Fancher Project
Environmental Assessment

Prepared for

Luxcor Gold, LP

Prepared by

SWCA Environmental Consultants

September 2011

ENVIRONMENTAL ASSESSMENT
DOI-BLM-AZ-C020-2010-0017-EA
AZA-3459501

PROPOSED FANCHER PROJECT OPERATIONS

TOWNSHIP 1 SOUTH, RANGE 14 WEST, SECTION 10
GILA AND SALT RIVER MERIDIAN

Yuma County, Arizona

Prepared for

Bureau of Land Management
Yuma Field Office
2555 East Gila Ridge Road
Yuma, Arizona 85365-2240
Attn: Buzz Todd
(928) 317-3218

On behalf of

Luxcor Gold, LP
5215 – 126 Street
Edmonton, Alberta, Canada T6H 3W5
Attn: Jim W. Clark
(780) 993-3118

Prepared by

SWCA Environmental Consultants
3033 North Central Avenue, Suite 145
Phoenix, Arizona 85012
(602) 274-3831
www.swca.com

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CONTENTS

Exhibits

Figures

Tables

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1.0

INTRODUCTION

1.1 BACKGROUND

This environmental assessment (EA) was prepared to analyze the potential environmental effects of Luxcor Gold LP's (Luxcor's) submitted *Fancher Project Plan of Operations* (PO) for the proposed Fancher Project (Project) to the Yuma Field Office (YFO) of the Bureau of Land Management (BLM). The PO is serialized as AZA-3459501 and is available for public review in the YFO.

The proposed Project consists of a future mine, ore haulage route and reclamation of the mine site at the end of the Project. Gold ore is the primary mineral Luxcor would extract from the mine. The proposed Project mine site is located in the Little Horn Mountains, within the Sheep Tanks Mining District, approximately 22 miles south of I-10 in northern Yuma County, Arizona, at elevations ranging between approximately 1,650 and 1,850 feet above mean sea level (Figure 1.1-1). The Project mine site is located within a group of 10 contiguous lode mining claims in sections 2, 3 and 10, Township 1 South, Range 14 West, Gila and Salt River Meridian, Yuma County, Arizona (Figure 1.1-2). The entire Project mine site is within the jurisdiction of the BLM YFO. Details of the claims can be found in the PO.

The Project would occur in two different BLM Field Office planning areas. The Project mine site and haul route from the mine site to Interstate 10 (I-10) are located in the YFO. The Project haul route from I-10 to the mill site is located in the Lake Havasu Field Office (LHFO). The legal land description for the proposed Project, including access and haul roads, is attached as Exhibit A. The BLM YFO will decide whether to accept, accept with modifications, or reject Luxcor's PO. This EA will ensure the Project's compliance with the National Environmental Policy Act (NEPA) by making a determination regarding whether any significant impacts could result from the Proposed Action and alternatives. If in following the analysis in the EA the BLM determines that this Project has a significant impact, an environmental impact statement (EIS) would be prepared before the Project moves forward. If the EA discloses that no significant impacts would result from the proposed Project, a Decision Record that includes a Finding of No Significant Impact (FONSI) may be signed and the Project approved.

The Project mine site has been extensively disturbed by past mining and exploration, beginning in the 1930s to the present. A complete description of the Project mine site history is presented in the PO. An open pit, waste rock dump, and infrastructure, including roads and facility sites, are currently present at the mine site from previous mining activities; these features are only partially reclaimed.

With the known ore reserves at the Project mine site and the anticipated production rate, the proposed mining operation would be complete within three years. Reclamation would require an additional month immediately following the completion of mining.

Also included in this EA is an approximately 30 mile-long portion of Verdstone and Hovatter Roads that cross BLM-administered land. These roads would provide the proposed Project haul route for the mined ore to the ore processing facility, located approximately 30 miles north of the Project mine site at the Rio del Monte Mine[1]. The haul route includes existing, maintained dirt roads. Though the USGS 7.5"

[1] The Rio del Monte Mine is on privately-owned land and is therefore not under the jurisdiction of BLM.

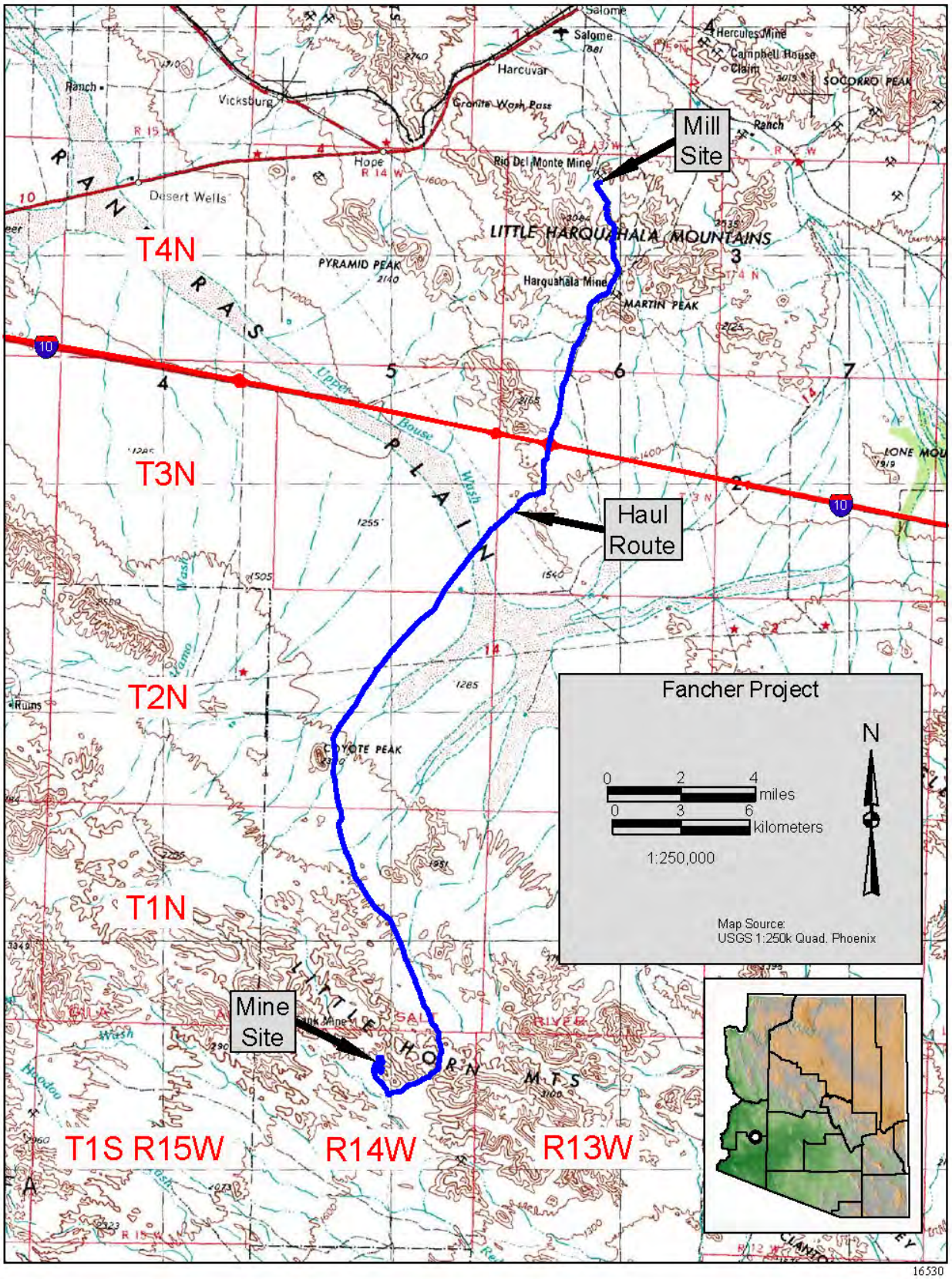

Figure 1.1-1. Fancher Project mine site and haul route.

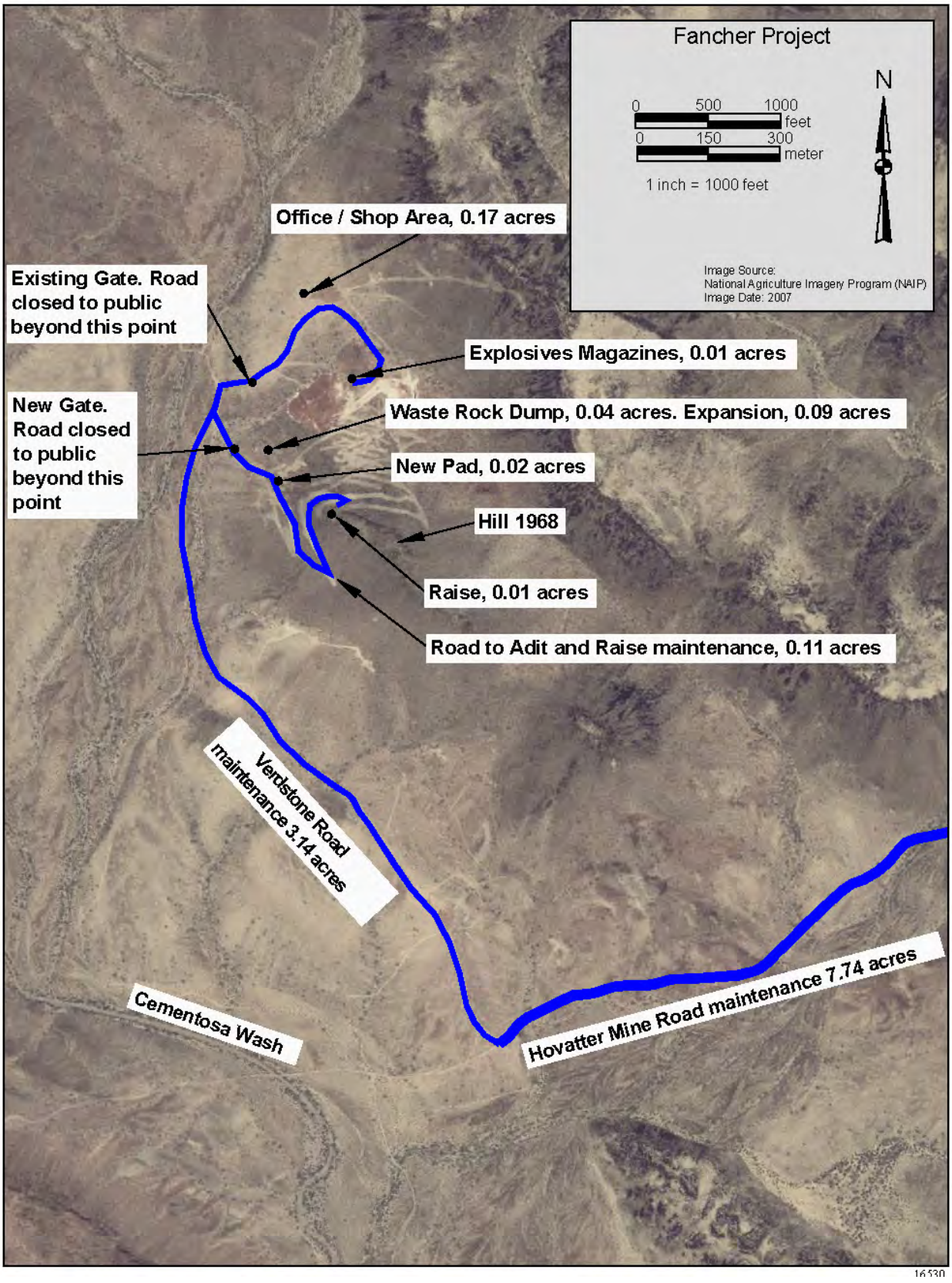

Figure 1.1-2. Fancher Project mine site occupancy area.

Quadrangle and other outdated maps show Hovatter Road north of I-10 in La Paz County as "Harquahala Mine Road," for the purposes of consistency with BLM records and the PO, the haul route north of I-10 in La Paz County will be referred to as Hovatter Road.

Approximately 7 miles of the haul route, from the intersection of I-10 and Hovatter Road north to the Rio del Monte Mine, is located within the BLM LHFO planning area.

1.2 PURPOSE AND NEED FOR ACTION

This EA will assist the BLM in evaluating and considering whether the Project can be completed in an environmentally sound manner and whether the Proposed Action is consistent with BLM policies. Pursuant to NEPA (40 Code of Federal Regulations [CFR] 1502.13), this EA has been prepared to provide sufficient evidence and analysis for: 1) determining whether to prepare a more detailed EIS or 2) issuing a FONSI.

Luxcor, in accordance with the regulations found at 43 CFR 3809.400, has submitted a mining plan of operations for the Proposed PO to the BLM YFO. The purpose of this action is to allow the lessors of existing mining claims, Luxcor, to mine gold from mineral reserves on BLM land. The underlying purpose of this EA is for BLM to identify potential environmental effects that implementation of the Project as proposed in the PO, or any reasonable alternatives to the Project, may have on the existing environment.

The need to accept, accept with modifications, or reject Luxcor's PO is established by the BLM YFO's responsibility, in accordance with the regulations found at 43 CFR 3802.1-5 to respond to Luxcor's request for legal mining access on BLM land. Currently, Luxcor does not have legal approval to mine its claims on BLM land. Authorization of the Project—the *Fancher Project PO*—is needed in order for Luxcor to legally mine the claims included in the PO.

Before the authorized BLM officer can accept, accept with modifications or reject the PO, an environmental assessment is needed to determine if the Project will cause unnecessary and undue degradation (43 CFR. 3802.3-1(a)) to the existing environment.

The BLM YFO will decide whether to issue a FONSI or require additional environmental analysis.

1.3 CONFORMANCE WITH LAND USE PLANS

As previously discussed, the Project would occur in two different BLM Field Office planning areas. The Project mine site and haul route from the mine site to I-10 are located in the YFO. The Project haul route from I-10 to the mill site is located in the LHFO.

The 2010 YFO Approved Resource Management Plan (RMP) and Record of Decision (ROD) identify the mine site lands as open to locatable minerals and identify the haul routes as open to public use. The ROD is the decision document associated with the RMP environmental impact statement (EIS). The ROD is issued to document the selected alternatives and any accompanying mitigation measures that were identified in the RMP.

The proposed Project is in conformance with the following decisions found in the YFO RMP and ROD (BLM 2010a). Desired Future Conditions for Locatable Minerals under the RMP and ROD include the following:

- MI-011: Public lands are available for exploration, location, and development of mining claims in accordance with existing mining laws unless withdrawn or segregated from entry.
- MI-012: Operations authorized by the mining laws do not cause unnecessary or undue degradation of public lands.

Management Actions for Locatable Minerals under the YFO RMP and ROD include the following:

- MI-015: Require an Mining Plan of Operations (MPO) in accordance with 43 CFR 3800 for operations, including but not limited to:
    - Where disturbance is greater than 5 acres or where bulk sampling will remove 1,000 tons or more of ore;
    - In lands or waters known to contain federally listed threatened or endangered species or in proposed or designated critical habitat.
- MI-018: Assess all MPOs for potential impacts to Sonoran desert tortoise habitat on a case-by-case basis. Adverse impacts to desert tortoise will be mitigated to the extent allowable in BLM 43 CFR 3809 regulations.

Management Actions for Travel Management (pertaining to the Project's use of the haul route) under the YFO RMP and ROD include the following:

- TM-023: The YFO Transportation System continues to provide essential motorized access to non-Federal lands, access across BLM-administered lands, access to private inholdings surrounded by BLM-administered lands, and recognizes prior existing access rights;
- TM-032: Designate all inventoried routes within the YFO as open, closed, or limited to public use; and
- TM-059: Identify the 587,000-acre Yuma East Travel Management Area and its 1,410-mile route inventory as the planning area that will be addressed in the implementation-level Yuma East Travel Management Plan (TMP).

The 2007 Lake Havasu Approved RMP and ROD identify the haul route as open to public use. The proposed Project is in conformance with the following decisions found in the Lake Havasu Field Office (LHFO) RMP and ROD (BLM 2007).

Management Actions for Travel Management (pertaining to the Project's use of the haul route) under the LHFO RMP and ROD include the following:

- TM-2. Reasonable, safe, and environmentally sound access will be provided to visitors, local residents, licensed or permitted activities, and property owners. LHFO will be linked with other state, regional, and land management agencies or interest groups to better facilitate travel management;
- TM-36. Use of authorized ROWs will be managed for public access and through the TMPs designated either open or limited.

1.4 RELATED ENVIRONMENTAL IMPACT STATEMENTS, ENVIRONMENTAL ASSESSMENTS, AND OTHER RELEVANT DOCUMENTS

The 2010 YFO RMP and ROD is the current authority for the management of the Project mine site and portion of the haul route south of I-10. The 2007 LHFO RMP and ROD is the current authority for the management of the Project haul route that travels north of I-10 to the mill site. The Project is located on land administered by the BLM YFO and LHFO; however, certain activities involve permitting and regulation by other governmental entities.

There are currently no active EIS or EA project-specific documents that would include the Project, apart from the RMP documents discussed above.

Table 1-1 describes required permits with which the Project must conform. Additional permits, though not anticipated, would require written permission from the authorized office for this Project.

