed action would result in an additional 0.02 acres of new surface disturbance in the project area. The anticipated 0.02 acres of new surface disturbance would occur along the edges of the existing tailings impoundment as a result of construction of the new waste management unit.

The proposed action includes best management practices (BMPs) for soil erosion and sediment control to be implemented during both the construction and operation phases. BMPs would be used to limit soil erosion and reduce sediment in precipitation runoff from project facilities and disturbed areas during construction, operations, and initial stages of reclamation. BMPs include, but are not limited to, diversion and routing of storm water using accepted engineering practices, such as diversion ditches, and the placement of erosion control devices such as sediment traps, and rock and gravel cover. Revegetation of disturbed areas would reduce the potential for wind and water erosion. Following construction activities, areas such as cut and fill embankments and growth media stockpiles would be seeded as soon as practical and safe. Concurrent reclamation would be maximized to the extent practical to accelerate revegetation of disturbed areas. Sediment and erosion control measures would be monitored as outlined in the WDRs issued by the LRWQCB and repairs performed as necessary (CRWQCB, 2011a).

The proposed action would have no effect on the areas geology because no mineral exploration or extraction is proposed within the project area.

## BISHOP MILL PROJECT

**Limited Operating Period Alternative**

Effects under the Limited Operating Period alternative would be identical to the proposed action.

**Reclamation Only Alternative**

The Reclamation Only alternative would result in closure of the mill and reclamation of the project area. Existing structures would be removed and the site re-contoured and revegetated. The Reclamation Only alternative includes no new structures or operations. Revegetation of disturbed areas would reduce the potential for wind and water erosion. Following structural removal activities, areas such as cut and fill embankments would be seeded as soon as practical and safe.

**3.16 VEGETATION - INCLUDING ENDANGERED, THREATENED AND SPECIAL STATUS (SENSITIVE) SPECIES****3.16.1 Affected Environment**

The proposed project site is located within Alkali Desert Scrub (Mayer and Laudenslayer, 1988) vegetation and contains shadescale (*Atriplex confertifolia*), black greasewood (*Sarcobatus vermiculatus*), four-wing saltbrush (*Atriplex canescens*), Fremont dalea (*Psoralea fremontii*), desert needle grass (*Achnatherum speciosum*) and Indian rice grass (*Achnatherum hymenoides*). Vegetative cover ranges from 5 to 15 percent. The majority of the project area has been previously disturbed. Existing disturbances include previous grading for construction of access roads and the tailings impoundment, the mill building and associated ancillary structures, and equipment storage. Previously disturbed portions of the project area have little or no perennial vegetation; annual species, including the non-native Russian thistle (*Salsola tragus*), are more abundant.

The BLM uses the term "Special Status Plants" to include:

- 1) Federal endangered, threatened, and proposed plants.
- 2) BLM designated sensitive plants. Species that are not federally listed as endangered or threatened or proposed for federal listing, but which are designated by the BLM State Director for special management consideration. By national policy, federal candidate species are treated as sensitive. The California State Director has also conferred sensitive status on California state listed endangered, threatened, and rare species, on species on List 1B (plants rare and endangered in California and elsewhere) of the California Native Plant Society's Inventory of Rare and Endangered Plants of California (unless specifically excluded by the State Director on a case-by-case basis), and on certain other plants the State Director believes meet the definition of sensitive.

There are no special status plant species known or likely to occur within the proposed project area based on habitat suitability, historical records, and recent field surveys. In addition, the proposed project area is not located within, or adjacent to, any designated critical habitat for any federally listed plant species.

### 3.16.2 Direct and Indirect Effects

#### *Proposed Action*

Potential effects to vegetation associated with the proposed action include crushing, up-rooting and loss of potential habitat within the project area. Due to the level of existing disturbance and low cover of vegetation within project area, direct effects from the proposed action are expected to be minimal. Although there would be some additional loss of potential habitat, the overall effect to vegetation is expected to be minimal due to the limited amount of additional disturbance that would occur (0.02 acres) and the relative abundance of alkali desert scrub on both the local and region-wide scales.

The proposed action would have no effect special status plant species, nor would it result in the destruction or adverse modification of any designated critical habitat for any such species.

#### *Limited Operating Period Alternative*

Effects under the Limited Operating Period alternative would be identical to the proposed action.

#### *Reclamation Only Alternative*

The Reclamation Only alternative would result in no additional vegetation disturbance within the project area and reclamation would occur up to 5 years sooner.

The Reclamation Only alternative would have no effect on special status plant species, nor would it result in the destruction or adverse modification of any designated critical habitat for any such species.

## 3.17 VISUAL RESOURCES

### 3.17.1 Affected Environment

The proposed project site is located within a Visual Resource Management (VRM) Class II area, as designated in the Bishop Resource Management Plan (USDI BLM, 1993). The VRM Class II objective states: "The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen from key observation points, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line color, and texture found in the predominant natural features of the characteristic landscape."

Existing mill facilities are part of the characteristic landscape and are shown in the photo on page 3-17. Existing facilities include the mill building (right), a warehouse/storage building (left), and the WMU (at the base of the mill building). Access to the mill is provided by an existing route that enters the project area from the north. As shown in the photo, the existing visual character and quality of the project area is that of an existing mill site under the backdrop of the Sierra Nevada and Volcanic Tableland to the west.