Table 1-1. Fancher Project Required Permits and Compliance

Permit	Reason for Requirement	Agency Jurisdiction
43 CFR 3809, Surface Management for Unpatented Mining Claims and Sites Situated on Land Administered by the BLM	Requires a PO (including reclamation) for certain mining projects on BLM-administered land	BLM
30 CFR 56.9300, Safety Devices, Provisions, and Procedures for Roadways	Certain roadways at the mine site require berms	U.S. Mine Safety and Health Administration (MSHA)
Air Quality Permit (AQP)	Required for air emissions that exceed Federal National Ambient Air Quality Standard (NAAQS) limits; and for equipment that exceeds 325- brake horsepower (bhp)	Arizona Department of Environmental Quality
Aquifer Protection Permit (APP)	Required for discharges to an aquifer	ADEQ
Arizona Pollutant Discharge Elimination System (AZPDES) General Permit for Stormwater Discharges Associated with Industrial Activity – Mineral Industry to Waters of the United States (MSGP 2010)	Required to control potential storm runoff from disturbed areas	ADEQ
Stormwater Pollution Prevention Plan	Required for coverage under MSGP 2010 as part of AZPDES; must be kept on premises at all times during construction and operation	ADEQ
Conditionally Exempt Small Quantity Generator of Hazardous Wastes	Required if project generates between 220 and 2,200 lb (100 and 1,000 kg) of hazardous waste in any calendar month and does not accumulate over 13,228 lb (6,000 kg)	ADEQ/U.S. Environmental Protection Agency (EPA)
Resource Conservation and Recovery Act (RCRA) Identification Number	Requires individuals who generate or transport hazardous waste to notify EPA of their regulated waste activities and obtain a RCRA Identification Number	EPA

Luxcor determined the mine site will require a Class II Air Quality Permit due to the combined brake horsepower (bhp) of internal combustion engines that would exceed the permit threshold of 325-bhp. An air quality permit application is currently being prepared for the mine site (to be submitted to BLM

once approved). Regulated pollutants that would be emitted at the mine site are particulates and fine particulates from drilling and blasting, plus nitrogen oxides, sulfur dioxide, and carbon monoxide. All drilling and blasting activities would be wet and underground (Refer to Section 3.2 and 4.2, Air Quality).

Luxcor, in consultation with the ADEQ, applied for and received a Determination of Applicability (DOA) from ADEQ regarding the requirement for general or individual Aquifer Protection Permits (APP) for the Project mine site waste rock dump and temporary ore stockpile at the mine site, and for temporary ore stockpile and tailings impoundment at the privately-owned mill site. The DOA states that the waste rock dump at the mine site must be covered under a 2.02 General Permit. Further details of the DOA are found in the PO.

An AZPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity – Mineral Industry to Waters of the United States (MGSP 2010) is required for the mine site for precipitation runoff from the waste rock dump and the shop area. Coverage of potential stormwater discharge is obtained by preparing a Storm Water Pollution Prevention Plan (SWPPP), controlling potentially impacted runoff as required in the SWPPP, and filing a Notice of Intent (NOI) with the ADEQ. The SWPPP is retained at the mine site and is not submitted to the ADEQ unless state-designated impaired or outstanding waters could be impacted, which is not the case at the mine site. Luxcor is currently covered under AZPDES General Permit AZCON-41330 for development of the decline and has a SWPPP for that activity. Luxcor has also prepared a new SWPPP for mine operations and will submit a NOI for coverage under the EPA's MSGP 2010 once runoff control measures have been installed. A copy of the NOI will also be submitted to the BLM.

Luxcor intends to construct the Project and all facilities included in the Project on uplands and have no intention to dredge or fill jurisdictional WUS. WUS are under the jurisdiction of the U.S. Army Corps of Engineers. Because no WUS are expected to be dredged or filled at the mine site, along the haul route, or at the mill site, a Section 404 Permit is not necessary for this project.

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2.0

PROPOSED ACTION AND ALTERANTIVES

2.1 PROPOSED ACTION

The Proposed Action is the *Fancher Project Plan of Operations* (PO). The PO is available for public review at the YFO. Please contact the YFO at (928) 317-3200 for all inquires on the Fancher PO. As described in the PO, the proposed Project includes new development at the Project mine site, a haul route that would use Verdstone and Hovatter Roads,and two phases of reclamation of the mine: during the first year and when the proposed mining activities are complete. Section 2.1.3 discusses the two phases of reclamation.

The proposed Project would include extraction of an estimated 60,000 tons of gold ore. The ore would be mined by underground mining methods and hauled to the Rio del Monte Mine (the mill site), located on private property near Salome, Arizona, for processing. No concentration or chemical processing of the ore would occur on public lands. Luxcor would lease the Rio del Monte Mine and use it as a mill site for ore processing (milling) and tailings disposal.

Construction and mine site development would take an estimated two months prior to mining any ore and the processing of that ore. With the known ore reserves at the Project mine site and the anticipated production rate, operation of the mine is anticipated to last three years. Phase one of reclamation would occur during the first year of operation. The second phase of reclamation activities would begin immediately following the completion of mining, and would last an additional month.

Total Project use area (including the mine site and the intended maintenance and use of Verdstone and Hovatter Roads from the Project mine site to the mill site) would be 15.25 acres. Of the 15.25 acres, 14.45 acres have been disturbed by previous use and mining activities (as described below). Therefore, the Project would result in 0.80 acre of new disturbance. The Project components, including reclamation activities, are described below and in detail in the PO.

2.1.1 Mine Facilities

The Project mine site at Hill 1968 has been extensively disturbed by past mining and exploration, beginning in the 1930s, through the present. The site is located within a group of 10 contiguous lode mining claims leased by Luxcor. Some infrastructure, including roads, a gate, and disturbed areas remain from previous mining at the adjacent Verdstone Mine, which was abandoned in the 1990s. Existing mining facilities that would be used as part of the Project include an exploratory drilling road, a small waste rock dump, cleared areas, and an existing decline that would be used for primary access to the orebody (Figure1.1-2). The existing waste rock dump would be expanded as described in the PO. The existing decline is the sloping entrance from the surface down to the underground mine. Refer to Figure 1.1-2 for illustrations of the occupancy locations of the Project mine site activities described herein.

A new security gate would be installed on the road to the existing decline to protect mine facilities and equipment from theft and vandalism and to exclude the public from mining-related hazards.

Mobile buildings for an office/change house and shop/storage building would be located on 0.17 acre of previously disturbed surface beside Verdstone Road, about 1,000 feet north of the decline. A watchman's

RV or trailer would be located in the same area to provide security for the mine and protect the public from mine-related hazards.

An underground raise would be developed to the surface to provide a second entrance to the mine for emergencies and ventilation within the mine. Surface facilities would include an 18 × 20-foot concrete slab on which a vent fan and door for access to the raise would be mounted. The slab would be located on a previously disturbed and existing road that would also provide access to the raise. Additionally, a 20 x 40-foot concrete slab would be located on the east side of the adit on which a compressor, generator, fuel tank, and water tank for the mine would be placed, as described in the PO.

Explosives magazines would be located on about 0.01 acre of previously disturbed surface at the end of Verdstone Road, about 700 feet beyond the mobile buildings. Table 2-1 describes the use and expansions of existing facilities, as well as new occupancies included in the PO.

2.1.2 Access

Hovatter and Verdstone Roads would be used to access the Project mine site and haul ore to the mill site near Salome, approximately 30 miles away. Proposed use (trips and frequency) for the haul route is described below (Table 2-2).

2.1.2.1 Hovatter Road

Hovatter Road would provide the primary access to the Project mine site from I-10 (Refer to Figures 2.1-1 – 2.1-5). It would also provide the primary route for transporting the ore from the Project mine site to the mill site. Project-related use of Hovatter Road would be confined to the existing roadbed for the entire length of the road. It is anticipated that no disturbance outside of the existing roadbed on Hovatter Road would occur.

A total of 2.66 miles of Hovatter Road that would be used by the Project lies within Yuma County, and averages 24 feet wide. The portion of Hovatter Road that lies within Yuma County is not maintained; therefore the Project includes the maintenance of Hovatter Road within Yuma County. Maintenance would include road watering, the application of a non-hazardous, non-toxic, synthetic oil-based or polymer-based dust palliative, and grading within the roadbed, as needed. Road maintenance would be conducted within the footprint of the existing road to a maximum width of 20 feet. No disturbance outside the existing roadbed is allowed without written permission from the authorized officer. Filling of small washouts and covering exposed bedrock with gravel from the waste rock dump would be conducted as conditions require. Following heavy rainfall, some areas of the road may wash out and require filling in order to maintain a level roadbed. These fillings would use rock and gravel from the waste rock dump at the existing Verdstone mine. No new disturbance outside of the existing roadbed would occur as a result of the maintenance of Hovatter Road.

A total of 26.33 miles of Hovatter Road would be used by the project in La Paz County, from the Yuma County line to the mill site. Of the total 26.33 miles of Hovatter Road in La Paz County, approximately 18.83 miles of Hovatter Road would be used from the Yuma County line to the I-10 interchange, and approximately 7.5 miles of Hovatter Road would be used from the I-10 interchange to the mill site. This portion of the haul route averages 23 feet wide, and is actively maintained and regularly graded by La Paz County; however it was discovered that Hovatter Road does not have an approved BLM right-of-way. Pursuant to Title V of FLPMA, La Paz County has applied for a BLM right-of-way to cover Hovatter Road from the Yuma County line to the Town of Salome under BLM Case File No. AZA 35697.

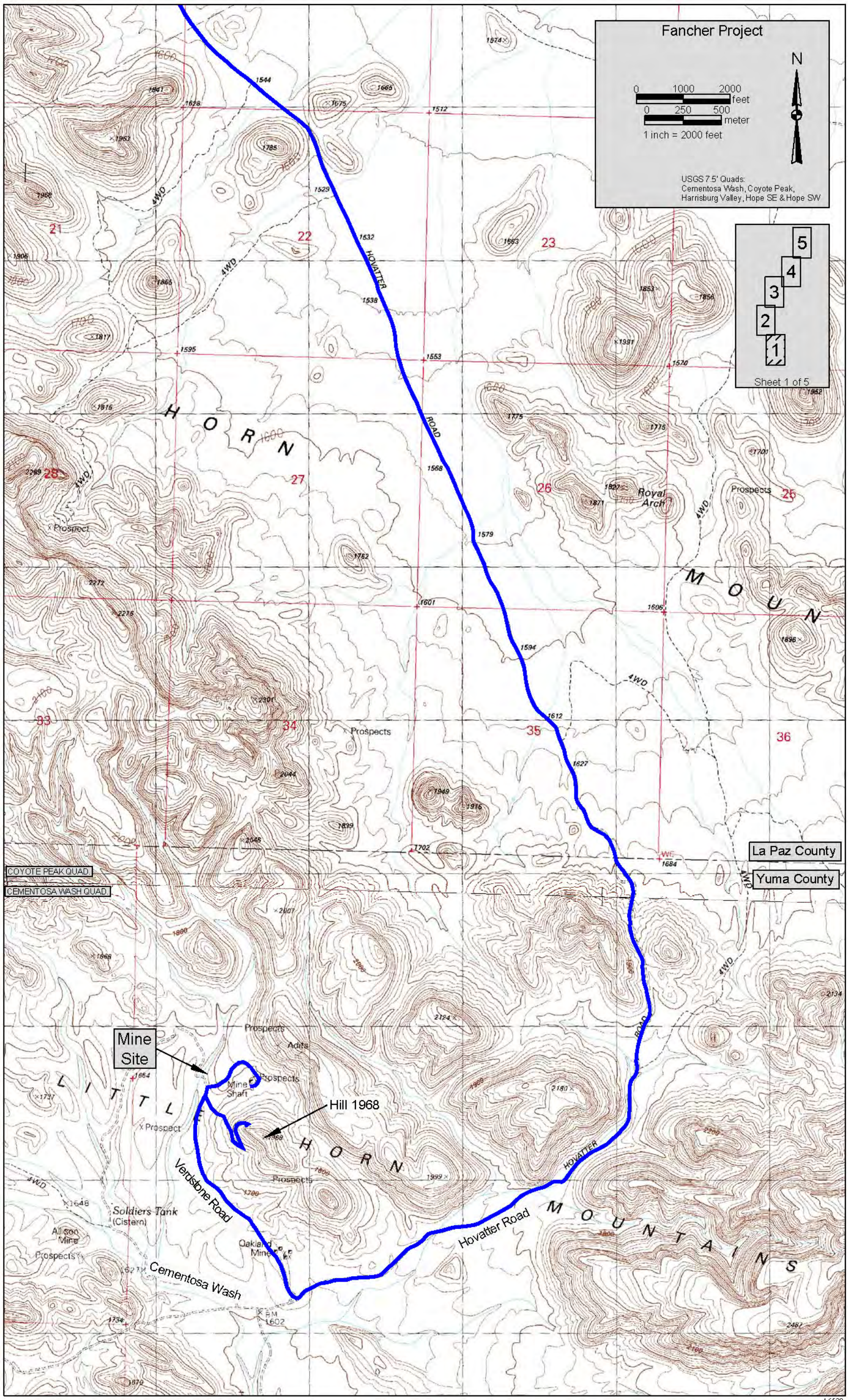

Figure 2.1-1. Fancher Project mine site and haul route.

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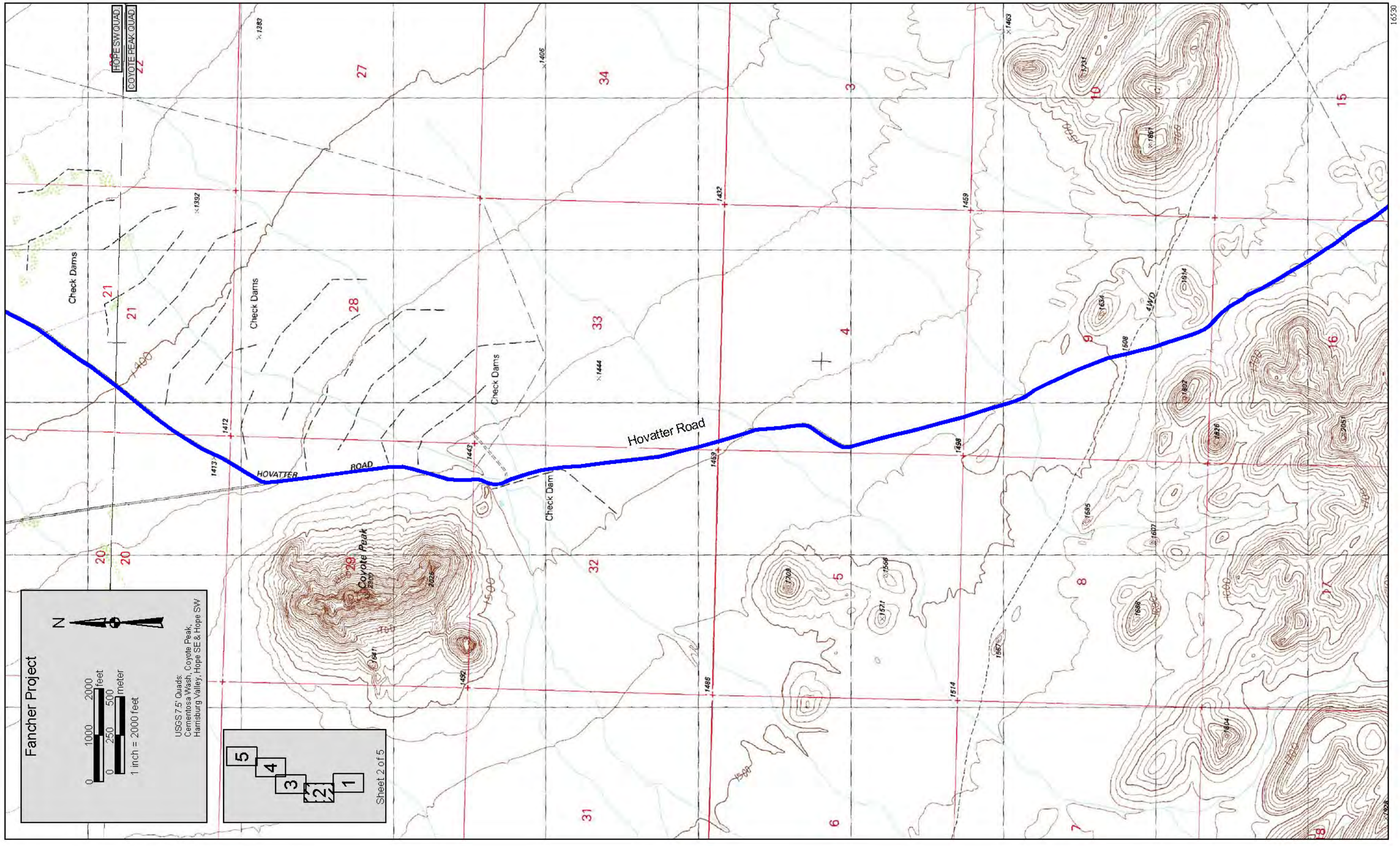

Figure 2.1-2. Fancher Project haul route.

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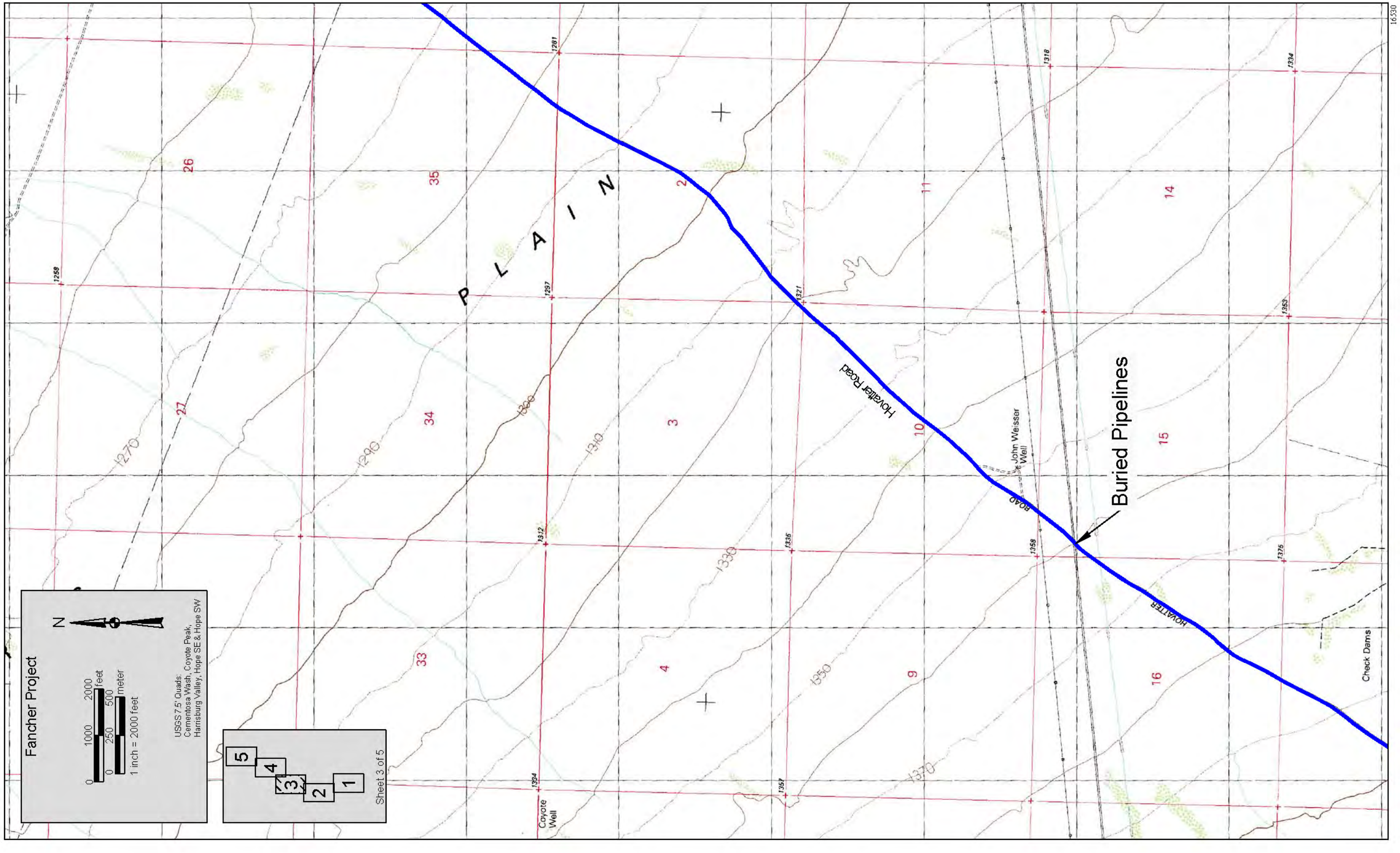

Figure 2.1-3. Fancher Project haul route.

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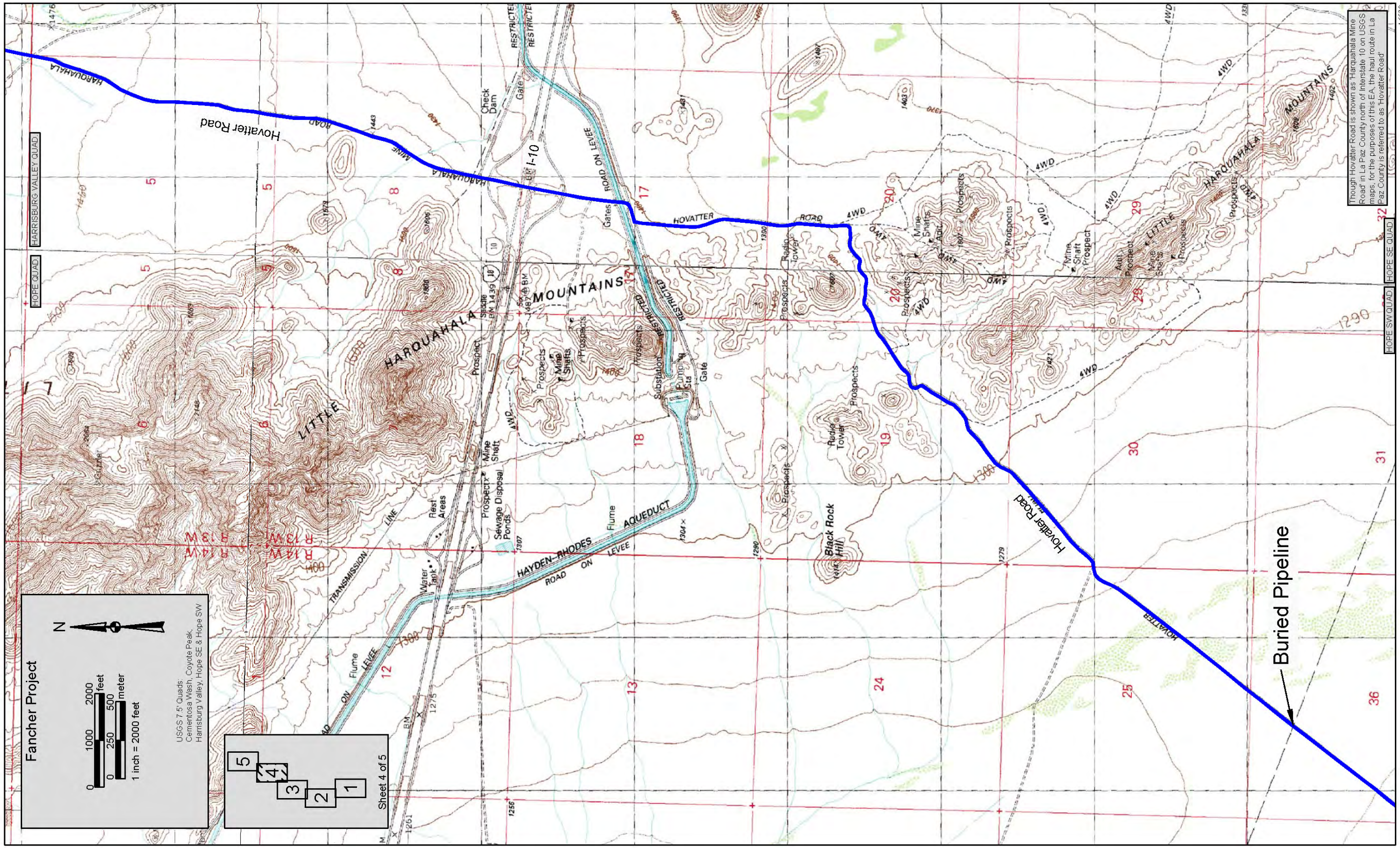

Figure 2.1-4. Fancher Project haul route and I-10 intersection.

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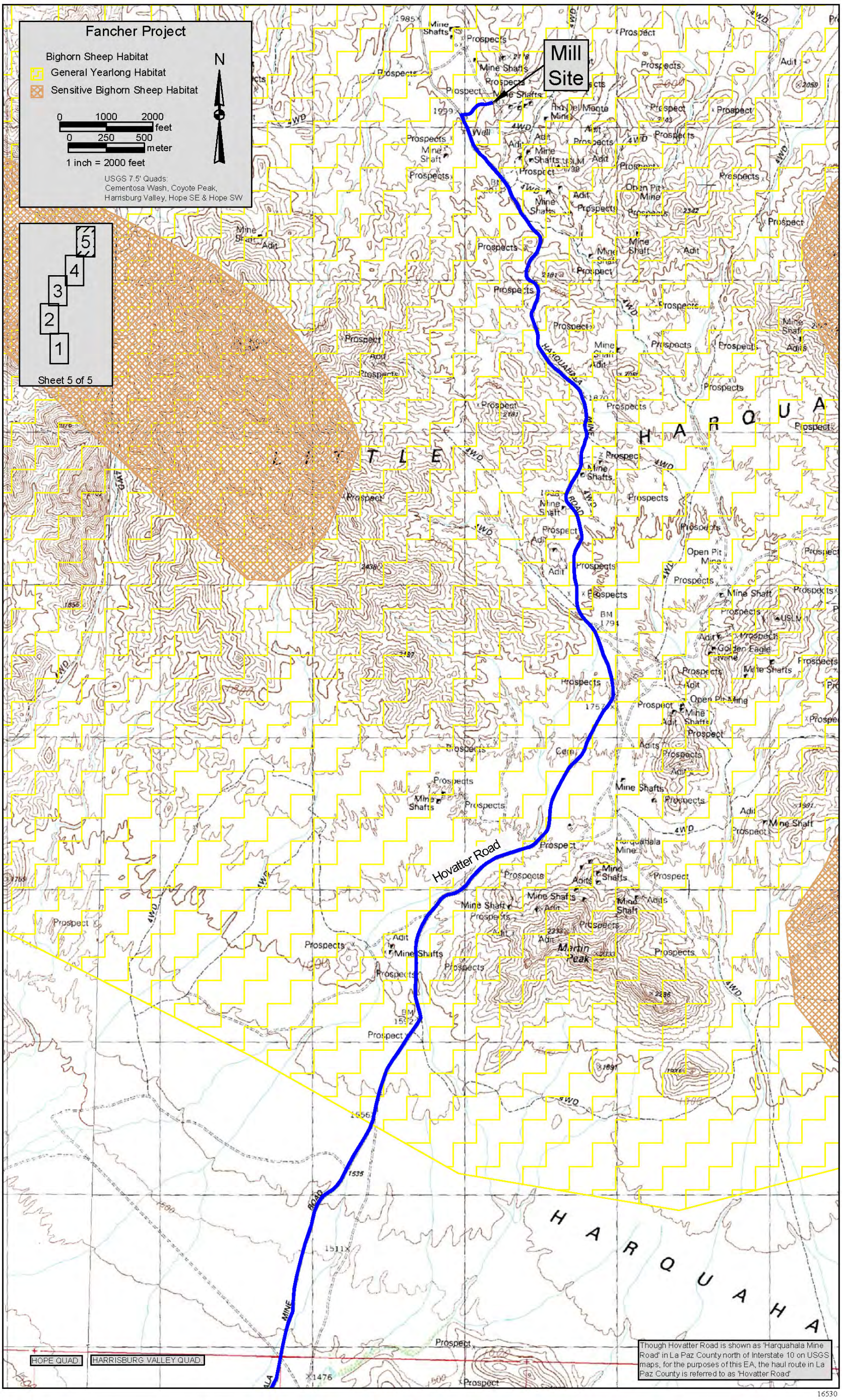

Figure 2.1-5. Project haul route and mill site.

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Luxcor would apply water and a non-hazardous, non-toxic, synthetic oil-based or polymer-based dust palliative to areas of the road that are likely to create fugitive dust. Hovatter Road crosses approximately 4,580 feet of Arizona State Trust land along the haul route; located approximately 3 miles south of I-10. Luxcor has applied for a State Trust land right-of-way (Application Number 18-115503). No other maintenance activities for Hovatter Road within La Paz County are planned. Hovatter Road is unpaved except for 0.66 mile at the I-10/Hovatter Road interchange. At the I-10 interchange, Hovatter Road continues for the remaining distance (approximately 7 miles) to the mill site (Refer to Figure 2.1-4 and Figure 2.1-5). The Project haul route includes Hovatter Road from the mine site to the mill site; no portions of Hovatter Road north of the mill site are included in this Project.

Table 2-1 describes the BLM occupancy areas that the Project would use. Table 2-2 provides the haul route's anticipated road use and frequency.

2.1.2.2 Verdstone Road

Verdstone Road connects the Project mine site to the primary access road, Hovatter Road, in Yuma County (see Figure 1.1-2 and 2.1-1). Verdstone Road is not maintained by Yuma County; therefore Luxcor would maintain Verdstone Road from Hovatter Road for 1.08 miles to the existing security gate at the Project mine site. An additional 1,700 feet of Verdstone Road would also be maintained behind the gate; this portion would be closed to the public. The roadbed averages 24 feet wide, and all maintenance would be conducted within the existing roadbed to a maximum width of 20 feet. Maintenance would include road watering, the application of a non-hazardous, non-toxic, synthetic oil-based or polymer-based dust palliative, and grading within the roadbed, as needed.

Filling of small washouts may be required on Verdstone Road using the same methods as described for the Yuma County portion of Hovatter Road.

2.1.2.3 Decline and Raise Road

The decline and raise road would be closed to public behind a new security gate to be installed just off Verdstone Road (see Figure 1.1-2). This road would provide access to the new raise (second entrance and ventilation shaft) above the underground mine. The Project would require widening an existing 2,360-foot-long, 15-foot-wide exploration drilling road: the road would be widened to 17 feet, resulting in 0.11 acre of new surface use. The excavated material from the road-widening would be pushed into a 2-foot-high berm along the outer edge of the road, as required by the MSHA, for safe travel on steep portions of the road that traverse the hillside.

2.1.3 Reclamation

The Project is anticipated to be in operation for three years. The Project mine site would be reclaimed in two phases. The first phase would be done in an existing unreclaimed area that is part of the abandoned Verdstone Mine. This reclamation (Phase One) would be done as mitigation for disturbance of desert tortoise habitat by the Project (see Section 3.21).The second phase would begin upon closure of the mine and include all of new surface disturbance at the Project mine site (Phase Two).

Table 2-1. Occupancy Areas of the Fancher PO

Project Components	Occupancy Description	Occupancy Dimensions	Occupancy Area (acres)[1]
Mine Facilities			
Existing waste rock dump	Small dump created during excavation of the decline	Irregular	**0.40**
Waste rock dump expansion	New waste rock would be added to the existing dump	Irregular	**0.09**
New pad at decline for generator, compressor, water and fuel tanks	Area would be leveled and equipment placed on the leveled ground	20 × 40 feet	**0.02**
New office/change house and shop/storage building area, watchman's trailer	Mobile structures would be placed on disturbed area	100 × 75 feet	**0.17**
New sediment ponds	Small, bermed impoundments located downslope of the existing waste rock dump and shop	30 x 22 feet 15 x 15 feet	**0.01**
Raise (second mine entrance)	Surface facilities include a door and ventilation fan on a new concrete slab	18 × 20 feet	>0.01
New explosives magazines	Mobile structures would be placed on disturbed area	15 x 15 feet	>0.01
Access			
Hovatter Road (Yuma County) maintenance and use	Mine site access, equipment and supplies delivery, and ore hauling	2.66 miles × 20 feet maximum width	7.74
Verdstone Road maintenance and use	Site access, equipment and supplies delivery, and ore hauling	1.08 mile × 20 feet maximum width	3.14
Verdstone Road (behind closed gate) maintenance and use	Site access, equipment and supplies delivery, and ore hauling	1,700 × 20 feet maximum width	0.78
Road to decline and raise	Inadequate access to decline and raise	2,360 × 15 feet	0.81
Road to decline and raise widening, maintenance and use	Access to decline and raise (new total road width would be 17 feet)	2,360 × 2 feet	**0.11**
Reclamation			
Equipment and structures removal	Remove electrical, air lines, water lines, structures, equipment, trash and debris	n/a	–*
Mine closure	Fill mine decline and raise with rock from waste rock dump	n/a	–*
Road to decline and raise closure	Pull side-cast material back into roadway, install water bars	n/a	–*
Waste rock dump	Grade to 3:1 slope and contour to blend with surroundings	n/a	–*
Hard-packed areas	Scarify to promote revegetation	n/a	–*
Desert Tortoise mitigation	Reclaim portions of the Verdstone Mine waste rock dump , fill pit ramp, reclaim drill road and ditch	1.98	1.98
Total Use Area			15.25
Previously Disturbed Area			14.45
Total New Use and Occupancy			**0.80**

* No additional acreage for reclamation activities; acreages listed under "mine facilities" would be reclaimed. See Section 2.1.3 Reclamation, below.
1: Boldface type for Occupancy Area denotes new disturbance.

Table 2-2. Fancher Mine Haul Route: Verdstone and Hovatter Road Use

Type of Cargo	Round Trips	Frequency
Construction Workers	30	Beginning of operations
Personnel	8	Daily
Ore Trucks	12	Daily except weekends
Water for Mine	1	Weekly
Water for Roads*	Variable	Variable
Fuel and Lubricants	1	Monthly
Mining Supplies	1	Monthly
Explosives	1	Monthly
Equipment	10	Beginning and end of operations (approximately two months at beginning and one month at end)
Mobile Buildings	3	Beginning and end of operations
Reclamation Workers	15	End of operations

** Road watering would be conducted as conditions require; dust palliatives will be used to bind dust particles to the road surface, which would decrease water use over time.*

2.1.3.1 Phase One

The desert tortoise mitigation is designed to ensure that there is no net loss of quality habitat for the tortoise. The ultimate objective of such mitigation is to ensure that the number and viability of regional populations are not diminished.

The desert tortoise habitat mitigation (first phase of reclamation) would begin during the first year of mine production. Luxcor proposes to reclaim 1.98 acres that are part of the waste rock dump, pit ramp, and about 1,000 feet of drill road and ditch associated with the adjacent abandoned Verdstone Mine. Luxcor would decrease the slope of a 50-foot-high face of the existing waste rock dump to a flatter slope of less than 3:1. A portion of the material excavated from the waste rock dump would be used to cover an adjacent denuded area on the northeast side of the dump. The new waste rock dump slope and the disturbed area would be contoured to blend with the surroundings and ripped to a depth of 3 feet to encourage natural revegetation.

Another portion of the material excavated from the waste rock dump would be used to fill 210 linear feet of the southwestern portion of the Verdstone pit ramp. Luxcor would also reclaim about 1,000 feet of drill road and a ditch on the south side of the pit ramp by pulling side-cast material back into the road and ditch. The material used to reclaim the pit ramp, drill road, and ditch would be contoured to blend with the surroundings and ripped to encourage natural revegetation.

2.1.3.2 Phase Two

Upon closure of the mine, approximately one month of reclamation activities would begin at the site. The reclamation area would include all of new surface disturbance at the Project mine site (0.80 acre, as described in Table 2-1). In addition, 0.86 acre of the existing road to the raise would also be reclaimed. This road segment was built by a previous operator but the reclamation of this disturbance is included in the Project.