## BISHOP MILL PROJECT



*View of the Bishop Mill from Rudolph Road near U.S. Highway 6*

### **3.17.2 Direct and Indirect Effects**

#### ***Proposed Action***

There are no designated scenic vistas in the project area vicinity and therefore the proposed project would have no effect on any designated scenic vista. In addition, the proposed project site is not visible from any designated scenic highway and therefore the proposed project would have no effect on visual resources associated with any designated scenic highway.

The key observation point for the Bishop Mill is U.S. Highway 6, located approximately one mile to the east. The existing mill building was painted a light tan color during its initial construction to conform to the color of the surrounding landforms. The structures' angular design features repeat the basic elements of the asymmetrical landscape. Located at the toe of the slope, the mill tends to blend into the landscape as a seen from U.S. Highway 6. The expansion of the existing tailings impoundment to a Class A WMU would not measurably change the existing characteristic landscape because it would not increase the height or discernible footprint of the existing mill. Since the current project is part of the characteristic landscape, the proposed project conforms to the VRM standards prescribed by the Bishop RMP and would create no impact to exiting visual resource quality.

## BISHOP MILL PROJECT

The overall change in the project area configuration would be restricted to the expansion of the existing tailings impoundment to accommodate the Class A WMU and the addition of a 500 square foot concrete pad to the southwest side of the main mill building to house the Krupp Screen. These changes would not measurably change the existing visual character or quality of the site because the new facilities would not extend vertically above existing site features. The WMU would be constructed with the rim of the WMU at approximately 4260 feet above msl and the tailings impoundment liner installed at approximately 4235 feet above msl or 25 feet bgs. The WMU would be constructed at the current tailings impoundment location, increasing the depth of excavation by another 5 feet bgs and expanding the surface area from 150 feet by 190 feet to 185 feet to 240 feet. The WMU is sited such that the existing topography of project area shields views of the impoundment structure. In addition, the ore to be staged temporarily on the new concrete patio prior to processing would not be visible from outside of the project area because it would be screened by existing structures and would not contrast with adjacent soils and vegetation.

The proposed action would include periods of non-stop 24-hour per day operation, seven days per week, and require adequate exterior lighting to meet requirements for worker safety. The existing sources of exterior lighting would be used. If additional lighting becomes necessary for worker safety, lighting would be designed to minimize light and glare. To minimize impacts to night skies, any new outdoor light fixtures would use low-energy, shielded light fixtures which direct light downward (i.e. lighting shall not emit higher than horizontal level) and which are fully shielded. Though expected to be minimal, some additional impact to night-skies would occur under the proposed action.

#### ***Limited Operating Period Alternative***

Effects under the Limited Operating Period alternative would be identical to the proposed action, with the exception that night-sky effects associated with 24-hour operation would be eliminated. Operations would be limited to daytime hours, with nighttime milling prohibited. Exterior night lighting would remain at the existing level.

#### ***Reclamation Only Alternative***

The Reclamation Only alternative results in the closure of the mill and reclamation of the project site at least 5 years sooner than under the other alternatives. Existing structures would be removed, and the land re-contoured and revegetated as outlined in Chapter 2. Structural removal would improve views of distant mountain ranges. Revegetation would result in a landscape similar to surrounding undeveloped lands. Visual quality would be improved sooner under this alternative; however, the net change in visual quality would be the same.

### **3.18 WASTES, HAZARDOUS OR SOLID**

#### **3.18.1 Affected Environment**

Federal, state, and local regulations govern the use and storage of any hazardous fluids, fuels, gases, and mine tailings at the Bishop Mill. Mine tailings, fluids, fuels (e.g., diesel fuel), and gases (e.g., propane) associated with previous mill operations are currently stored at the Bishop

## BISHOP MILL PROJECT

Mill site. Table 3-1 from the Bishop Mill Report of Waste Discharge (0877887 BC Ltd., 2010) lists the reagents proposed for use at the Bishop Mill during operations. One of the reagents listed in the PoO, propane, is included in the U.S. Environmental Protection Agency's "List of Lists," a consolidated list of chemicals subject to the Emergency Planning and Community Right-To-Know Act, Comprehensive Environmental Response, Compensation and Liability Act and Section 112(r) of the Clean Air Act. Diesel fuel is also considered a hazardous material because it can explode or catch fire.

The Bishop Mill was originally constructed and operated by Mammoth Mountain Mining Company beginning in 1985. Approximately 6,000 cubic yards of tailings (currently known as the Mammoth Mine Tailings) were deposited in an unlined tailings pond at the site under previous operations. In 2005, these tailings were relocated to an area just south of the mill building. In June 2011, the LRWQCB issued an Investigative Order (No. R6V-2011-0044) to the BLM requesting a work plan for characterization of the relocated tailings (CRWQCB, 2011c). The results of the characterization program indicate that the old Mammoth Mine tailings are not hazardous waste according to California Department of Toxic Substances Control (DTSC) regulations (CCR, Title 22, Chapter 11, Article 3).

### 3.18.2 Direct and Indirect Effects

#### *Proposed Action*

Reagents required for ore processing would be transported to the project area. According to the proposed PoO, only two of the proposed reagents (diesel fuel and propane) are considered to be hazardous materials. Trucks for hire must meet the general requirements regarding the transportation of hazardous materials as governed by sections 31301-34510 of the California Vehicle Code. The proposed project does not involve the transportation of explosives, inhalation hazards or radioactive materials.