A portion of the Project mine site has been disturbed under approved Notice of Intent (Notice) AZA-34595. This Notice covered the Fancher waste rock dump and the entrance to the decline, which is included in the 0.80 acre of new disturbance (Table 2-1). This disturbed area would be used during the Project and reclaimed at the end of the mine life. Phase two of reclamation would total 1.93 acres. The Project would not include any reclamation activities for Verdstone Road outside the mine site gate and would also not include reclamation activities for Hovatter Road.

The proposed reclamation activities would include the removal of all equipment, temporary structures, buildings, trash, and debris. All water, air, and electrical lines would be removed. The closure of the decline and raise would consist of backfilling using waste rock from the Fancher waste rock dump. The closure of the road to the decline and raise would be backfilled using the material that was excavated during the road-widening.

Hard-packed surfaces would be scarified and contoured to promote revegetation, and water bars would be installed as necessary to divert runoff into natural drainages. Contoured and scarified surfaces would be seeded with a BLM-approved native seed mix. These reclamation activities would be in accordance with BLM Solid Minerals Reclamation Handbook H3042-1. When reclamation is complete, Luxcor would notify the BLM so that an inspection of the area can be made. Further detail on proposed reclamation can be found in the PO.

2.2 NO ACTION ALTERNATIVE

In accordance with CEQ requirements (40 CFR 1502.14(d)) and BLM guidelines (H-1790-1, Section 6.6.2), this EA evaluates the No Action Alternative. The objective of the No Action Alternative is to describe the environmental consequences that would result if the Proposed Action were not implemented. The No Action Alternative forms the baseline against which the impacts of all other alternatives can be measured.

Under the No Action Alternative, Luxcor would not develop the proposed Project. The No Action Alternative would result from the BLM's rejection of the PO. Luxcor would reclaim the disturbances that resulted from Project exploration, as required in Notice AZA-34595, for construction of the decline, which includes closing the adit, filling the portal excavation with waste rock, recontouring the road and remaining waste rock, and covering the disturbed area with stockpiled soil.

Table 2-3 presents the future and existing conditions of the Project operation components for the Proposed Action and the No Action alternatives.

Table 2-3. Comparison of Alternatives for the Proposed Project

Overview of Project Operations	No Action Alternative	Proposed Action
Hours of Operation	0000-2400	0100-2400 Monday–Sunday
Number of Employees on Site	0	During construction: eight workers per day During operation: four per shift (day)
Estimated Number of Truck Trips per Day	0	12 truck round-trips per day
Number of Dozers and Size	0	0
Number of Loaders and Size	0	One loader, 4–cubic yard bucket
Gallons of Water	0	4,000 gallons per week (obtained off-site from a private well)

Table 2-3. Comparison of Alternatives for the Proposed Project (Continued)

Overview of Project Operations	No Action Alternative	Proposed Action
Fuel Storage Tanks, Scales, Garages, Gates, Signs, Fences	None	Fuel Tank: 7,000 gallons Water Tank: 4,000 gallons 18 × 20–foot slab needed for raise Two gates and four signs needed No garages or fences
Tons of Rock Removed Per Day	0	200 tons per day
Noise Emissions	0	As allowed by MSHA
National Pollution Discharge Elimination System Permit	None	Covered under Construction General Permit AZG2008-001; Luxcor would obtain coverage under MSGP 2010 before mining operations begin
Daily Particulate Matter less than 10 microns in diameter (PM_{10}) Emissions	0	12.24 pounds (lbs)
Daily Mono-nitrogen Oxides (NO_X)Emissions	0	142 lbs
Daily Sulfur Dioxide (SO_2) Emissions	0	0.13 lbs
Daily Carbon Monoxide (CO) Emissions	0	137 lbs
Energy Consumption: Diesel Fuel	0	75 gallons per day
Energy Consumption: Electrical	0	0 (150 kW diesel-generated on-site)
BLM Bond Amount	None (under Notice: $19,130))	Bond estimated at $38,300
Daily Opacity Levels	0	Less than 10%
Biological Permits	None	Surveyed May 11, 2010. Biological Evaluation June 2010. Biological Evaluation revised January 2011.
Visual Needs (Obtrusion)	None	Surface lighting not required
Cultural Resources	None	60 acres and 3.5 miles of road surveyed May 25–27, 2010. Archeology Report July 2010. Further surveys of Hovatter Road is not necessary per BLM, December 2011.
Tribal Concerns	None	Consultation

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM CONSIDERATION

In the process of developing the PO, Luxcor considered various environmental constraints in relation to the placement and construction of facilities. These constraints included locations of known cultural sites, pre-disturbance, visual contrasts, and wildlife resources. In addition to environmental constraints, Luxcor also considered alternatives to the Project's Proposed Action. These alternatives included the following:

- Processing the ore by cyanide leaching. This alternative was dismissed because of concerns about possible pollution of groundwater and danger to wildlife.
- Mining the orebody by open pit methods. This alternative was dismissed because of the large amount of waste rock that would have to be removed and the attendant large surface disturbance.
- Processing the gold ore at an on-site permitted facility. This alternative was dismissed because of the requirement to develop a water source for processing the ore on-site. New disturbance would be required for processing facilities and tailings disposal. The private mill site to be used would require little new disturbance and is nearer proven water sources.

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3.0

AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This section describes the existing conditions of the natural and human environment that may be affected by the implementation of the Proposed Action or other alternatives. The Council on Environmental Quality (CEQ) regulations interprets the term *human environment* (40 CFR 1508.14) to comprehensively include the natural and physical environment and the relationship of people with that environment. The descriptions of the specific elements are quantitative where possible and of sufficient detail to serve as a baseline against which to measure the potential effects of implementation of the Proposed Action or other alternatives.

Based on internal scoping with the BLM specialists (March 26, 2010), a list of resource concerns and issues were identified (see Table 3-1):

Table 3-1. Internal Scoping: Resources with the Potential to be Impacted by the Project

Air Quality	Noise
Climate Change	Rangeland
Cultural Resources	Recreation
Environmental Justice	Socioeconomics
Hazardous Materials and Waste	Soils
Human Health and Public Safety	Travel Management
Invasive, Non-Native Plants	Vegetation
Land Use and Realty	Visual resources
Minerals and Geologic Resources	Wildlife (including migratory birds)
Native American Religious Concerns	

3.1.1 General Setting

The BLM is required to consider many authorities when evaluating a federal action. Those elements of the human environment that are subject to the requirements specified in statute, regulation, or executive order, and must be considered in all EAs (BLM 2008b), have been considered by BLM resource specialists to determine whether they would be potentially affected by the Proposed Action.

The Project mine site lies on the north and northwest side of Hill 1968 in the central Little Horn Mountains. The Project mine site is within a broad valley with low relief formed by Cementosa Wash and its tributaries. Cementosa Wash lies about 0.6 mile southwest of the existing adit (see Figure 1-1.2). Kofa National Wildlife Refuge (the Refuge) is approximately 4 miles west of the Project mine site. Higher topography between the mine site and the Refuge screen the Project mine site from the Refuge viewshed.

Hill 1968 and the Little Horn Mountains are covered by Malapai Basalt (approximately 1 million years old) lying uncomformably on altered dacite. The dacite is pale yellow to reddish in color as a result of alteration from a polylithic welded agglomerate lahar (approximately 32 million years old). The lahar alteration is yellow illite with hardness much less than the original lahar, but it has no preferred jointing and no argillic alteration and remains dense and hard. The dacite is underlain by the ore zone, a gently sloping vein of green quartz with black calcite and gold and silver mineralization (Luxcor 2010).

The climate is semi-arid, with hot summers and mild winters. The nearest reporting weather station is the Kofa Mine, about 17 miles southwest of the Project mine site at a similar elevation. The weather station reported a maximum temperature of 119 degrees F in July 1995 and a minimum temperature of 23 degrees F in January 1963. Average daily temperatures range from a low of 47 degrees F in January to 104 degrees F in July. Average annual precipitation is 6.94 inches, with about 2 inches of precipitation falling each winter, summer, and fall season and with about 1 inch falling in the spring. The highest recorded monthly rainfall was 7.55 inches, which fell in September 1976.

The adjacent Verdstone Mine was abandoned in the 1990s, leaving a waste rock dump covering about 3 acres with steep faces, an open pit with a steep haulage ramp, and an associated drill road and ditch. The dump, ramp, drill road, and ditch are not suitable for tortoise habitat in their present condition. The proposed reclamation would improve this area for proposed tortoise habitat mitigation.

The Affected Environment Chapter of this EA includes descriptions of the affected physical, biological, and human resources in the Project mine site. In addition to the mine site, the Project also includes a haul route to transport the mined ore to the mill site (see Figures 2.1-1–2.1-5), as described in Section 2.1.2, Access. The Affected Environment includes descriptions of those resources that would be potentially affected along the Project haul route.

The information presented is derived from data gathered during field investigations, previous operations, RMPs, and BLM and other agency files. In addition, information was obtained by personal, phone, or email communication with BLM and other federal, state, and local agency resource personnel.

3.2 AIR QUALITY

As directed by the federal Clean Air Act, as amended in 1990, the EPA established National Ambient Air Quality Standards (NAAQS) for six “criteria” pollutants at 40 CFR 50. The EPA adopted these standards to protect the public health (primary standards) and the public welfare (secondary standards). The six pollutants of concern are carbon monoxide, nitrogen dioxide, ozone, particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), sulfur dioxide, and Hazardous Air Pollutants. States are required to adopt standards that are at least as stringent as the NAAQS. The ADEQ has adopted ambient air quality standards that are identical to the NAAQS. The Project is within a NAAQS and ADEQ air quality attainment area; the nearest non-attainment area is the Phoenix non-attainment area, located approximately 80 miles east of the proposed Project mine site.

The Clean Air Act established the Prevention of Significant Deterioration Program. Program regulations divide the attainment areas into three areas of air quality. Class I areas, such as national parks and some wilderness areas, have pristine air, and almost no increases in air pollution are allowed. Class II areas allow moderate development, and Class III areas allow extensive development. For visibility and related impacts in Class I areas, the impact area of an emitting source is set by ADEQ regulations at 100 km. The impact area for Class II and III areas is 50 km. The nearest Class I areas are the New Water Mountains Wilderness and the Eagletail Mountains Wilderness, each approximately 10 miles (16 km) west and east of the Project haul route, respectively. The existing air quality in the vicinity of the Project

mine site and haul route is considered to be good to excellent, as measured by the ADEQ Air Quality Index program.

3.3 CLIMATE CHANGE

Climate change refers to the shifts in Earth's long-term (decades to millennia) weather patterns as a result of changes to the concentrations of greenhouse gases (GHGs) in Earth's atmosphere. A GHG is a gas that traps heat when emitted into the Earth's atmosphere. GHGs that would be emitted from the Project mine site's diesel-fueled generator and haul route truck exhaust include NO_x, SO_x and CO_2 emissions.

3.4 CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as implemented at 36 CFR Part 800, requires federal agencies to take into account the effects of their undertakings on historic properties (i.e., cultural resource sites that are eligible for listing on, or are listed on, the National Register of Historic Places [NRHP]). A database records search and a Class III field survey by qualified archaeologists were undertaken to determine the presence of cultural resources within the Project mine site.

3.4.1 Database Search

The records search included the area within a 1-mile radius of the current Project mine site. Two previous surveys had been conducted for mine expansion purposes (191-267.ASM, conducted in 1992 for the Verdstone mine and BLM-050-92-20, details not available).

Four sites were previously recorded within a 1-mile radius of the Project mine site and one site was previously recorded within the current Project mine site. All of the sites are affiliated with Native American cultures; AZ S:10:2(ASM) was recorded as two prehistoric rock rings.

General Land Office (GLO) plat maps for Township 1 South, Range 14 West were examined. Several unnamed roads are depicted on the 1928 and 1951 GLO maps of the Project area. These unnamed roads are not included in the Project and their use is not allowed without written permission from the authorized officer.

3.4.2 Field Survey

A June 2010 Class III survey was initiated by Luxcor and conducted by SWCA as a requirement of NHPA and the land managing agencies. The survey was completed on 126.9 acres on and surrounding the proposed Fancher mine site. In addition to the Fancher mine site, areas along the Fancher haul route were also surveyed. The survey was conducted under BLM Permit No. AZ-000411. The BLM was the lead agency on the project, and work was conducted under BLM Cultural Resources Project Record BLM-AZ-320-2010-009.

During the 2010 Class III survey, one new archaeological site (AZ S:10:12[ASM]), six isolated occurrences (IOs), and no previously recorded sites were identified. AZ S:10:12(ASM) is on BLM-administered land. Three of the IOs are of Native American cultural affiliation, and two are of indeterminate affiliation. AZ S:10:12(ASM), also called the Oakland Mine, and one IO is affiliated with historic mining. Verdstone Road currently runs through AZ S:10:12(ASM) and has impacted the site

within the roadway. Oakland Mine was reclaimed in the 1990s; however, artifacts and features are still present. AZ S:10:12(ASM) is of unknown eligibility for listing in the NRHP. AZ S:10:2(ASM) was not encountered during the June 2010 Class III field survey.

3.5 ENVIRONMENTAL JUSTICE

According to the BLM Land Use Planning Handbook (BLM Handbook H-1601-1), environmental justice is "[t]he fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group[s] should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and Tribal programs and policies." Executive Order 12898 (February 11, 1994) outlines agencies' responsibilities related to environmental justice. If disproportionately high and adverse impacts from a proposed action are anticipated, it is the responsibility of the BLM to work with the affected groups, including Native American Tribes to determine if the Project affects minority, low income communities and Tribal representatives. The affected environment related to Native American cultural sites appear under Section 3.5, Cultural Resources, while Native American concerns related to the Project appear in Section 3.12.

Table 3-2 identifies the percentages of environmental justice populations in Yuma and La Paz Counties versus the state of Arizona as a whole. As shown in the table, the Counties generally have lower percentages than the state as a whole.

Table 3-2. Population of Yuma and La Paz Counties and the State of Arizona by Race and Income

	Yuma County	La Paz County	Arizona
Population, 2009 estimate	196,972	20,012	6,595,778
White persons, 2009*	92.0%	82.6%	86.1%
Black persons, 2009*	3.4%	1.1%	4.4%
American Indian and Alaska Native persons, 2009*	1.7%	13.8%	4.9%
Asian persons, 2009*	1.3%	0.5%%	2.6%
Native Hawaiian and Other Pacific Islander, 2009*	0.2%	0.1%	0.2%
Persons reporting two or more races, 2009	1.4%	2.0%	1.8%
Persons of Hispanic or Latino origin, 2009^	57.0%	24.4%	30.8%
White persons not Hispanic, 2009	37.9%	61.8%	57.3%
Persons below poverty level, 2008	21.5%	26.1%	14.7%

Source: US Census Bureau 2010

Note: The percentages in this table are intended to compare the race and income status of the population of Yuma and La Paz Counties versus the State of Arizona as a whole; the sum of percentages in this table are not intended to equal 100%, as some of the categories are not mutually exclusive (e.g., *Persons of Hispanic or Latino origin* or *Persons below poverty level*).

*Includes persons reporting only one race.

^Hispanics may be of any race, so also are included in applicable race categories (e.g., white or black).

3.6 HAZARDOUS MATERIALS AND WASTE

Initial site visits conducted under the Notice AZA-34595 found no evidence of recognized environmental conditions or hazardous materials. Recognized environmental conditions, for the purpose of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Superfund Amendments or Reauthorization Act of 1986 are defined by the American Society for Testing and Materials as "the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property" (ASTM 2005). The Project mine site and haul route do not include any current recognized environmental conditions. No chemicals subject to the Superfund Amendments and Reauthorization Act and no extremely hazardous substances, as defined in 40 CFR 355 (National Archives and Records Administration 2009), in threshold-planning quantities would be used at the Project mine site or along the Project haul route. Planned hazardous materials at the Project mine site would include diesel fuel, solvents, lubricants, and ammonium nitrate/fuel oil (ANFO) blasting agent.

Recently-conducted Synthetic Precipitation Leaching Procedure tests (Xenco 2010, ACZ 2011), Acid-Base Accounting tests (Xenco 2010) and asbestos fiber counts (Fiberquant 2010) submitted to the ADEQ for determination of applicability for APP indicated that these materials are not acid generating and do not contain asbestos. The results showed that the ore and tailings are inert materials (no potential to generate acid or leach pollutants into the environment). The results of the tests also showed that the waste rock has the potential to leach arsenic above Aquifer Water Quality Standards, requiring management of the runoff.

3.7 HUMAN HEALTH AND SAFETY

Typical hazards of a mining operation include but are not limited to traumatic injury from large equipment or explosions, getting entangled in machinery, driving over steep embankments, slipping or falling on uneven ground or slippery surfaces, encountering high-voltage electricity, being exposed to chemicals or reagents while not wearing proper personal protective equipment, and being exposed to loud noises while not wearing hearing protection. The Project mine site would be periodically inspected by the MSHA and the Arizona State Mine Inspector to ensure compliance with all applicable safety regulations.

Because of these hazards, it is important to protect the public from interfacing with the mine operations. The mining operations area at the Project mine site would be closed to the public. Appropriate warning signs would be posted. A watchman would be on-site whenever workers are not present to warn the public of mining hazards. Two gates, one to the mine entrances and the other to the shop/office area and explosives storage area, would be locked after working hours.

The Project haul route is currently used for mining and recreation purposes. Hovatter Road south of the Yuma – La Paz County line and Verdstone Road are currently seldomly-used, unmaintained routes.

3.8 INVASIVE, NON-NATIVE PLANT SPECIES

Invasive species and noxious weeds are plant species that are not native to the area and that can cause ecological and economic problems if they become established in specific areas.