A majority of ore processing related reagents would be stored within the mill building. A portable, stand-mounted 1,000-gallon tank would be placed at the project area to contain diesel for use in equipment. The stand would be placed in an area with secondary containment (lined with plastic) to contain any leaks or spills. Table 3-1 from the Bishop Mill Report of Waste Discharge (0877887 BC Ltd., 2010) lists the reagents proposed for use at the Bishop Mill during operations. Chemicals not listed on this table would be removed from the project area prior to commencing operations.

The proposed project would produce concentrates that would be shipped off-site for further smelting and refining to metal. Refined metals would not be produced at the project site. Chemicals to be used for the flotation and concentrating of the ores consist of commonly used, industry standard biodegradable chemicals. Mercury and cyanide would not be used in the concentration process for any of the ores being considered.

Residual wastes (e.g., tailings) in the WMU would be analyzed for constituents of concern as laid out in the Monitoring and Reporting Program for the Waste Discharge Requirements (WDRs) issued by the LRWQCB. The method of disposal and the classification of the solids

## BISHOP MILL PROJECT

would be determined based on the laboratory analysis. Any hazardous materials would be disposed of off-site at an appropriate disposal facility in accordance with applicable regulations.

The proposed project site is not located on a known hazardous waste or substance site (CDTSC, 2011). In addition, the proposed project area is not identified on the State of California Cortese List, which is updated and submitted at least annually to the Secretary of Environmental Protection pursuant to section 65962.5 (<http://www.envirostor.dtsc.ca.gov/public/>).

The proposed project does not include any sanitary sewer or connections to an existing municipal wastewater treatment plant. Instead, the proposed project would include portable toilets on-site, approximately one for every five employees. The waste from each unit would be pumped and disposed by a local septic disposal contractor. The proposed project would comply with the wastewater treatment requirements specified in the WDRs issued by the LRWQCB.

The proposed project does not include a landfill for on-site solid waste disposal. Solid waste, not including processed ore, would be collected and transported to a permitted solid waste management facility for disposal, most likely one of the two Class III landfills in the project area vicinity. Solid waste would be transferred to the Inyo County Waste Management transfer station about 12 miles from the project site, or to the Chalfant transfer station about 5 miles north of the project site.

For project reclamation activities, buildings and facilities associated with the project would be removed from the site during the salvage and site demolition phase. Those building materials that are suitable for salvage, and meet the solid waste disposal criteria, would be disposed of at the Class III landfill located in Bishop. Concrete foundations and stem walls would be demolished to natural grade, broken up to allow drainage through slab foundations and buried in place. Fill would be used to fill subgrade portions of the foundations.

#### ***Limited Operating Period Alternative***

Effects under the Limited Operating Period alternative would be identical to the proposed action.

#### ***Reclamation Only Alternative***

Hazardous materials would not be stored, transported or used within the project area under the Reclamation Only alternative. Prior to demolition, the mill facility would be rinsed with fresh water to remove any residual ore and reagents. The rinse water would be allowed to evaporate. Reagents, chemicals and other hazardous or toxic chemicals would be removed from the site. Above surface pipelines would be removed and underground pipelines would be capped and left in place. Power poles would be cut off at ground level and removed. Perimeter fences would also be removed. During reclamation activities, building materials that are suitable for salvage, and meet the solid waste disposal criteria, would be disposed of in the Class III landfill located in Bishop. Concrete foundations and stem walls would be demolished to natural grade, broken up to allow drainage through slab foundations and buried in place. Fill would be used to fill subgrade portions of the foundations. Reclamation would be completed sooner under this alternative than under the other alternatives.

## 3.19 WATER QUALITY AND HYDROLOGY, SURFACE AND GROUND

### 3.19.1 Affected Environment

The proposed project is located in the northern region of the Owens Valley Groundwater Basin. This groundwater basin encompasses an area of approximately 1,030 square miles and is drained by the Owens River. The basin is bounded on the east by the White Mountains and on the west by the Sierra Nevada. Recharge to the basin is derived from snowmelt and precipitation runoff from the adjacent highlands and from direct precipitation onto the valley floor. Groundwater in the Chalfant Valley region generally occurs in unconsolidated to semi-consolidated alluvial deposits and flows towards the axis of the valley. The depth to static groundwater beneath the proposed WMU is approximately 40 feet bgs (SRK, 2010).

The capacity of the most limiting layer of each identified soil association to transmit water under saturated conditions (Ksat) ranges from 0.20 to 6.0 inches per hour. Hydraulic conductivities for soil and bedrock underlying the project area are unknown. Groundwater recharge is primarily derived from snowmelt and precipitation runoff from the adjacent highlands, and from direct precipitation onto the valley floor. The groundwater flow direction within alluvial deposits in the project area vicinity generally follows the axis of the topography southeast toward the axis of the valley and Bishop (SRK, 2010).

Hydrogeologic investigations completed for the project area during August through October 2010 indicate that the aquifer beneath the WMU flows from 87 degrees west to east, towards the valley floor at an average gradient of 0.013 feet/foot, from an elevation of 4,211.9 feet msl to 4,207.2 feet msl. Average hydraulic conductivity is approximately 0.40 feet/day (SRK, 2010). Background groundwater quality generally meets EPA and California drinking water MCL to comply with Title 27, section 20414(e)(6). However, analytical results indicate exceedances of the drinking water MCL for Aluminum, Arsenic and Lead in the up-gradient monitoring well (SRK, 2010).

There is no perennial surface water in the project area or within a one-mile radius. The nearest perennial source of surface water is Fish Slough, located approximately 2 miles to the west. The north fork of the man-made Upper McNally Canal (operated by the Los Angeles Department of Water and Power), which is often dry, crosses the southeastern corner of the project area approximately 2,000 feet south of the proposed WMU.

Existing groundwater wells supply water from the Owens Valley Groundwater Basin to the Bishop Mill and existing residential developments at Rudolf Ranch/White Mountain Estates, Laws, and Chalfant. Approximately 11 wells are monitored by the BLM and Los Angeles Department of Water and Power (LADWP) on a quarterly basis to measure aquifer levels.

### 3.19.2 Direct and Indirect Effects

#### *Proposed Action*

The proposed project would include the replacement of the existing tailings impoundment with a new WMU for purposes of compliance with federal and state water quality standards and the

## BISHOP MILL PROJECT

Waste Discharge Requirements (WDRs) issued by the Lahontan Region of the California Regional Water Quality Control Board (LRWQCB) in Board Order Number R6V-2011-0048 (CRWQCB, 2011a). The new WMU would include a leachate collection and recovery system (LCRS) between the primary and secondary liners, designed in accordance with California Title 27 CCR for a Group A WMU as presented in Section 5.1 of the Report of Waste Discharge (0877887 BC Ltd., 2010). Reactivation of the Bishop Mill would include the use of up to 96,000 gallons of water per day at maximum operational capacity. However, approximately 90 percent of the operational water would be recycled from the thickener tank and the WMU. As a result, estimated daily water pumping from groundwater wells would likely be less than 10,000 gallons.

The proposed project poses little impact to surface waters because no perennial surface waters exist within a one-mile radius of the project site. The nearest man-made canal is approximately 2,000 feet from the proposed WMU. Process-related reagents would be properly stored and handled within the mill building and the proposed PoO includes BMPs to limit and control erosion and reduce sediment. Additionally, areas disturbed during construction would be revegetated to reduce the potential for wind and water erosion. BMPs include, but are not limited to, diversion and routing of storm water using diversion ditches, sediment traps and rock and gravel cover. Section 5.5.4 of the Report of Waste Discharge Report describes the design of the proposed storm water diversion channel located upgradient from the WMU (0877887 BC Ltd., 2010).

The WMU has been designed to contain up to 32,000 tons of dry tailings. A minimum of three feet of freeboard below the WMU embankment crest would be maintained at all times. This freeboard is sufficient to accommodate direct precipitation within the WMU perimeter and the potential runoff from contributing areas. As such, the WMU has been designed and would be operated as a zero-discharge facility. Therefore, no release from the WMU to a surface water body is anticipated. Overall, the proposed project design and committed practices reduce and minimize potential impacts to surface water.

Vadose and groundwater monitoring as well as a Water Quality Protection Standard (WQPS) would occur in accordance with Monitoring and Reporting Program outlined in the WDRs. The design of the WMU and continuation of the monitoring program reduce potential effects to groundwater quality through adequate containment and treatment of tailings and ongoing monitoring of WMU effectiveness for detection of unanticipated release to vadose zone or the groundwater. The WMU would be doubled-lined and equipped with a LCRS to collect any fluid resulting from failure of the WMU's primary liner system. Leaked fluid would be directed to a sump for proper containment.

The WMU design incorporates the results of the slope stability analysis to maximize the factor of safety built into the proposed project. The WMU liner would be visually inspected on a weekly basis for indication of excessive wear, wrinkles, rips or tears. Observed breaches in liner integrity would be repaired as soon as possible and if necessary, processing operations would be suspended to accommodate liner repair.

The milling process requires 1,000 gallons of water per ton of ore or up to 96,000 gallons per day at maximum capacity. Initially, processing water would be supplied from the existing on-site production well PW-3. Some water would be lost through processing and to evaporation from

## BISHOP MILL PROJECT

the WMU. The overall daily water demand is substantially reduced by recycling most of the processing water at the thickener tank with the remaining water reclaimed from the WMU after the tailings settle out. Although most of the water would be recycled on-site, evaporation would result in some water loss that would be replenished from PW-3, as necessary to meet the process circuit water requirements, at an estimated rate of 20 gpm during summer months.

Figure 2-5 of the Report of Waste Discharge Report identifies four agricultural wells within a one-mile radius of the project area boundary (0877887 BC Ltd., 2010). The closest of these four wells is approximately 750 feet southeast of production well PW-3. Groundwater in the Chalfant Valley region generally occurs in unconsolidated to semi-consolidated alluvial deposits and flows towards the axis of the valley. SRK Consulting completed a hydrogeologic investigation of the aquifer beneath the project area in October 2010 (SRK, 2010). Table 2-5 of the Report of Waste Discharge summarized the aquifer characteristics (0877887 BC Ltd., 2010). The maximum yield of the production well (PW-3) is 86.3 gpm, with a drawdown of 5.0 feet and a radius of influence of 95 feet. Drawdown decreases to less than 0.5 feet outside the radius of the sphere of influence (SRK, 2010). Based on the distance between the four agricultural wells and PW-3, the proposed project would not substantially deplete groundwater supplies or create a net deficit in aquifer volume or a lowering of the local groundwater table level that would impact the production rate of these pre-existing wells.

The proposed project area and immediate vicinity contains no streams or rivers. The proposed project would not create additional impervious surfaces beyond hardscape associated with the expansion of the Mill building to include an ore-staging patio and Krupp mill pad. This additional impervious surface would not be substantial enough to alter existing drainage patterns of the project site or surrounding area. The project applicant would be required to comply with WDRs adopted by the LRWQCB in Board Order Number R6V-2011-0048 (CRWQCB, 2011a). Because the proposed project controls and treats runoff volumes within the project area, the project would not create sources of polluted runoff.