A biological field survey (SWCA 2011) indicated non-native species are present at the Project mine site and along the Project haul route. These include prickly Russian thistle (*Salsola tragus*), Asian mustard

(*Brassica tournefortii*), Buffelgrass (*Pennisetum ciliare*), London rocket (*Sisymbrium irio*), and Mediterranean grass (*Schismus* sp.).

3.9 LAND USE AND REALTY

Current land uses of the Project mine site include widely dispersed recreation and mineral exploration. Primary access to the Project mine site is from the I-10 interchange with Hovatter Road (Exit 53), about 90 miles west of Phoenix. Hovatter Road intersects with Verdstone Road 22 miles south of the interchange. The Project mine site is about 1 mile north up Verdstone Road from the Hovatter Road intersection. There is no other access to the Project mine site.

There are no right-of-way corridors, sites, or renewable energy authorizations within or nearby the Project mine site. The YFO maintains 10 designated utility corridors, none of which occur within 5 miles of the Project mine site (BLM 2010a).

Current land uses of the Project haul route include transportation, dispersed recreation, and utility corridors. Table 3-3 describes the designated rights-of-way that would intersect with the Project haul route.

Table 3-3. Project Haul Route: Intersections with Existing Rights-of-Way

Right-of-Way Type	Description	Location Along Haul Route*	Holder of Grant
Transportation	I-10	S 8 and S 17, T3N, R13W	Arizona Department of Transportation
Canal	Central Arizona Project Canal	S17,T3N, R13W	Bureau of Reclamation
Overhead transmission line	Power line	S 17, T3N, R13W	Arizona Public Service
Buried transmission line	Fiber Optic Cable	S 17, T3N, R13W	Sprint Communications
Buried pipeline	Oil and Gas	S 36, T3N, R14W	El Paso Natural Gas
Overhead transmission line	Power line	S 15, T2N, R14W	Southern CalEdison
Buried pipeline	Oil and Gas	S 15, T2N, R14W	El Paso Natural Gas

Source: National Integrated Land System (NILS) (BLM 2010b)

* S = Section, T = Township, R = Range, N = North, W = West

Luxcor would require the use of Hovatter Road for access to the mine in Yuma County. Additionally, Luxcor would require the use of Hovatter Road in Yuma and La Paz Counties to haul ore from the mine to the mill site. As previously discussed, Hovatter Road does not currently have a BLM-approved right-of-way. La Paz County has applied for a BLM right-of-way (BLM Case File No. AZA 35697) under Title V of FLPMA.

None of the land included in the Project area (mine site and haul route) is currently recommended by the YFO or LHFO RMPs as lands available for disposal (BLM 2010a, 2007).

In addition to BLM land, Hovatter Road crosses State Trust Land owned by the Arizona State Land Department (ASLD) in Section 36, Township 3 North, Range 14 West, for approximately 1 mile. Luxcor has applied for a right-of-way across this portion of State land under application 18-115503 (December 21, 2010). An existing pipeline intersects the Project haul route within this ASLD land, as shown in Figure 2.1-4 and Table 3-3 above.

3.10 MINERALS AND GEOLOGIC RESOURCES

There are three basic types of federal energy and mineral resources: leasable, locatable, and salable, as defined by federal laws, regulations, and legal decisions. No leasing activities occur in the area due to the low occurrence and potential for oil, natural gas, and carbon dioxide. The Project mine site lies within an area designated by the BLM as having high potential for locatable metallic minerals (BLM 2008).

The Project haul route also crosses through areas designated by the BLM as having a moderate and high potential for locatable metallic minerals (at the Fancher mine site and near the I-10 and Hovatter Road intersection). Both the Project mine site and haul route have been identified by BLM YFO as having moderate potential for salable minerals (BLM 2008).

3.11 NATIVE AMERICAN RELIGIOUS CONCERNS

The American Indian Religious Freedom Act of 1978 established national policy to protect and preserve for Native Americans their inherent right of freedom to believe, express, and exercise their traditional religions, including the rights of access to religious sites, use and possession of sacred objects, and freedom to worship through traditional ceremonies and rites. Specific Native American religious concerns, if any, would be identified as a result of the NHPA Section 106 cultural consultation.

3.12 NOISE

Current noise levels at the Project mine site and haul route are low. Variation in exposure to noise levels depends primarily on proximity to the roadways and mining activities as well as other noise-generating activities. Current noise at the Project mine site includes vehicle use of Verdstone Road, aircraft overflights associated with military training activities; overflights from private or commercial aircraft; and natural noise associated with the winds in the area.

Noise along the Project haul route includes vehicle use of Hovatter Road and I-10 traffic; vehicular use/maintenance of the gas pipelines located within the BLM utility corridor; helicopter and aircraft overflights associated with military training activities; overflights from private or commercial aircraft; and natural noise associated with the winds in the area.

3.13 RANGELAND

The Project mine site occurs within a designated grazing allotment (03022 Crowder-Weisser allotment). There are no livestock developments at the Project mine site. The Crowder-Weisser grazing allotment totals over 235,000 acres.

The Project haul route also occurs within the Crowder-Weisser allotment.

3.14 RECREATION

The prescribed Recreational Setting for the Project mine site is the Yuma East Undeveloped Special Recreation Management Area (BLM 2010a). The Project mine site is remote from population centers and receives little recreational use. The area is designated as a Dispersed Use Recreation Management Zone

(RMZ). Outstanding hunting and dispersed camping opportunities exist throughout the RMZ, which is part of Arizona Game and Fish Department Game Management Unit 41.

The Project haul route is also located in the Yuma East Undeveloped Special Recreation Management Area from the mine site north to the designated utility corridor. The approximately 6-mile portion of Hovatter Road from the BLM-designated utility corridor to I-10 is designated by the YFO as an Extensive Recreation Management Area (ERMA). The ERMA does not designate an RMZ because ERMAs are by definition areas that do not receive focused, specific recreation program management.

The portion of the Project haul route that would be located in the LHFO has been designated in the LHFO RMP as an ERMA (BLM 2007).

3.15 SOCIOECONOMICS

3.15.1 Population

The area in and around the Project—both the mine site and haul route—has limited to no population. There are no residences within 10 miles of the Project mine site. Workers are available from local communities, including Salome, Wenden, Quartzsite, and Tonopah.

3.15.2 Employment

The local economy would benefit from the approximately 15 jobs created by mining, ore hauling, and processing operations and from sale of supplies and services to the mine and mill. Mine operating expenses are expected to be about $8 million over the life of the mine—about $5 million for wages and benefits and $3 million for supplies and services. Mill operating expenses are expected to be about $1.8 million, about $0.7 million for labor and $1.1 million for supplies and services. The economy also benefits from the circulation and recirculation of dollars from mining within local communities through the purchase of goods and services by employees and suppliers, leading to the creation of non-mining–related jobs.

Equipment purchased for the mine and mill would add additional temporary jobs for manufacture or refurbishment, transport, and installation.

3.15.3 Services

The nearest school, health care services, and police and fire department are located in Salome, about 30 miles from the Project mine site. No water or electricity is currently provided at the Project mine site. Water for drilling and dust control would be trucked in from private wells. Electricity would be generated on-site.

3.16 SOILS

There is limited soil at the Project mine site. Soil removed for development of the existing waste rock dump under Notice AZA-34595 was stockpiled for reclamation. A total of 15.25 acres is included in the Project; of this, 0.80 acre would be new surface disturbance. Any removed soil would be added to the existing soil stockpile from Notice AZA-34595.The remaining 14.45 acres has been previously disturbed.

The soils found at the Project mine site and along the haul route belong to the soil order Aridisols (soils commonly found in dry environments that are low in organic matter and rich in deposited salts) and suborder Orthids (soils that are light colored, contain little organic matter, and have at least one diagnostic subhorizon) (BLM 2008). These soils are light brown, predominantly fine-grained sands and silty sands that can form sand dunes. They have a hyperthermic (hot) soil temperature regime and an aridic (dry) soil moisture regime; likely Rositas sand. Whether non-irrigated or irrigated, these soils have poor to very poor potential for rangeland or wildlife habitat. The sandy texture of the soil limits recreation development, and there is a high hazard of blowing soils. No BLM-designated sensitive soils exist at the Project mine site or along the haul route.

3.17 TRAVEL MANAGEMENT

The Project mine site is within the Yuma East Travel Management Area and is designated as limited to off-highway vehicle (OHV) use (BLM 2010a). "Limited to OHV use" is defined as limiting OHVs to existing roads, trails, and drivable washes; cross-country travel is not permitted.

Public use of Verdstone and Hovatter Roads is limited to recreation and mining. Mining trucks from the Rio del Monte mine use Hovatter Road to access I-10 and their delivery destinations. The paved segment of Hovatter Road and I-10 intersection is maintained by the Arizona Department of Transportation. As described in the Proposed Action, current maintenance of Hovatter Road from the Yuma–LaPaz County line to the town of Salome is conducted by La Paz County and consists of grading the roadway. La Paz County has applied for a BLM right-of-way to cover the maintenance Hovatter Road from the Yuma/La Paz County line to Salome, BLM Case File No. AZA 35697.

The portion of Hovatter Road in Yuma County is not currently maintained by BLM or Yuma County; Verdstone Road is also not currently maintained.

3.18 VEGETATION

The Project mine site is in the Arizona Upland subdivision of the Sonoran Desertscrub biotic community (Brown 1994). Dominant vegetation includes creosote bush (*Larrea tridentata* var. *tridentata*), burrobush (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), foothill paloverde (*Parkinsonia microphylla*), desert ironwood (*Olneya tesota*), saguaro (*Carnegiea gigantean*), ocotillo (*Fouquieria splendens*), ratany (*Krameria* sp.), teddy bear cholla (*Cylindropuntia bigelovii*), and plantain (*Plantago* sp.). Other species include wolfberry (*Lycium* sp.), globemallow (*Sphaeralcea* sp.), desert lavender (*Hyptis emoryi*), and blazing star (*Liatris* sp.).

The Project haul route begins and ends in the Arizona Upland subdivision of the Sonoran Desertscrub biotic community; however, the middle section of the haul route (approximately 10 miles) is located within the Lower Colorado River valley subdivision of the Sonoran Desertscrub biotic community (Brown 1994). Dominant vegetation is similar to that described above, but also includes hedgehog cactus (*Echinocereus* sp.), Christmas cactus (*Cylindropuntia leptocaulis*), barrel cactus (*Ferocactus wislizeni*), globe cactus (*Mammillaria* sp.), desert broom (*Baccharis sarothroides*), and velvet mesquite (*Prosopis velutina*). Xeroriparian species observed in ephemeral washes along Hovatter Road include catclaw acacia (*Acacia greggii* var. *greggii*), foothill paloverde (*Parkinsonia microphylla*), and desert ironwood (*Olneya tesota*).

3.18.1 Special Status Plant Species

The Endangered Species Act (ESA) of 1973, as amended, establishes a national program for the conservation and protection of threatened and endangered species of plants and animals and the preservation of their habitats. Section 7 of the ESA requires federal agencies to consult with the USFWS to ensure that the actions they authorize do not jeopardize the continued existence of a federally listed threatened or endangered species.

The USFWS 2010 list of federally listed, proposed, and candidate, plant species which may occur in Yuma and La Paz County were reviewed.

Protected native plants classified by the Arizona Department of Agriculture under the Arizona Native Plant Law (ANPL) (ARS §3-904) are present in the project area. This law includes four categories of protection and states that protected plants cannot be removed from any lands, including private lands, without permission and a permit from the ADA. Highly Safeguarded native plants are those species for which removal is not allowed except with an ADA scientific permit. Salvage Restricted native plants are those plants for which a salvage permit is required. Five species in this category were observed in the project area. The Salvage Assessed category includes those species that have sufficient value if salvaged and for which a salvage permit is also required. Plants in the Harvest Restricted category are protected because they are subject to excessive harvesting or overcutting as a result of the intrinsic value of their by-products, fiber, or woody parts, and a harvest permit is required. Additional information related to ANPL species can be found in the Biological Regulations Memorandum (SWCA 2011).

3.19 VISUAL RESOURCES

The FLPMA identifies “scenic values” as one of the resources for which the public lands should be managed (43 U.S.C. 1702), and states that public lands will be managed in a manner which will protect the quality of the scenic values of these lands (43 U.S.C. 1701). In response to this mandate, the BLM has developed the Visual Resource Management (VRM) system. BLM’s VRM objectives are described in the YFO and LHFO RMPs. These area-specific objectives provide the standards for planning, designing, and evaluating future management actions.

All YFO and LHFO BLM lands have been designated VRM Classes I through IV, with VRM Class I lands providing the most protection to scenic values and VRM Class IV lands providing the least protection. According to the YFO RMP, the Project mine site is within VRM Class II (BLM 2010a). No residents live nearby or have a view of the mine site and the mine site is not visible from Hovatter Road.

The YFO RMP classifies the area that includes the Project haul route as both Class II and Class III. The portion of the Project haul route that would be located within the LHFO RMP is located in an area that has been designated VRM Class III (BLM 2007).

VRM Classes II and III have the following objectives (BLM 1984):

- Class II VRM Objective: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
- Class III VRM Objective: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.

3.20 WILDLIFE

No riparian, wetland, or aquatic wildlife habitats are present in the vicinity of the proposed Project mine site; therefore, no wildlife species that are restricted to water-related habitats occur there.

Of the special habitat features (cliffs, sand dunes, snags, springs, reservoirs, rivers, marshes, lakes, and islands) and key habitat features (riparian habitats, sand dunes, mountain ranges, wildlife watering sites, braided-channel floodplains, and valley desert wash woodlands, abandoned mines, and natural caves) that are present in the YFO planning area, only the Fancher mine site and Verdstone underground mines would represent key habitat features at the Project mine site. No bats or bat roosts were identified at the Project mine site during biology surveys.

Common wildlife species that occur in the areas surrounding the Project mine site include desert bighorn sheep, collared peccary (*Pecari tajacu*), mule deer (*Odocoileus hemionus*), desert cottontail rabbit (*Sylvilagus auduboni*), blacktail jackrabbit (*Lepus californicus*), Gambel's quail (*Callipepla gambelii*), mourning dove (*Zenaida macroura*), white-winged dove (*Z. asiatica*), rock wren (*Salpinctes obsoletus*), Say's phoebe (*Sayornis saya*), northern mockingbird (*Mimus polyglottos*), Gila woodpecker (*Melanerpes uropygialis*), common raccoon (*Procyon lotor*), ringtail (*Bassariscus astutus*), American badger (*Taxidea taxus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), kit fox (*Vulpus macrotis*), tiger striped whiptail (*Aspidoscelis tigris*), zebra-tailed lizard (*Callisaurus draconoides*), Sonoran desert tortoise (*Gopherus agassizii*), western diamondback (*Crotalus atrox*), and regal horned lizard (*Phrynosoma solare*).

The Project mine site and haul route are located in bighorn sheep habitat and bighorn sheep may occur in these areas. Special and/or key habitat features used by bighorn sheep, including lambing grounds and migration corridors are present in the vicinity of the Project haul route in the Little Harquahala Mountains (BLM 2007 and 2008). Figure 2.1-5 illustrates the bighorn sheep's yearlong and sensitive habitats in the BLM LHFO RMP. Figure 2-6 of the BLM YFO RMP depicts habitat areas for bighorn sheep within the Desert Mountains and Palomas Plain Wildlife Habitat Area (BLM 2010a).

The Project mine site and haul route are located in two designated YFO Wildlife Habitat Management Areas (WHA): the Palomas Plain and Desert Mountains WHAs (BLM 2010a).

The Palomas Plain WHA is the largest unfragmented habitat in southwest Arizona for a myriad of wildlife, including bighorn sheep and mule deer. It contains braided channel floodplains and mixed cacti paloverde communities on rocky slopes and bajadas. The large, contiguous, unfragmented habitat is significant to the hunting community. This area is a potential reintroduction area for the endangered Sonoran pronghorn (BLM 2010a).

The Desert Mountains WHA provide important habitat for desert bighorn sheep, desert tortoise and other wildlife species that could not survive on the arid plains of lower elevations. Mountain ranges provide some of the best remaining bighorn sheep habitat in the southwest, with stable populations in several areas (BLM 2010a).

3.20.1 Special Status Species

The Endangered Species Act of 1973, as amended, establishes a national program for the conservation and protection of threatened and endangered species of plants and animals and the preservation of their habitats. Section 7 of the ESA requires federal agencies to consult with the USFWS to ensure that the actions they authorize do not jeopardize the continued existence of a federally listed threatened or endangered species.

The USFWS 2011 lists of federally listed, proposed, and candidate, species, which may occur in Yuma and La Paz County, were reviewed.

The USFWS identifies 11 species of animals that are threatened or endangered that may occur in Yuma County. The Project mine site does not occur within any designated critical habitat for federally listed species.

The USFWS identifies 10 species of animals that are threatened or endangered that may occur in La Paz County. The Project haul route does not occur within any designated critical habitat for federally listed species.

One (Sonoran population of the desert tortoise [*Gopherus agassizii*]) of the 13 Endangered Species Act–listed species for Yuma and La Paz Counties by USFWS have the potential to occur at the Project mine site. The Sonoran population of the desert tortoise is currently listed as 'candidate'.

In addition to species protected under the ESA, Sensitive-species lists for the YFO and LHFO were consulted to evaluate the potential for occurrence of BLM Sensitive species in the project area. According to the YFO RMP, BLM Sensitive species are taxa that are not already included as BLM special-status species under federally listed, proposed, or candidate species. BLM policy is to provide these species with the same level of protection as is provided for candidate species to ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed. The Sensitive species designation is normally used for species that occur on BLM-administered lands for which BLM has the capability to significantly affect the conservation status of the species through management.

Thirteen of the 35 species listed as Sensitive for YFO and LHFO planning areas by the BLM have the potential to occur at the Project mine site and along the haul route. Additional information and analysis related to BLM Sensitive species with the potential to occur in the vicinity of the Project can be found in the Biological Evaluation (SWCA 2011).

The 13 Sensitive species that could potentially occur at the Project mine site and/or along the haul route are the Sonoran population of the desert tortoise, Bendire's thrasher, banded Gila monster, big free-tailed bat, common chuckwalla, desert rosy boa, desert bighorn sheep, Leconte's thrasher, pallid bat, pocketed free-tailed bat, spotted bat, Townsend's western big-eared bat, and western mastiff bat.

3.20.2 Migratory Birds

No aquatic habitats (including stock ponds), or broadleaf deciduous riparian vegetation communities (e.g., communities containing willow, cottonwood, or ash, etc.), or potential migratory bird sites (e.g., agricultural fields, wetlands) occur at the Project mine site or along the haul route. Five species of migratory birds were documented during biological surveys; however, no active nests or special habitats were observed (SWCA 2011). Additional information and analysis related to migratory birds can be found in the Biological Regulations Memorandum (SWCA 2011).

3.20.3 The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (16 USC 668–668c), as amended, prohibits "taking" bald and golden eagles, including their parts, nests, or eggs, without a permit from the USFWS. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle . . . [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The BGEPA defines "take" as "pursue, shoot, shoot at,

poison, wound, kill, capture, trap, collect, molest, or disturb." The USFWS defines "disturb" under the BGEPA as: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Bald eagle (*Haliaeetus leucocephalus*) is unlikely to occur at the Project mine site or along the haul route due to the absence of perennial water and potential nesting sites. There are no potential nesting sites for Golden eagle (*Aquila chrysaetos*) at the Project mine site or along the haul route. However, potential nesting sites may occur along cliff ledges and rocky outcrops in the Project vicinity in mountainous areas. Golden eagles may also forage at the Project mine site and along the haul route.

3.21 Wild Horses and Burros

No wild horses or burros have been observed at the Project mine site or along the haul route or have been previously inventoried in the area. The Project mine site and haul route are not within the YFO Wild Horse and Burro Herd Area or Herd Management Area (BLM 2010a).

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4.0

ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

Chapter 4 discusses the environmental impacts that the implementation of the Proposed Action and No Action Alternative may have on the existing environmental conditions. The impact analysis is based on the resources inventory results and standard operations as outlined in the PO, combined with the professional judgments of the principal investigator for each resource. Actions that could impact the human environment (i.e., the natural and physical environment and the relationship of people with that environment) have been analyzed, and the conclusions drawn from analysis are described under the appropriate resource sections. The timeframe for potential environmental impacts are analyzed and disclosed as short-term (less than 1-year) and long-term (more than 3 years; or, beyond the life of the project).

Minimal environmental impacts to the natural and human environments are anticipated from the Proposed Action. At the end of this chapter, Table 4-2 presents a summary of potential impacts (no impact, potential impact and description) to elements of the natural and human environment. Elements of the natural and human environments that are marked as "potential impact" are discussed in detail in following sub-sections.

4.2 AIR QUALITY

4.2.1 Proposed Action Alternative

Regulated air pollutants that would be emitted at the Fancher mine site are particulates, fine-particulate particulates, emissions from stockpile loading operations and fixed internal combustion engines; and NO_x, SO_2, and CO from fixed internal combustion engines.

The BLM determines that the operator has the responsibility for ensuring that all operations are properly permitted with the appropriate agencies and that the operations are in compliance with all mobile and stationary source guidelines. The Arizona Office of Air Quality within the ADEQ has jurisdiction over air quality aspects of minerals and hard rock mining.

The Fancher PO for mine construction and operation calls for continued speed limit enforcement on all dirt roads and periodically spraying water on the haul route to reduce NO_x, SO_2, and CO emissions from fixed internal combustion engines and to reduce fugitive dust emissions.

Impacts to air quality would not be expected to exceed the current levels at the Project mine site because drilling and blasting would be conducted underground, allowing particulates to settle and be contained within the mine. All drilling would be conducted using wet drilling technology, eliminating almost all airborne particulates. Wet drilling also wets the rock to be blasted, greatly reducing airborne particulates. Air exhausted from the mine would contain almost no particulate matter (PM) or $PM_{10.}$ The potential for particulates in air exhausted from the mine would be well below the AQP threshold of 15 tons per year. If the Fancher PO is approved, the duration of the Project's impact on air quality would be approximately three years.

Since diesel engines used for power generation and air compression would exceed the combined 325-bhp AQP threshold, an application for a Class II AQP is being prepared for the Project mine site. This and the permit will be submitted to the BLM when received. Mine site emissions modeled using USEPA SCREEN3 model are shown in Table 4-1, below. Emissions at the Process Area Boundary are well below National Ambient Air Quality Standards.

Table 4-1. Project mine site air emissions

Type	Maximum Concentrations[1] (µg/m^3)	Process Area Boundary Concentration[2] (µg/m^3)	NAAQS[3] (µg/m^3)
Annual NO_x	19	0.25	100
24 hr. PM_{10}	6.8	1.3	150
Annual PM_{10}	1.4	0.26	n/a[4]
24 hr. $PM_{2.5}$	5.5	0.19	35
Annual $PM_{2.5}$	1.10	0.038	15
1 hr. SO_2	0.22	0.0029	200
24 hr. SO_2	0.089	0.0012	365
Annual SO_2	0.018	0.0002	80
1 hr. CO	235	3.0	40,000
8 hr. CO	165	2.1	10,000

[1] Maximum concentration conservatively calculated as the sum of the maximum predicted point source and maximum predicted area source concentrations.

[2] Process area boundary is assumed to be 20 meters from point sources and center of area source.

[3] National Ambient Air Quality Standards, USEPA Office of Air and Radiation 7/1/2011

[4]Annual PM10 standard (formerly 50 µg/m^3) was revoked 12/17/2006.

Source: Four Peaks Environmental and Engineering (2011)

Drilling would be conducted utilizing wet drilling technology and the area to be blasted would be wet. Air exhausted from drilling and blasting areas must travel over 450 feet from the underground drilling/blasting area to the surface. Dust levels are regulated by the MSHA. An authorized MSHA agent would inspect the Fancher mine site regularly to ensure that dust standards are not exceeded.

The proposed Project would result in an increase in the frequency of truck traffic on the Project haul route, which includes Verdstone and Hovatter Roads. This would result in an adverse impact to air quality, but would be short-term (up to three years) and would not exceed the current acceptable PM levels. Fugitive dust from haul trucks and other vehicle travel on the Project haul route would be minimized by watering and the application of a non-hazardous, non-toxic synthetic oil-based or polymer-based dust palliative. Any fugitive dust resulting from the use of the Project haul route would be short-term.

The mill site would generate particulates in crushing, screening and material transfers. A Class II AQP would be required for the mill because the bhp for the generator internal combustion engine will exceed the permit threshold, and permits are required for mills by rule. Regulated air pollutants that would be emitted by the mill are PM, $PM_{10,}$ NO_x, SO_2, and CO emissions from fixed internal combustion engines. Details on the mill site air emissions are provided in the PO. Spray bars would be installed at several points on the crushing equipment to further reduce fugitive dust emissions. After crushing and screening, the process is wet; thus generating no particulates.

The calculated mill emissions are uncontrolled. PM and PM_{10} emissions at the mill would be controlled by water sprayed at key material transfer points, which would lower actual emissions by about 90%. An AQP application is being prepared for the mill site. This and the permit will be submitted to the BLM when received.

Both the Project mine and mill sites are in remote locations where minor emissions would not affect human health or quality of life. Once mining operations are complete and the sites are reclaimed, the direct, short-term impacts to air quality would cease.

4.2.2 No Action Alternative

Under the No Action Alternative, the proposed Project PO would not be approved and the proposed mine site expansion would not occur. Only the areas disturbed under Notice AZA-34595 would be reclaimed, as described in Section 2.1.3. Other disturbed areas would not be reclaimed under the No Action Alternative, increasing the chances of wind-blown fugitive dust over the long term.

4.3 CLIMATE CHANGE

4.3.1 Proposed Action Alternative

The proposed Project (including the mine site, haul route and mill site) would use approximately 10 vehicles that emit GHGs, plus stationary diesel equipment consisting of two generators, a compressor, and a crushing/screening plant. The Project is anticipated to use 52,000 gallons of fuel each year.

The BLM requires that the proposed operator has the responsibility for ensuring that all operations are properly permitted with the appropriate agencies and that the operations are in compliance with all mobile and stationary source guidelines. The Arizona Air Quality Division within the ADEQ has jurisdiction over present and future sources of air pollution. Because of the small size of the Project, significant GHG emissions are not anticipated. The Project would have a contribution to emissions; however these emissions are not anticipated to significantly contribute to climate change on a regional or global scale.

4.3.2 No Action Alternative

The No Action Alternative would not impact climate change since no GHGs would be emitted under the No Action Alternative.

4.4 CULTURAL RESOURCES

4.4.1 Proposed Action Alternative

The survey of the Fancher Project mine site resulted in the discovery of one large mining site, the Oakland Mine (AZ S:10:12[ASM]), and six IOs. More archival investigation is necessary to determine eligibility of AZ S:10:12(ASM). This site may be eligible under NHPA Criterion D because it may yield information related to mining in the area. BLM recommends avoidance of site AZ S:10:12(ASM). AZ S:10:2(ASM) was destroyed by previous mining operations, and was not relocated.

4.4.2 No Action Alternative

No cultural resources would be impacted under the No Action Alternative.

4.5 ENVIRONMENTAL JUSTICE

4.5.1 Proposed Action Alternative

The proposed Project would not result in a change of status for environmental justice populations due to the remote location of the Project mine site. Because there are no low-income or minority populations in the vicinity of the proposed Project mine site, there would be no direct, indirect, or cumulative effects on environmental justice.

4.5.2 No Action Alternative

The No Action Alternative would not affect minority or low-income populations.

4.6 HAZARDOUS MATERIALS AND WASTE

4.6.1 Proposed Action Alternative

Based on review of the activities proposed and current hazardous and solid waste in the area, the Proposed Action would not result in 1) significant impact, create a potential public health hazard, or involve the use, production, or disposal of materials that pose a hazard to people or animal or plant populations; 2) contaminate a public water supply; 3) result in a risk of accidental explosion or release of hazardous substances; or 4) accelerate migration of pre-existing surface or subsurface chemical contamination. Hazardous materials concerns at the proposed Project mine site would include diesel fuel, solvents, lubricants, and ANFO.

Diesel fuel usage is expected to be about 75 gallons per day. Diesel fuel would be stored in an aboveground 7,000-gallon dual-containment tank with a leak detection system. Rock drill oil and other petroleum products and solvents would be stored in closed containers inside the storage building. Alternatively, drums would be placed in a high-density polyethylene (HDPE)–lined sump with sufficient capacity to hold 125% of the maximum volume of the largest container. Explosives would be stored inside a Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF&E)–approved magazines.

Refuse containers would be used for the collection of hazardous waste material and periodically transported to approved disposal sites. Soil contaminated by spills of these materials would be placed in drums and shipped to an approved disposal facility. A spill contingency plan is included in the PO. Because of the storage precautions and planned cleanup of any contaminated soil, there would be no significant environmental consequences. No environmental impacts would be anticipated from hazardous materials as a result of the proposed Project.

Recently-conducted Synthetic Precipitation Leaching Procedures test (Xenco 2010), Acid-Base Accounting tests (Xenco 2010) and asbestos fiber counts (Fiberquant 2010) submitted to ADEQ for determination of applicability for an APP indicated that these materials are not acid generating and do not contain asbestos. The results of subsequent tests showed wastewater has the potential to leach arsenic

above Aquifer Water Quality Standards, requiring management of the runoff. Runoff management would be achieved by collection in sediment ponds as specified in the SWPPP required for coverage under MSGP 2010. As such, no significant environmental consequences regarding hazardous materials and waste are anticipated.

4.6.2 No Action Alternative

The No Action Alternative would not affect hazardous materials.

4.7 HUMAN HEALTH AND SAFETY

4.7.1 Proposed Action Alternative

Due to the isolated location of the proposed Project mine site, the Proposed Action would not impact human health and public safety. In addition to protecting the Project area from potential vandalism or theft and to prevent potential injury, it is also important to protect the public from interfacing with the mine operations. Hazards of a typical mining operation include but are not limited to traumatic injury from large equipment, getting entangled in machinery, driving over steep embankments, slipping or falling on uneven ground or slippery surfaces, encountering high-voltage electricity, being exposed to chemicals or reagents while not wearing proper personal protective equipment, and being exposed to loud noises while not wearing hearing protection.

The mine workers and contractors for Luxcor would receive mandatory MSHA training with respect to mine hazards, as well as task-specific training related to their primary jobs. Visitors and vendors would receive site-specific training and hazard warnings prior to being granted access. Consequently, access to the area surrounding active mining would be signed to alert the public of the active mining status and hazards associated with entering the area. An existing gate across Verdstone Road would be closed and locked to discourage access the office/shop area and explosives magazines. A new gate would be installed on the road to the adit and raise to discourage public access to those areas. Berms would be constructed as necessary to discourage driving around the gates.

Blasting would be done deep underground, eliminating any hazard to the public from noise or flyrock. Access to the mine would be restricted to authorized persons only. Explosives would be stored in BATF&E–approved magazines in accordance with BATF&E rules in an area at the mine site located behind a locked gate not accessible to the public. Explosives would be used by experienced miners in accordance with MSHA and Arizona State Mine Inspector's rules and regulations. The mining contractor would be licensed by the State of Arizona Registrar of Contractors for commercial blasting. Because of the remote location of the mine site, vibration impacts to human health and safety would not occur.

The hazardous liquids (fuel, solvents, and lubricants) would be stored in aboveground tanks with dual-containment and leak detection/collection systems or in a locked storage facility. Because of the depth and limited size of the underground mining area, there would be no significant change in the surface topography as a result of mining.

Impacts to human health and safety on the proposed Project haul route are not anticipated, since use of the haul route would be subject to the existing traffic laws and regulations. A speed limit of 25 miles per hour would be required for haul trucks travelling the proposed Project haul route.

4.7.2 No Action Alternative

The No Action Alternative would not affect human health and public safety.

4.8 INVASIVE, NON-NATIVE PLANT SPECIES

4.8.1 Proposed Action Alternative

As necessary, Luxcor would initiate and maintain a BLM-approved program to control invasive species or noxious weeds occurring within the boundary of the proposed Project mine site. The approval of the Fancher PO may result in an expansion of invasive species to previously disturbed and undisturbed areas. The BLM coordinates with local governments to conduct an active program for control of invasive species. Annual monitoring and hoeing, along with site-specific mitigation, are applied as approval conditions for authorizations of surface-disturbing activities to prevent the spread or introduction of invasive, non-native species.

Reseeding activity included in the reclamation of the mine site would exclusively use BLM-approved, certified weed-free seed and straw.

4.8.2 No Action Alternative

The No Action Alternative would not affect invasive and non-native species concerns.

4.9 LAND USE AND REALTY

4.9.1 Proposed Action Alternative

The Proposed Action would impact the current land use at the mine site since the Fancher PO would result in a change in current land use. Currently, the mine site is disturbed but not in use. Due to the pre-existing disturbed nature of the mine site, the land use change from an abandoned mine to an operating mine would be negligible. Reclamation of the mine site would occur once mining operations are complete (approximately three years), and the resultant change would be a beneficial land use.

The authorized rights-of-way described in Table 3-3 in Chapter 3 include several pipelines that cross under Hovatter Road. The Project haul route would result in direct impacts to three existing El Paso Natural Gas pipelines since the depth of these pipelines would not support the ore hauling trucks. These pipelines are located within BLM-approved and ASLD approved rights-of-way (see Figures 2.1-3 and 2.1-4 and Table 3-3). The impact would occur when a haul truck crosses the pipelines. To mitigate the impact to these authorized uses, Luxcor would add additional fill to the roadway, as specified by El Paso Natural Gas (Refer to Section 4.25, Mitigation Measures). The additional fill would allow the ore trucks to cross the buried pipelines safely, thereby eliminating the impact to the existing right-of-way uses.

As described in Chapter 3, Section 3.9, Land Use and Realty, an approximately 1-mile stretch of the Hovatter Road Project haul route traverses ASLD land. An Application for Right-of-Way (18-115503) has been submitted to ASLD for the portion of the haul route that would be located on ASLD land. The haul route would not impact the fourth pipeline, which is located at this intersection on ASLD land since this pipeline is buried at a depth that El Paso Natural Gas says would not require fill.

4.9.2 No Action Alternative

Under the No Action Alternative, the existing land use at the proposed Project mine site would not be expanded and mineral development would not occur under the Fancher PO.

Impacts to existing rights-of-way along the Project haul route would not occur under the No Action Alternative, the exception being the underground pipelines described in Table 3-3. If the No Action were implemented, Luxcor would not provide additional fill on top of the buried pipelines.

4.10 MINERALS AND GEOLOGIC RESOURCES

4.10.1 Proposed Action Alternative

The Proposed Action would have a beneficial effect on locatable mineral exploration and development. The use of BLM lands would have a positive effect in generating jobs and revenues for the federal, state, and local economies. The Proposed Action would have a positive impact on the industry, resulting in increased stability and profitability of domestic companies.

Geological and mineral resources within the Project mine site would be directly impacted by the relocation of approximately 60,000 tons of ore and 500 tons of waste rock from the underground mine. The ore would be hauled to the off-site mill, while the waste rock would remain in the waste rock dump for use in reclamation. Approximately 22,000 ounces of gold and 100,000 ounces of silver would be extracted from the ore. Production of these valuable metals domestically would improve the U.S. balance of trade with other countries.

4.10.2 No Action Alternative

The No Action Alternative would not comply with the BLM's policy to manage lands for multiple uses including locatable mineral development on suitable lands. Approximately 60,000 tons of ore and 500 tons of waste rock would not be removed from the mine under the No Action Alternative. Gold and silver would not be produced and jobs and revenue from gold and silver production would not be created.