#### ***Limited Operating Period Alternative***

Effects under the Limited Operating Period alternative would be identical to the proposed action.

#### ***Reclamation Only Alternative***

The Reclamation Only alternative would result in the closure and reclamation of the project area. Operations would cease, existing structures would be removed, and the site reclaimed and revegetated. Impervious surface coverage would be reduced and water use and discharges would not occur. During site reclamation, the applicant would file a Notice and comply with State WDRs for Discharges of Storm Water Discharges Associated With Construction Activity, General Permit No. .CAS00002.

## **3.20 WETLANDS AND RIPARIAN ZONES**

### **3.20.1 Affected Environment**

The proposed project site is not located within or adjacent to any wetlands or riparian zones.

### **3.20.2 Direct and Indirect Effects**

#### ***Proposed Action and Alternatives***

The proposed action and alternatives would have no direct (e.g., habitat removal or disturbance) or indirect effect (e.g., reduced groundwater levels that could affect quality of off-site wetlands or riparian habitats) on any wetlands or riparian zones within the vicinity of the proposed project site. No wetlands or riparian habitats are present within or adjacent to the project area. Because the project area and surrounding vicinity contains no such habitats, the proposed project would have no impact on these resources.

## **3.21 WILD AND SCENIC RIVERS**

### **3.21.1 Affected Environment**

The proposed project site is not located within or adjacent to any designated wild and scenic river corridor or eligible wild and scenic river study segment corridor.

### **3.21.2 Direct and Indirect Effects**

#### ***Proposed Action and Alternatives***

The proposed action and alternatives would have no effect on wild and scenic rivers because the proposed project site is not located within or adjacent to any designated wild and scenic river corridor or eligible wild and scenic river study segment corridor.

## **3.22 WILD HORSES AND BURROS**

### **3.22.1 Affected Environment**

The proposed project site is not located within or adjacent to any federally designated herd management area or wild horse territory. No wild horses or burros occur within or adjacent to the proposed project site.

### **3.22.2 Direct and Indirect Effects**

#### ***Proposed Action and Alternatives***

The proposed action and alternatives would have no effect on wild horses or burros because the proposed project site is not located within or adjacent to any federally designated herd management area or wild horse territory and no wild horses or burros occur within or adjacent to the proposed project site.

## 3.23 WILDERNESS

### 3.23.1 Affected Environment

The proposed project site is not located within or adjacent to any designated wilderness area or designated wilderness study area.

### 3.23.2 Direct and Indirect Effects

#### *Proposed Action and Alternatives*

The proposed action and alternatives would have no effect on wilderness because the proposed project site is not located within or adjacent to any designated wilderness or designated wilderness study area.

## 3.24 WILDLIFE - INCLUDING ENDANGERED, THREATENED AND SENSITIVE SPECIES

### 3.24.1 Affected Environment

The proposed project site is located within Alkali Desert Scrub (Mayer and Laudenslayer, 1988) habitat. The majority of the project area (all but 0.02 acres) has been previously disturbed by past milling activities and is surrounded by a chain-link fence. As described in Section 3.16, minimal vegetation currently occurs in this disturbed area (e.g., 5-15% cover), therefore limited habitat is available for wildlife. The chain linked fence and access gate to the project site prohibits larger wildlife from entering the project area, however avian and bat species may access the project area and the surface of the WMU. Wildlife may also utilize the alkali desert scrub habitat surrounding the project site. Alkali desert scrub vegetation provides habitat for a variety of wildlife species including raptors, songbirds, bats, mammalian predators such as coyotes and fox, small mammals and reptiles. This habitat is common in the immediate project vicinity and the region.

No BLM designated sensitive wildlife species are known or expected to occur within the project boundaries because of the lack of suitable habitat resulting from the previous disturbance. However, several BLM designated sensitive species have been documented in the vicinity of the project site. Swainson's hawks (*Buteo swainsoni*) have been documented 1.5 miles to the east of the project site and four miles to the south, and golden eagles (*Aquila chrysaetos*) have been recorded 2.5 miles to the northwest of the project site. BLM designated sensitive bat species that have been documented from 4.5 to 8 miles from the project site include pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), and western small-footed myotis (*Myotis ciliolabrum*))(CNDDDB, 2012). Finally, the Bank Swallow (*Riparia riparia*), was documented one mile to the northeast of the project site. Two of the above BLM designated sensitive species (Swainson's hawk and bank swallow) are also designated as threatened under the California Endangered Species Act (CNDDDB, 2012).

## BISHOP MILL PROJECT

No federally threatened, endangered, or proposed wildlife species are known or likely to occur within or adjacent to the proposed project area, based on historical records (USFWS, 2010), habitat suitability, and field monitoring.

Because the project area lacks sufficient vegetation for nesting, there is no habitat for migratory bird species that may be considered migratory bird species of conservation concern.