4.11 NATIVE AMERICAN RELIGIOUS CONCERNS

4.11.1 Proposed Action Alternative

The BLM initiated consultation with Arizona Tribes via a letter describing the Project and inviting the Tribes to comment on issues of concern to the Tribes on November 29, 2010. The BLM would initiate further coordination and consultation with interested local and regional tribes. Any tribal input received would be incorporated into the final environmental assessment[2].

4.11.2 No Action Alternative

The No Action Alternative would not affect Native American religious concerns.

[2] Tribal consultation ongoing

4.12 NOISE

4.12.1 Proposed Action Alternative

The Project mine site is very remote and the nearest neighbors are miles from the Project mine site. Thus, no impact from noise is expected. Noise created from the use of explosives would be contained in the underground mine and would not result in noise impacts.

The Project haul route currently experiences noise from both heavy and light vehicular traffic. The Project would result in approximately 12 additional truck round-trips to the roads included in the Project haul route (from the Project mine site to the mill site). Impacts from the increase in vehicular noise levels that would result from the Project's use of the haul route would be minor and similar to the current noise levels.

4.12.2 No Action Alternative

The No Action Alternative would not result in impacts to noise.

4.13 RANGELAND

4.13.1 Proposed Action Alternative

The Proposed Action would not result in impacts to livestock or rangeland activities. The disturbance of 0.80 acre out of the 235,000-acre Crowder-Weisser allotment would be a negligible and short-term impact to rangeland.

4.13.2 No Action Alternative

The No Action Alternative would not result in impacts to livestock or rangeland activities.

4.14 RECREATION

4.14.1 Proposed Action Alternative

The Proposed Action would not result in impacts to recreation. The ERMA surrounding the proposed Project mine site is open to limited recreational use as outlined in the YFO RMP. The proposed expansion areas at the mine site would expand the public exclusion area of the existing disturbance by 0.80 acre, which represents less than 0.01% of the total ERMA. There are no designated recreational sites or activities supported at the proposed Project mine site, therefore, no significant impacts to recreational resources would be anticipated as a result of the Proposed Action.

Impacts to recreation resulting from the use of the proposed Project haul route would be minimal and short-term, since the haul route is used infrequently and Project haul trucks would be required to obey all traffic laws and regulations.

4.14.2 No Action Alternative

Recreation would not be impacted by the No Action Alternative.

4.15 SOCIOECONOMICS

4.15.1 Proposed Action Alternative

Overall, the development of the proposed Project is likely to have positive socioeconomic impacts to the local area. The increased payroll, state and County taxes, and indirect employment effects would greatly benefit this region of the state.

4.15.1.1 Population

The development of the proposed Project is likely to cause minimal or no noticeable change to the populations around the Project. While it is the intent of Luxcor to hire from the local workforce, there may be some positions for which the desired skills are not likely to occur in the local communities. However, no impact to the population change has been identified.

4.15.1.2 Employment

The employment of up to 15 people from the Quartzsite, Salome, or Tonopah areas would represent a beneficial increase to the region, including Maricopa, LaPaz, and Yuma Counties. In addition, the indirect jobs discussed previously could also increase employment in the area. Unemployment is over 15% in some of the surrounding communities; therefore, any increase in employment would benefit the Counties as well as the local communities.

4.15.1.3 Services

As the maximum influx number of outside workers is expected be less than 5, the local housing markets of Quartzsite, Salome, Tonopah, and other areas would likely be able to absorb the small increase of workers and their families. These areas have large trailer areas for “snowbirds.” Therefore, sufficient spaces exist in the mobile home and RV parks around the area. No impact on housing is expected.

Because the intent is to use the local workforce to the extent possible, the increased demand for school services is not anticipated to be great. School-aged children of outside workers would be dispersed at different grades and levels within the local school systems. Thus, no class is expected to increase by more than two or three students. No impact on schools is expected.

Because the majority of workers are expected to be local, health care services are likely to be able to absorb any minor increased demand. No impact on health care services is expected.

The proposed Project would not have an adverse impact on the existing police or fire protection services. MSHA training for Project personnel for fire suppression may provide an increase in the number of trained personnel for the local Volunteer Fire Departments.

The small influx of outside personnel is not likely to have any impact on the existing water, sewer, and electrical services.

4.15.2 No Action Alternative

The No Action Alternative would have minor adverse impacts to socioeconomic resources, as up to 15 jobs would not be created and revenue from the services, supplies and materials to the Project would not be generated.

4.16 SOILS

4.16.1 Proposed Action Alternative

Based on review of the PO and current soil resources and conditions in the area, the Proposed Action would not cause significant impact to soils or erosion from project-related activities. Activities that would result in 1) appreciable loss of topsoil that endanger human health and safety or ecological conditions; 2) an increase of down-stream sedimentation and soil redistribution caused by grading or impervious surfacing; or 3) a change to the function of existing drainage facilities and watercourses are not allowed without written permission from the authorized officer.

Because the Proposed Action would use primarily only pre-disturbed land, direct impacts to soils would be limited to expansion of the waste rock dump, the new generator pad, new office/shop, and widening of the decline and raise roads, totaling less than 1 acre of new disturbance. The approval of the PO would result in the disturbance and alteration of undisturbed native soil and underlying minerals of approximately 0.80 acre. Impacts to native soil and minerals would result from the clearing of protective vegetation, excavation of materials, and loss of soil productivity. These impacts would be greatest during the mine construction. Impacts to soils would be minimal during operation. According to the PO, soil that is encountered would be salvaged and placed in the separate soil stockpiles for use in reclamation (see Section 2.1.3).

As the proposed Project would be located primarily within previously disturbed areas that have no soils or the soil has been disturbed or removed by previous operations, there would be no significant soil impacts at the mine site.

The haul route's dirt roads would be treated with a non-hazardous, non-toxic synthetic oil-based or polymer-based dust palliative that binds dust particles together and forms a "crust" on treated roads. In conjunction with the compaction by traffic, this crust would inhibit erosion.

The Project mine site is currently covered by the Arizona Pollutant Discharge Elimination System General Permit for Discharge from Construction Activities, Permit No. AZG2008-1. This permit requires runoff control and sediment discharge to off-site waterways. Luxcor has prepared a SWPPP as required by this permit. Luxcor has prepared a new SWPPP for mine operations and will submit a NOI for coverage under the EPA's MSGP 2010 once runoff control measures have been installed. A copy of the NOI will also be submitted to the BLM.

4.16.2 No Action Alternative

The No Action Alternative would not impact soils because the proposed Project mine site would not expand into the currently undisturbed 0.80 acre.

4.17 TRAVEL MANAGEMENT

4.17.1 Proposed Action Alternative

Access to the Project mine site would be available from I-10 and Hovatter Road. Road fill required at the existing BLM utility corridors during construction would result in short-term (less than 1 day) impacts to travel management due to the temporary access restrictions that would result during the filling of the roadbed. Once the filling is complete, no impacts to travel management at the utility corridor intersection would occur.

The Project's operation would result in an increase of current use of the Project haul route by 12 haul trucks per day travelling from the mine site to the mill site. This increase in traffic would result in a minimal impact to travel management. Since Hovatter Road (in La Paz County) is currently maintained by La Paz County and since Luxcor would maintain Hovatter and Verdstone roads in Yuma County, impacts to current road conditions would be minimized and mitigated through road maintenance. Luxcor would maintain approximately 3.5 miles of Hovatter Road and Verdstone Road from the Yuma County line to the mine site. As previously discussed in Section 3.17, La Paz County has applied for a right-of-way in order to legally continue to maintain Hovatter Road from the Yuma/La Paz County line to Salome.

Luxcor would place a speed limit of 25 miles per hour on haul trucks. Violators would be disciplined or terminated. Haul trucks would account for the approximately 12 round-trips per day, eight hours per day, during daylight hours only. This amounts to an average of three trucks per hour travelling on the haul route during operating hours.

Traffic on Hovatter Road is very low beyond Verdstone Road because of its remoteness and poor, unmaintained condition. Therefore, the Proposed Action would not result in major impacts to travel management.

4.17.2 No Action Alternative

The No Action Alternative would not affect travel management.

4.18 VEGETATION

4.18.1 Proposed Action Alternative

Because the proposed Project would be primarily developed on previously disturbed land, impacts to vegetation at the mine site would be limited to about 0.80 acre. This disturbance would be limited to the areas of the expansion of the waste rock dump, the new pad, and the decline and raise road widening. During operation of the mine, impacts to vegetation would be minimal.

The Project's haul route would not require new surface disturbance; thus, no impacts to vegetation are anticipated. For details on the Project's proposed reclamation, please refer to Section 2.1.3, Reclamation.

4.18.1.1 Special Status Plant Species

No ESA-listed or BLM Sensitive plant species or their habitats were observed at the mine site or along the haul route. Therefore, no impacts to any special-status plant species are anticipated as a result of the

proposed Project. However, plants protected under the ANPL were observed but impacts are not anticipated since the ground disturbing activities are only planned for areas that are already disturbed. If any ANPL-protected native plants are impacted, the result would be minor.

4.18.2 No Action Alternative

No impacts to vegetation would occur under the No Action Alternative.

4.19 VISUAL RESOURCES

4.19.1 Proposed Action Alternative

Surface activities in Project mine site would be subject to VRM Class II restrictions. Surface activities subject to these restrictions are the proposed activities outlined in Section 2.1, Proposed Action and in the PO.

During operations, the expanded mine site would result in a change to the existing visual character by removing vegetation and topsoil. However, these changes are anticipated to be minor when compared to the existing surface disturbance that has previously occurred at the mine site. With the exception of 0.80 acre, the Project mine site would be situated in or on top of the existing disturbance. The major disturbances would occur underground within the mine, and would not be visible at the surface. The Project would not result in a strong change to the existing visual character to the mine site's form, line, color, or texture.

The visual character of the facilities and stockpile areas of waste rock and topsoil would change slightly at their existing locations due to the proposed waste dump expansion and proposed reclamation, resulting in a moderate contrast (See Exhibit B, Visual Contrast Rating sheet). This change would have a short-term and adverse impact to the existing visual conditions. Depending on the recovery time of the vegetation used during reclamation, the impact to the existing visual conditions may extend several years beyond the proposed reclamation.

Concurrent and post-operations reclamation activities would partially mitigate the impacts of the change in existing visual conditions. Cuts and banks would be contoured to blend with the natural setting and disturbed areas would be resurfaced with stockpiled topsoil. All reclaimed surfaces would be graded to limit soil erosion and facilitate revegetation and re-establishment of appropriate drainage patterns. These reclamation activities would ensure that the post-operations mine would conform to the Class II VRM objective to retain the visual character of the landscape.

The use of the Project haul route would not result in changes to the existing visual character to the landscape's form, line, color, or texture along Verdstone or Hovatter Roads.

4.19.2 No Action Alternative

The No Action Alternative would maintain the current visual setting at the proposed Project mine site. Only the areas disturbed under Notice AZA-34595 would be reclaimed, as described in Section 2.1.3. Other disturbed areas would not be reclaimed under the No Action Alternative; thus current visual contrasts of the disturbed area would partially remain.

4.20 WILDLIFE

4.20.1 Proposed Action Alternative

The proposed Project construction and operation activities would not result in significant modification of surface soil properties, natural topography, wildlife habitat or the displacement of the majority of wildlife species inhabiting the Project mine site and haul route.

Mortality among common species of birds, reptiles, and rodents is expected to be limited in the Project mine site because of the current lack of vegetation within the Project mine site. Large-mammal species such as jackrabbits, coyotes, and kit foxes would likely evacuate the mine site once mining activities begin. The majority of birds occupying or using the mine site would disperse once mining activities begin. Along the haul route, wildlife mortality due to vehicle collisions is possible when wildlife are moving across the haul route; however, impacts would be minor due to the required low speed limits of trucks along the haul route.

The Project mine site and haul route are located in bighorn sheep habitat (see Figure 2.1-5 for LHFO bighorn sheep habitat and refer to Figure 2-6 in the YFO RMP). Noise disturbance from the Project mine site and traffic along the haul route may temporarily restrict movement of bighorn sheep between habitat areas. No direct impacts to bighorn sheep habitat is expected and impacts to lambing grounds are not expected since the Project haul route would be over a mile away from the sensitive bighorn sheep habitat. Impacts to bighorn sheep would be minor and would not result in a trend toward federal listing for any of these species.

Impacts to wildlife habitat are expected to be minor and short term. Reclamation of new surface disturbance (0.80 acre) as well as existing roads and mine features at the Project mine site will result in no long term impacts to wildlife habitat.

Once mining operations end, reclamation of the Project mine site and the decrease in human activity and presence would enable large-mammal species and birds to return to the Project mine site.

4.20.1.1 Special Status Species

The Project mine site is either clearly beyond the known geographic or elevational range for 11 of the 12 wildlife species listed by U.S. Fish and Wildlife Service known to occur in Yuma or La Paz Counties or it does not contain vegetation or landscape features known to support these species, or both. However, habitat for the Sonoran population of the desert tortoise is present within the Project mine site and along the haul route. Impacts are expected to be minimal due to the nature of the Project and would likely only involve minor disturbances to tortoises as they move throughout the region.

Thirteen of the 35 species listed as Sensitive by the BLM (five of the 20 species listed as Sensitive for the YFO planning area and 13 of the 25 species listed as Sensitive for the LHFO planning area) have the potential to occur at the Project mine site or along the haul route; however, impacts would be minor and would not result in a trend toward federal listing for any of these species.

The potential for these Sensitive species to occur is due to the presence of suitable habitat and/or known occurrences within the project vicinity. However, impacts are expected to be minimal due to the nature of the Project and would likely only involve movement or noise disturbance to individuals if and when they are present during construction or operation of the Project. For the remaining species, the Project mine site is either clearly beyond the known geographic or elevational range of these species or it does not contain vegetation or landscape features known to support these species, or both.

4.20.1.2 Migratory Birds

Migratory birds were identified at the Project mine site and along the haul route; however, no active nests were observed. If any migratory birds and/or their nests are present, the impact would be minor.

4.20.1.2 The Bald and Golden Eagle Protection Act

There are no potential nesting sites for bald or golden eagles at the Project mine site or along the haul route, therefore, no direct impacts to breeding habitat would occur. Minor impacts from noise disturbance may occur in their foraging areas.

4.20.2 No Action Alternative

No impacts to wildlife would occur under the No Action Alternative. Only the areas disturbed under Notice AZA-34595 would be reclaimed, as described in Section 2.1.3. Other previously-disturbed areas would not be reclaimed under the No Action Alternative. The potential beneficial impact to desert tortoise habitat that reclaimed areas proposed in the PO would offer would not occur under the No Action Alternative.

4.21 WILD HORSES AND BURROS

The Project mine site and haul route are located outside any Wild Horse and Burro Herd Area or Herd Management Area (BLM 2010a). Wild horses are not likely to frequent the area and no horses or burros have been seen at the proposed Project mine site or along the Project haul route. Construction of the proposed Project would not represent an impact to wild horses or burros.

4.22 SUMMARY OF IMPACTS

The following table summarized the impacts of the Proposed Action on the natural, cultural and human environment.

Table 4-2. Summary Evaluation of Elements/Resources of the Human Environment

Resource	Determination*	Rationale for Determination
Air Quality	NI	There would be little dust emitted from underground mining operations. Drilling is done wet and the area to be blasted is wet. Air exhausted from drilling and blasting areas has over 450 feet to travel to the surface, allowing for settling of most PM and PM_{10} inside the mine. PM and PM_{10} would be generated outside the mine by ore dumping to a stockpile, loading trucks from the stockpile and wind erosion of the stockpile. The ore stockpile would be kept small to minimize wind erosion. Mine dust levels are regulated by MSHA, which inspects regularly to ensure that particulate levels are kept below standards for personnel exposure. A Class II AQP will be required for the mine because the total horsepower for mine internal combustion engines will exceed the 325 bhp permit threshhold. The ADEQ will regulate mine air emissions to ensure that NAAQS are not exceeded. Dust from truck and other vehicle travel on the Project haul route would be controlled by watering and application of dust palliatives. The Project mine site and haul route are remote from inhabited areas. Minor emissions would not affect human health or quality of life.

Table 4-2. Summary Evaluation of Elements/Resources of the Human Environment (Continued)

Resource	Determination*	Rationale for Determination
Climate Change	NI	Because of the small size of the proposed Project, no significant GHG emissions are expected.
Cultural Resources	PI	All known archaeological sites would be marked and avoided. The BLM and Luxcor would monitor operations to ensure that these sites and other artifacts that may be discovered are not disturbed. If unknown artifacts are found where they might be affected during operations, operations would be stopped until the artifacts can be examined by an archaeologist and the BLM approves resumption of operations.
Environmental Justice	NI	Because there are no low-income or minority populations in the vicinity of the project site, there would be no direct, indirect, or cumulative effects on the Environmental Justice of this area.
Hazardous Materials and Waste	PI	Hazardous materials concerns at the proposed Project mine site would include diesel fuel, solvents, lubricants, and ANFO. Diesel fuel usage is expected to be about 75 gallons per day. Diesel fuel would be stored in an aboveground 7,000-gallon dual-containment tank with a leak detection system. Rock drill oil and other petroleum products and solvents would be stored in closed containers inside the storage building. Refuse containers would be used for the collection of hazardous waste material and periodically transported to approved disposal sites. Soil contaminated by spills of these materials would be placed in drums and shipped to an approved disposal facility. Explosives would be stored in Bureau of Alcohol, Tobacco, Firearms and Explosives–approved magazines in accordance with BATF&E rules. Explosives would be used by experienced miners in accordance with MSHA and Arizona State Mine Inspector's rules and regulations. The mining contractor would be licensed by the State of Arizona Registrar of Contractors for commercial blasting. Because of the storage precautions and planned cleanup of any contaminated soil, there would be no significant environmental consequences.
Human Health and Public Safety	NI	Access to the area surrounding active mining would be signed to alert the public of the active mining status and hazards associated with entering the area. An existing gate across Verdstone Road would be closed and locked to discourage access the office/shop area and explosives magazines. A new gate would be installed on the road to the adit and raise to discourage public access to those areas. Berms would be constructed as necessary to discourage driving around the gates. The hazardous liquids (fuel, solvents, and lubricants) would be stored in aboveground tanks with dual-containment and leak detection/collection systems or in a locked storage facility. Impacts to human health and safety on the proposed Project haul route are not anticipated, since use of the haul route would be subject to the existing traffic laws and regulations. A speed limit of 25 miles per hour would be required for haul trucks travelling the proposed Project haul route. The mine is registered with the Arizona State Mine Inspector's Office and the federal MSHA. Both agencies are responsible for inspecting the mine to ensure compliance with federal and state mine health and safety regulations. The mine is currently in compliance with all regulations.
Invasive, Non-Native Plants	PI	The Project would result in 0.80 acre of new disturbance, which may result in invasive, non-native plant introduction. The PO, once approved by BLM, would include mitigation for invasive, non-native plants such as reclamation using weed-free seeding.