### 3.24.2 Direct and Indirect Effects

#### *Proposed Action*

Minimal impacts are expected to wildlife because the project area is already heavily disturbed from past milling operations. This disturbed area and the 0.02 acres of proposed additional disturbance does not provide habitat for any BLM designated sensitive species or federally listed species. As described above, BLM designated sensitive species have been documented in the vicinity of the project area. Potential effects to wildlife in the vicinity of the project area include adverse health impacts from consuming mining waste (e.g. tailings) in an open body of water, and altered behavior patterns from noise and light pollution. Because the WMU would contain Group A mine waste within an open body of water (i.e., 185 feet by 240 feet at the WMU crest) with approximately one-acre of surface area, the potential exists for bird and bat species to be attracted to the water surface during milling operations. The chain-linked fence that surrounds the project area would exclude larger terrestrial wildlife species from accessing the WMU. Also, the committed practices for the protection of wildlife include monitoring of the main gate to assure that this primary entrance point is not utilized by wildlife. Because the fence would not limit their entrance, avian and bat species could come in contact with Group A mine waste held within the WMU. As such, a design measure is included in Section 2.2.3 to require netting or other BLM-approved method to keep avian and bat species from utilizing standing water within the WMU and to eliminate direct and indirect impacts to these species.

Operation of the mill would increase noise and light pollution in the immediate area surrounding the project site. Noise and light pollution have the potential to impact wildlife species by altering nesting and foraging activity. Increased noise levels may create unsuitable conditions for wildlife species to forage. Light pollution may adversely affect the foraging behavior of nocturnal species (bats). However, because there are no known sensitive wildlife species within one mile of the project site, increased noise levels and light pollution are not expected to result in any measureable adverse effects. Overall, the project area is surrounded by abundant undisturbed alkali desert scrub habitat. Because only a small proportion of the available alkali desert scrub habitat would be potentially affected by noise disturbance or light pollution, any avoidance of the area due to noise or light disturbance is expected to have negligible impacts on wildlife.

The project site would be reclaimed after five years of operation and returned to alkali desert scrub habitat. Reclamation of the site upon completion of milling operations would result in an overall positive impact over the long-term by returning the existing disturbed site to more natural habitat form and function.

### ***Limited Operating Period Alternative***

Effects under the Limited Operating Period alternative would be nearly identical to the proposed action.

Noise and light pollution at night are reduced under this alternative; therefore the effects to species active at night (e.g., bats) would be reduced.

### ***Reclamation Only Alternative***

No adverse impacts to wildlife in the project area are expected from the Reclamation Only alternative because there is currently no suitable habitat in the project area. The Reclamation Only alternative closes operations, removes on-site structures and fencing, and reclaims the site. This could result in short-term noise disturbance to wildlife in the vicinity of the project area during reclamation activities. However, there is sufficient habitat available for wildlife to disperse to during reclamation activities that any impacts would be negligible. By reclaiming the site and returning it to alkali desert scrub habitat, an overall positive impact would result by returning the existing disturbed site to a more natural habitat form and function.

## **3.25 TRAFFIC AND CIRCULATION**

### **3.25.1 Affected Environment**

2011 Caltrans traffic count data (<http://traffic-counts.dot.ca.gov/2011all/Route5-6.html>) was reviewed for U.S. Highway 6 (Caltrans, 2011). At the Inyo/Mono County line, annual average daily traffic is 1,900 southbound and 1,000 northbound. Annual average daily traffic (AADT) is the total volume for the year divided by 365 days. The traffic count year is from October 1st through September 30th. Very few locations in California are actually counted continuously. Traffic counting is generally performed by electronic counting instruments moved from location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables which may be present.

### **3.25.2 Direct and Indirect Effects**

#### ***Proposed Action***

Project operations include the transport of up to 75 tons per day of ore to stockpile at the project site for processing. Ore for processing would arrive in over-the-highway haul trucks, up to 4 incoming trucks per day depending on the ore being processed. Up to one additional haul truck would remove refined concentrate from the project site daily. Project operations would also include trips related to the on-site work force, up to 7 employees daily. Worker trips would equate to approximately 28 trips per day, assuming each worker leaves the project area once a day during their shift.

The increase in daily traffic from approximately 28 worker vehicle trips and 5 round-trip haul truck deliveries would not substantially increase traffic in relation to existing traffic levels on U.S. Highway 6, the primary highway that provides access to the project area.

## BISHOP MILL PROJECT

The project area is surrounded by a double perimeter chain linked fence and a controlled access gate. The gate would be staffed fulltime upon commencement of construction and operations to ensure adequate access for equipment and emergency services, should they be required. The proposed project does not increase the need for parking and the project area includes adequate space for both worker and haul truck parking.

***Limited Operating Period Alternative***

Effects under the Limited Operating Period alternative would be similar to the proposed action. Since nighttime operations would not occur, the number of operational vehicle trips would be less than those predicted for the proposed action. The increase in daily traffic associated with project operations would not substantially increase traffic in relation to existing traffic levels on U.S. Highway 6. The need for parking would not increase and adequate space for parking is available within the project area.

***Reclamation Only Alternative***

Under the Reclamation Only alternative, temporary construction-related traffic would occur during site reclamation, at levels similar to those analyzed for the other alternatives. No traffic would result from daily operations and no parking would be provided or required once site reclamation is complete. No substantial increases in traffic levels or parking demand would occur.

**3.26 CUMULATIVE IMPACTS**

Cumulative effects are defined as the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” (40 CFR § 1508.7). A description of current conditions inherently includes the effects of past actions and serves as a more accurate and useful starting point for a cumulative effects analysis than attempting to discern the effects of individual past actions. “Generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions” (CEQ Memorandum ‘Guidance on the Consideration of Past Actions in Cumulative Effects Analysis’ June 24, 2005). By comparing the current condition to the proposed action, we can discern the cumulative impact resulting from adding the incremental impact of the proposed action to the current environmental conditions and trends.

The geographic scope of the cumulative impact analysis for this environmental assessment encompasses the public lands administered by the Bishop Field Office and private lands in the nearby vicinity of the Bishop Mill project area. This geographic scope was chosen because of the small size and limited geographic effects of the Proposed Action and Alternatives. Effects from mining operations where ore for the mill would originate are not included in the cumulative effects analysis because effects from mill reactivation would not contribute to effects identified at the distant geographic locations of the mine sites.

At a regional level, numerous resource disturbing activities in the Owens Valley and throughout the Bishop Field Office area have created impacts similar to or greater than the proposed milling

## BISHOP MILL PROJECT

operations. These activities include paved and unpaved road development, Off Highway Vehicle (OHV) activities, residential and commercial development, agricultural water use, and fire.

The development of roads and trails throughout the region originates from the area's historic settlement at the turn of the twentieth century when access was needed to develop the area's resources and transport goods/services. Settlers, miners, ranchers, merchants, etc. developed a region of small communities and road networks to meet daily sustenance needs. Throughout the latter 20th century, the region evolved from an agrarian economy to its present day tourism. This altered traditional access use from survival and necessity to one that became recreation based, mostly motorized, although mountain biking, hiking and horseback riding may use similar routes. The thousands of miles of paved and unpaved roads in the region tend to be permanent conversions of sites and constitute a total loss of the site productivity. Associated infrastructure needs (i.e. power lines, rest areas, etc.) expand the permanency and loss of habitat and open space. Recreation use, such as OHV activities are usually short duration, but are generally repeated throughout the year reflecting the tourist value. Sometimes unauthorized routes are created near the rural communities by horses and/or vehicles.

The dozen or so communities that occupy the Bishop Field Office area have generally been stable and small, and include the nearby residential communities of Laws and Chalfant. Obviously, these permanent alterations have irreversibly committed land to housing development, fragmenting plant/animal habitat, altering scenic vistas, etc. Overall, the greatest potential development impact to habitat would occur from housing development on remaining scattered private land tracts throughout the region. Future housing demand may prompt landowners to pursue additional subdivision development, reducing small acreages of habitat in several locations. The Proposed Action would not commit federal lands to long-term and permanent alteration because it includes a reclamation plan following the completion of mill operations.

For resource topics where the Proposed Action and Alternatives would have no measureable direct or indirect effect on the environment, there would be no contribution to cumulative effects and no further analysis is required. These resource areas include: ACEC, Cultural Resources, Environmental Justice, Essential Fish Habitat, Farmlands, Native American Cultural Values, Rangelands and Permitted Livestock Grazing, Recreation, Social and Economic Values, Vegetation, Wetlands and Riparian Zones, Wild and Scenic Rivers, Wild Horses and Burros, and Wildlife.

The following resources include the potential for either direct or indirect effects from implementation of the Proposed Action and/or Alternatives. However, in each case, the Proposed Action and Alternatives would result in no adverse cumulative effect because of the negligible contribution to resource effects under all alternatives.

**Air Quality:** Increased emissions from potential residential housing development expansion in the project vicinity would be minor compared to the overall air basin emissions and when combined with the negligible effects associated with the Proposed Action and Alternatives, would not result in an adverse cumulative effect.

## BISHOP MILL PROJECT

Floodplains: Off-site runoff volumes would be unchanged under the Proposed Action and Alternatives and therefore would not contribute to increased runoff from potential residential housing development expansion in the project vicinity. Therefore, no adverse cumulative effects would occur.

Global Climate Change: Increased GHG emissions from potential residential housing development expansion in the project vicinity would be minor compared to the overall state of California GHG inventory and when combined with the negligible effects associated with the Proposed Action and Alternatives, would not result in an adverse cumulative effect.

Invasive, Non-Native Species: The extent of existing invasive, non-native plants would be reduced under the Proposed Action and Alternatives and therefore would not contribute to the spread of invasive, non-native plant species that could occur from potential residential housing development expansion in the project vicinity. Therefore, no adverse cumulative effects would occur.

Noise: Increased noise levels from potential residential housing development expansion in the project vicinity would be minor compared to background noise levels and when combined with the negligible effects associated with the Proposed Action and Alternatives, would not result in an adverse cumulative effect.

Soils and Geology: On-site and off-site erosion would be unchanged under the Proposed Action and Alternatives and therefore would not contribute to increased erosion from potential residential housing development expansion in the project vicinity. Therefore, no adverse cumulative effects would occur.

Visual Resources: Facilities included in the Proposed Action and Alternatives would not be visibly changed from existing conditions as seen from off-site viewpoints. Increased night lighting from potential residential housing development expansion in the project vicinity would be minor compared to existing night lighting and when combined with the negligible effects associated with operation of the Proposed Action, would not result in an adverse cumulative effect.

Wastes, Hazardous and Solid: Increased solid waste from potential residential housing development expansion in the project vicinity would be minor compared to the overall waste generated and disposed of in the region and when combined with the negligible effects associated with the Proposed Action and Alternatives, would not result in an adverse cumulative effect.

Water Quality and Hydrology (Surface and Groundwater): Increased groundwater pumping from potential residential housing development expansion in the project vicinity would be minor compared to existing groundwater basin pumping for residential and agricultural uses and when combined with the negligible aquifer effects associated with the Proposed Action and Alternatives, would not result in an adverse cumulative effect.

Traffic and Circulation: Increased vehicle trips from potential residential housing development expansion in the project vicinity would be minor compared to the existing trip volumes in the

---

BISHOP MILL PROJECT

region and when combined with the negligible effects associated with the Proposed Action and Alternatives, would not result in an adverse cumulative effect.