Table 4-2. Summary Evaluation of Elements/Resources of the Human Environment (Continued)

Resource	Determination*	Rationale for Determination
Land Use and Realty	PI	The Project would be consistent with the BLM's Yuma Field Office Resource Management Plan (BLM 2010a) and the Lake Havasu Field Office Resource Management Plan (BLM 2007). Under the Mining Law, companies and individuals have the right to stake claims, explore and develop mineral resources on public lands, so long as they comply with land use and other relevant federal, state, and local laws and regulations. Under the FLPMA of 1976, the BLM is committed to a multiple use policy, under which mining is an acceptable use of public lands along with other uses such as grazing, timber harvesting, and recreational activities. The project is a permitted use under the approved BLM YFO RMP. Luxcor has chosen this site and wishes to restrict Project-related land use to existing disturbances. The Project haul route would cross existing BLM rights-of-way and existing ASLD rights-of-ways.
Minerals and Geologic Resources	PI	The proposed Project would have a beneficial effect on locatable mineral exploration and development. The use of BLM lands would have a positive effect in generating jobs and revenues for the federal, state, and local economies. The proposed Project would have a positive impact on the industry, resulting in increased stability and profitability of domestic companies.
Native American Religious Concerns	PI	BLM tribal consultation is in progress.
Noise	NI	Blasting would be done deep underground with no danger to the public or animals from flyrock or concussion. Access to the mine would be restricted to authorized persons only. Mine operations, including blasting, would be primarily underground, with little audibility on the surface. Haul trucks (and other equipment) would be equipped with approved mufflers or sound suppression devices. There are no fixed noise receptors (residences, camp grounds, etc.) within 10 miles of the mine or along the haul route.
Rangeland	NI	Impacts to rangelands are not anticipated due to the previously disturbed nature of the Project.
Recreation	NI	Only the mine operations area would be closed to the public to prevent theft and damage of mining equipment, and to prevent danger to the public from mining hazards. The public would continue to be able to use Hovatter and Verdstone Roads. Only the access roads to mine facilities, which are dead-end roads, would be closed to the public.
Socioeconomics	NI	Overall, the development of the proposed Project is likely to have positive socioeconomic impacts to the local area. The increased payroll, purchase of services, supplies and materials, state and County taxes, and indirect employment effects would greatly benefit this region of the state.
Soils	PI	Because the Proposed Action would use primarily only pre-disturbed land, direct impacts to soils would be limited to expansion of the waste rock dump, the new generator pad, new office/shop, and widening of the decline and raise roads, totaling approximately 0.80 acre. Impacts to native soil and minerals would result from the clearing of protective vegetation, excavation of materials, and loss of soil productivity. These impacts would be greatest during the mine construction. Impacts to soils would be minimal during operation. As the proposed Project would be located primarily within previously disturbed areas that have no soils or the soil has been disturbed or removed by previous operations, there would be no significant soil impacts at the mine site. Soil that is encountered would be salvaged and placed in the separate soil stockpiles for use in reclamation. Dirt roads would be treated with a dust palliative that binds dust particles together and forms a "crust" on treated roads. In conjunction with the compaction by traffic, this crust would inhibit erosion.

Table 4-2. Summary Evaluation of Elements/Resources of the Human Environment (Continued)

Resource	Determination*	Rationale for Determination
Travel Management	NI	La Paz County maintains Hovatter Road to the Yuma County line. Luxcor would maintain approximately 3.5 miles of Hovatter and Verdstone roads from the Yuma County line to the mine. Luxcor would place a speed limit of 25 miles per hour on haul trucks. Violators would be disciplined or terminated. Haul trucks would account for about 12 round-trips per day, eight hours per day, during daylight hours only. This amounts to an average of three trucks per hour travelling on the road during operating hours. Traffic on Hovatter Road is very light because of its remoteness and poor, unmaintained condition beyond the turn-off to the Project area. Public use and travel would not be restricted except behind the two closed gates at the Project mine site.
Vegetation	PI	SWCA completed a biological evaluation of the project area in June 2010 and January 2011. The mine site is either clearly beyond the known geographic or elevational range of the eight species listed by U.S. Fish and Wildlife Service known to occur in Yuma County, or it does not contain vegetation or landscape features known to support these species, or both.
Visual Resources (visual conditions)	NI	The Eagletail Mountains Wilderness Management Plan (BLM 1995) designates the nearest Wilderness as Class I VRM. This would not be impacted by the Project. Short term alteration to the visual setting of the project area could occur during the operational phase of the mine but would be returned to its natural setting during reclamation of the mine. The Project would not result in strong changes to the existing visual character of the project area, which is VRM Class II at the mine site, and VRM Class II and III along the haul route. The mine would be entirely underground except for a small waste rock dump and temporary surface facilities including mobile buildings for office and shop facilities and explosives magazines. These facilities are small and are located over 1 mile from Hovatter Road and are partially hidden by intervening topography from Hovatter Road. None of the mine facilities would interfere with visibility of the Eagletail Mountains Wilderness or the Kofa NWR.
Wildlife	PI	SWCA completed a biological evaluation of the project area in June 2010 and January 2011. The mine site is either clearly beyond the known geographic or elevational range of the eight ESA wildlife species listed by U.S. Fish and Wildlife Service known to occur in Yuma County, or it does not contain vegetation or landscape features known to support these species, or both. The Project mine site is either clearly beyond the known geographic or elevational range for 11 of the 12 ESA wildlife species listed by U.S. Fish and Wildlife Service known to occur in La Paz County or it does not contain vegetation or landscape features known to support these species, or both. Thirteen of the 35 species listed as Sensitive by the BLM (five of the 20 species listed as Sensitive for the YFO planning area and 13 of the 25 species listed as Sensitive for the LHFO planning area) have the potential to occur in the project area. Mitigation measures to compensate for Sonoran Desert Tortoise habitat would be determined by the BLM.

*** NI** = No Impact; detailed analysis not required. **PI** = Potential Impact; analyzed in detail in the EA.

4.23 CUMULATIVE EFFECTS ANALYSIS

This section analyzes the potential cumulative impacts from past, present, and reasonably foreseeable future projects, combined with the Proposed Action. Cumulative impact on the environment results from incremental impact of an action when added to other past, present, and reasonably foreseeable future

actions, regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impact can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Existing environmental conditions in the vicinity of the Proposed Action reflect changes brought about by long-term occupancy and use. Ongoing or planned activities that may contribute to cumulative impact include nearby past mining activities, activities related to the utility corridors, recreational activities, and traffic along I-10. Resources for which no impacts are identified are not discussed in the context of cumulative effects.

For this analysis, the cumulative assessment area has been defined as the central Little Horn Mountains. This generally covers an area approximately 5 miles in diameter around the proposed Fancher Project mine site; the cumulative assessment area for the Project haul route has been defined as Verdstone and Hovatter Roads. The cumulative assessment area is approximately 12,560 acres. The time frame of these effects is approximately 10 years (Project life is about three years).

The proposed Project would result in initiating mining operations at the mine site in northern Yuma County. Surface disturbance associated with this Project under this EA would allow for approximately 14.45 acres to be re-disturbed in an existing past mining area. New disturbance of about 0.80 acre would add cumulatively to short-term impacts in the Project vicinity, including impacts to soils, vegetation and wildlife, visual resources, and localized air quality. Reclamation would occur at the end of mining operations, which would aid in the long-term recovery of the Project mine site. Implementation of the proposed Project is therefore not expected to result in adverse cumulative impacts.

4.23.1 Description of Interrelated Projects

The BLM has determined that the primary activities that would contribute to cumulative impacts in the cumulative assessment area for the proposed Project would include past, present, and reasonably foreseeable future mineral exploration, development, expansion, and administrative land use activities, combined with the proposed Project. The following sections describe past, existing, and reasonably foreseeable future actions in the cumulative assessment area.

4.23.2 Past Actions

The proposed Project mine site has been disturbed since the 1930s. Original mining activities consisted of mine shafts, an abandoned open pit mine, waste rock dumps, drill roads, and cleared areas used for facilities associated with past mining.

The total disturbance footprint of the previous mining operation, including the Verdstone Road corridor, is estimated to be 39 acres, all on federal lands managed by the BLM.

According to the Fancher PO, the Hovatter Road corridor was developed in the 1950s under Revised Statue 2477. This enabled non-cross-country access for mining and prospecting and recreation in the Little Horn Mountains.

4.23.3 Reasonably Foreseeable Actions

Cumulative effects also include the effects of future state, local, tribal, and private actions that are reasonably certain to occur in the project area. Reasonably foreseeable future actions include continuation

or expansion of mineral exploration, recreation, and administrative land uses. The BLM is not aware of any specific activity that is reasonably certain to occur on these lands.

4.24 MONITORING

Monitoring of the Project mine site and haul route by Luxcor beyond the normal compliance monitoring conducted by the permitting agencies would include the following:

- Monitoring for noxious weeds as required by the YFO;
- Monitoring for water quality if required in the APP;
- Regular BLM inspections to ensure Luxcor is complying with mining laws and regulations and the standard stipulations and mitigation measures specific to this Project; and
- Regular inspections by MSHA and the Arizona State Mine Inspector to ensure Luxcor is complying with Mine Safety and Health Regulations.

4.25 MITIGATION

Land Use and Realty

Additional fill (not to exceed 20 feet in width) will be placed on top of the existing Hovatter Road roadbed at the El Paso Natural Gas buried pipeline locations to enable use of the truck haul route without impacting the buried pipelins within the existing right-of-ways.

Visual Resources

As described on the Visual Contrast Rating worksheet (Exhibit B), if the proposed Fancher Project PO is approved, mitigation measures would be implemented to reduce the impact on the current visual resource condition:

- Dead vegetation to be used in the reclamation of the Project shall be placed at random locations on the reclaimed portions during and after reclamation efforts;
- The ventilation fan housing at the top of the incline shall be painted dark grey to reduce contrast;
- Temporary structures should be removed following the Project's completion.

If the proposed Fancher Project PO is approved, the BLM will develop a list of additional mitigations, requirements, and standard stipulations as part of the final Finding of No Significant Impact (FONSI). If the No Action Alternative is selected, there will be no change to reclamation required under BLM Notice AZA-34595.

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CONSULTATION AND COORDINATION

The following persons and agencies contributed to the preparation of this EA.

CONSULTATION

U.S. Department of the Interior, Bureau of Land Management, Yuma Field Office
James T. Shoaff, Field Manager
Walter H. Todd, III, Geologist
Dave Daniels, NEPA Planning and Environmental Coordinator
Karen Reichhardt, Assistant Field Manager, Resource Specialist
Jeff Young, Wildlife Biologist
Candy Holzer, Land Law Examiner
Arturo Lopez, Realty Specialist
Tomas K. Jones, Archaeologist
Ron Morfin, Wilderness/Recreation Specialist
John Hall, Rangeland Management Specialist
Joseph Raffaele, Outdoor Recreation Planner
U.S. Department of the Interior, Bureau of Land Management, Phoenix District Office
Jeff Garrett, Geologist, Phoenix District
Arizona Game and Fish Department
Arizona State Historic Preservation Office

LIST OF PREPARERS

SWCA Environmental Consultants
Ryan Rausch, Project Manager
Cara Bellavia, Senior Environmental Planner
Charles Coyle, Senior Environmental Planner
Eleanor Gladding, Senior Biologist
Adrienne Tremblay, Senior Archaeologist
Chris Query, GIS Specialist
Heidi Orcutt-Gachiri, Technical Editor
Jessica Maggio, Document Formatter
Shari Bell, Document Formatter

Mining and Environmental Consultants
Fred Brost, President

Luxcor Gold, LP
Jim W. Clark, General Partner

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Exhibit A:

Legal Land Description for Proposed Project

Proposed Fancher Project Operations
Environmental Assessment DOI-BLM-AZ-C020-2010-0017
Exhibit A, Legal Land Description of Proposed Action Including the Mine Site and Access Roads

Gila and Salt River Meridian, Arizona

La Paz County

T. 3 N., R. 13 W.,
sec. 5, E½ (within);
sec. 8, E½ (within), SE¼SW¼ (within);
sec. 17, E½W½ (within);
sec. 19, SE¼ (within);
sec. 20, NW¼ (within);
sec. 30, NW¼ (within).

T. 4 N., R. 13 W., unsurveyed,
sec. 4, S½ (within);
sec. 9, E½ (within);
sec. 10, SW¼SW¼ (within);
sec. 15, W½ (within);
sec. 21, SE¼SE¼ (within);
sec. 22, W½ (within);
sec. 28, N½NE¼ (within), W½ (within);
sec. 32, SE¼SE¼ (within);
sec. 33, W½ (within).

T. 1 N., R. 14 W.,
sec. 4, W½W½ (within);
sec. 9, W½ (within), SW¼SE¼ (within);
sec. 15, SW¼ (within);
sec. 16, NE¼ (within), NE¼SE¼ (within);
sec. 22, E½ (within), NE¼NW¼ (within);
sec. 26, W½ (within);
sec. 27, NW¼NW¼ (within);
sec. 35, E½ (within), NW¼ (within).

T. 2 N., R. 14 W.,
sec. 2, NE¼ (within), SW¼ (within), NW¼SE¼ (within);
sec. 3, SE¼SE¼ (within);
sec. 10, NE¼ (within), S½ (within);
sec. 15, NW¼NW¼ (within);
sec. 16, E½ (within), SE¼SW¼ (within);
sec. 20, SE¼SE¼ (within);
sec. 21, NE¼ (within), W½ (within);
sec. 29, E½ (within);
sec. 32, E½ (within);
sec. 33, SW¼SW¼ (within).

T. 3 N., R. 14 W.,
sec. 25, SE¼NE¼ (within), SE¼ (within);
sec. 35, SE¼ (within);
sec. 36, W½ (within).

Yuma County

T. 1 S., R. 14 W., partially surveyed,
sec. 1, W½W½ (within);
sec. 2, NE¼NE¼ (within);
sec. 3, S½ (within);
sec. 4, SE¼SE¼ (within);
sec. 9, E½E½ (within);
sec. 10, N½ (within), S½ (within);
sec. 11, NE¼ (within), S½ (within);
sec. 12, NW¼NW¼ (within).

Cholzer; CLHolzer, ALopez; 4/18/2011; AZA_3459501_EA_ExhB_LLD

Exhibit B:

BLM Visual Contrast Rating Worksheet for Proposed Project

UNITED STATES
DEPARTMENT OF THER INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date: November 3, 2010
District: Colorado River District
Resource Area: Yuma Field Office
Activity (program) Mining

SECTION A. PROJECT INFORMATION

1. Project Name Fancher Project	4, Location Township T. 1 S.	5. Location Sketch See Attached
2. Key Observation Point Hovatter Road	Range R. 14 W.,	
3, VRM Class II	Section 10	

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	FG = MG= Rough, jagged, complex BG =	FG = MG = patchy, some vertical ocotillo BG =	FG and MG = linear, geometric BG =
LINE	FG and MG = Rugged, complex, some bold vertical mountains, undulating BG =	FG = MG = undulating BG =	FG and MG = horizontal band of road BG =
COLOR	FG = MG and BG = red, tan, gray, black	FG = MG = green, yellow, tan BG =	FG and MG = light tan road BG =
TEXTURE	FG = MG and BG = Coarse	FG = MG = medium, uneven, stippled BG =	FG and MG = smooth and directional BG =

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	FG and MG = Same BG =	FG = MG = Same BG =	FG and MG = Same BG =
LINE	FG and MG = Same BG =	FG = MG = Same BG =	FG and MG = Same BG =
COLOR	FG and MG = Same BG =	FG = MG = Same BG =	FG and MG = Same BG =
TEXTURE	FG and MG = Same BG =	FG = MG = Same BG =	FG and MG = Same BG =

1. DEGREE OF CONTRAST		FEATURES												2. Does project design meet visual resource management objectives? |x| Yes || No (Explain on reverse side)
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	3. Additional mitigating measures recommended? |x| Yes || No (Explain on reverse side)
ELEMENTS	Form				X				X				X	Evaluators' Names — Date
	Line				X				X			X		Tom Jones — 11/03/2010
	Color				X				X				X	Arturo Lopez — 11/03/2010
	Texture				X				X			X		Buzz Todd — 11/03/2010

SECTION D. (Continued

Comments from Item 2.

Project appears to meet visual resource management objectives.

Additional Mitigating Measures (See item 3)

If the project is going to include some reclamation of the roads, then the dead vegetation needs to be placed in random locations on the reclaimed portions during and after the reclamation effort.

Temporary structures should be removed following the project's completion.

The temporary structure constructed at the top of the incline should be painted dark gray to reduce contrast.

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