In summary, the Proposed Action and Alternatives, when considered in context with other past, present and reasonably foreseeable future projects, does not create impacts that are individually limited but cumulatively considerable.

---

## **4.0 LIST OF PREPARERS AND PERSONS/AGENCIES CONSULTED**

---

### **4.1 LIST OF PREPARERS**

#### **4.1.1 Bureau of Land Management, Bishop Field Office (BLM)**

351 Pacu Lane, Suite 100  
Bishop, CA 93514

Collin Reinhardt, Geologist

Gregory Haverstock, Archeologist

Martin Oliver, Botanist

Sherri Lisius, Wildlife Biologist

Joy Fatooh, Wildlife Biologist

#### **4.1.2 Hauge Brueck Associates (HBA)**

2233 Watt Ave, Suite 230  
Sacramento, CA 95825

Rob Brueck, Manager/Environmental Planner

Melanie Greene, Scientist

Garth Alling, Biologist

Christy Consolini, Planner

### **4.2 PERSONS/AGENCIES CONSULTED**

#### **4.2.1 California Regional Water Quality Control Board, Lahontan Region (LRWQCB)**

2501 Lake Tahoe Boulevard  
South Lake Tahoe, CA 96150

Tamerle M. Lundquist, PG  
Engineering Geologist

Tom Gavigan  
Senior Engineering Geologist

## BISHOP MILL PROJECT

**4.2.2 Inyo County Planning Department**

P.O. Drawer L  
168 N. Edwards Street  
Independence, CA 93526

Adena Fansler, Associate Planner (Mining Compliance)

**4.2.3 U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office (FWS)**

2493 Portola Road, Suite B  
Ventura, CA 93003

Request for species list. Consultation pursuant to Section 7 of the Endangered Species of 1973 (16 U.S.C. § 1531 *et seq.*) is not required because the proposed action would have no effect on any listed species, nor would it result in the adverse modification or destruction of any designated critical habitat for any listed species.

**4.3 FINAL AGENCY REVIEW****4.3.1 Reviewed by:**

\_\_\_\_\_  
Steven Nelson  
Supervisory Natural Resource Specialist  
Bureau of Land Management, Bishop Field Office

Date: \_\_\_\_\_

---

## 5.0 REFERENCES

---

- 0877887 BC Ltd. 2012. Bishop Mill Project Amended Plan of Operations and Reclamation Plan. CACA 30866 CA-017-MN2-71. January 2012
- 0877887 BC Ltd. 2010. 2010 Report of Waste Discharge, Bishop Mill Project, Inyo County, California. Revised November 15, 2010.
- California Department of Toxic Substances Control. 2011. EnviroStor Data Management System. <http://www.envirostor.dtsc.ca.gov/public/>
- California Department of Transportation. 2011. Caltrans Traffic and Vehicle Data Systems Unit, 2011 All Traffic Volumes on CSHS. <http://traffic-counts.dot.ca.gov/2011all/Route5-6.html>.
- California Natural Diversity Database (CNDDDB), 2012. Occurrence Report. Biogeographic Data branch, Department of Fish and Game, September 7 2012.
- California Regional Water Quality Control Board (CRWQCB), Lahontan Region. 2011a. Board Order No. R6V-2011-0048, WDID No. 6B140505002, Waste Discharge Requirements for the Bureau of Land Management and CMC Metals Ltd, Vancouver, Canada. July 13, 2011.
- California Regional Water Quality Control Board (CRWQCB), Lahontan Region. 2011b. Monitoring and Reporting Program No. R6V-2011-0048, WDID No. 6B140505002, for the Bureau of Land Management and CMC Metals Ltd, Vancouver, Canada. July 13, 2011.
- California Regional Water Quality Control Board (CRWQCB), Lahontan Region. 2011c. Investigative Order No. R6V-2011-0044. June 30, 2011.
- California Regional Water Quality Control Board (CRWQCB), Lahontan Region. 2011d. Bishop Mill Initial Study. May 3, 2011.
- Jones & Stokes. 2001. Inyo County General Plan. Inyo County, December 2001.
- Mayer, K.E. and W.F. Laudenslayer 1988. A Guide to the Wildlife Habitats of California. California Department of Forestry and Fire Protection, Sacramento.
- SRK Consulting Inc. 2010. Hydrogeology Technical Memorandum. Bishop Mill Project, Inyo County, California October 2010.
- United States Department of Agriculture, Natural Resources Conservation Service (NRCS). 2011. Official Soil Series Descriptions. <http://soils.usda.gov/technical/classification/osd/index.html>. Site accessed March 30, 2011.
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 1996. Soil Survey of Benton-Owens valley Area, California, Parts of Inyo and Mono Counties. National Cooperative Soil Survey.
- United States Department of the Interior, Bureau of Land Management, Greg Haverstock. 2011a. Cultural Resources Report (CA170-11-30). March 2011.

---

BISHOP MILL PROJECT

United States Department of the Interior, Bureau of Land Management. 2005. Environmental Assessment, FONSI and Decision of Record. Bishop, California.

United States Department of the Interior, Bureau of Land Management. 1993. Bishop Resource Management Plan. Approved, March 25, 1993.

United States Fish and Wildlife Service, Ventura Office. 2010. Federally Listed Threatened and Endangered Species Which May Occur in Inyo County, CA. May 6, 2010.

URBEMIS. 2011. URBEMIS Combined Annual Emissions Report. April 5, 2011.