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Bureau of Land Management**

**Preliminary Environmental Assessment
DOI-BLM-NV-W010-2014-0034-EA
January 2015**

**Newmont Mining Corporation
Lone Tree Mine Expansion
Brooks Project**

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LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
amsl	above mean sea level
ANFO	ammonium nitrate and fuel oil
ARM	Ambient Ratio Method
ARPA	Archaeological Resources Protection Act
AUM	animal unit months
BAPC	Bureau of Air Pollution Control
BAQP	Bureau of Air Quality Planning
BLM	Bureau of Land Management
BMP	best management practices
CAA	Clean Air Act
CESA	Cumulative Effects Study Area
CFR	Code of Federal Regulations
CO	carbon monoxide
CO ₂	carbon dioxide
DNA	Determination of NEPA Adequacy
DOT	Department of Transportation
EA	Environmental Assessment

EPA	Environmental Protection Agency
ESA	Endangered Species Act
°F	degrees Fahrenheit
FLPMA	Federal Land Policy and Management Act of 1976
GHG	Green House Gases
HAP	hazardous air pollutants
HLF	heap leach facility
IM	Instruction Memorandum
MBTA	Migratory Bird Treaty Act
MDBM	Mount Diablo Baseline and Meridian
MOU	memorandum of understanding
MSHA	Mine Safety and Health Administration
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Air Pollutants
NHPA	National Historic Preservation Act
NHT	National Historic Trails
NNHP	Nevada Natural Heritage Program
NO _x	nitrous oxide
NO ₂	nitrogen dioxide
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes

NSAAQA	Nevada State Ambient Air Quality Standards
NSPS	New Source Performance Standards
OCTA	Oregon-California Trails Association
OISA	Overburden / Interburden Storage Area
PM _{2.5}	particulate matter 2.5 microns in aerodynamic diameter, or smaller
PM ₁₀	particulate matter 10 microns in aerodynamic diameter, or smaller
PFS	process fluid stabilization
POO	Plan of Operations
Project Area	Brooks Project Area encompassing approximately 792 acres
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RFFA	reasonably foreseeable future actions
ROD	Record of Decision
ROW	right-of-way
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure (Plan)
SSL	site-specific levels
SWPPP	Storm Water Pollution Prevention Plan
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WRD	waste rock dump
µg/m ³	micrograms per cubic meter

1.0 Introduction

1.1 Identifying Information

1.1.1 Title, EA Number, and Project Type

Title: Newmont Mining Corporation – Lone Tree Mine Expansion Brooks Project

NEPA Number: DOI-BLM-NV-W010-2014-0034-EA

Type of Project: Precious Metals

1.1.2 Location of the Proposed Action

The proposed Lone Tree Mine Expansion Brooks Project (Brooks) is located approximately 1.5 miles southwest of the current Lone Tree Mine plan of operations (POO) boundary. The Brooks project is located approximately 28 miles east-southeast of Winnemucca, and approximately 6.5 miles west of Valmy in Humboldt County, Nevada. The general location of the Brooks project is shown on Figure 1.

The approximately 792-acre Brooks Project Area (Project Area) is located on public lands administered by the Bureau of Land Management Winnemucca District, Humboldt River Field Office (BLM) and is located within portions of Township 34 North, Range 42 East (T34N R42E), sections 21, 22, 27, and 28, Mount Diablo Baseline and Meridian (MDBM). For the purposes of this document, the Project Area is defined as the modified POO boundary plus the haul road and fence line.

The Project Area is currently accessed from Interstate-80. The Project Area, land status, and access roads are shown on Figure 2.

1.1.3 Name and Location of Preparing Office

This Environmental Assessment (EA) is being prepared by the following BLM office:

Winnemucca District, Humboldt River Field Office

5100 E. Winnemucca Blvd.

Winnemucca, Nevada 89445

1.1.4 Project Serial Number

The Proposed Action presented in this EA is based on the recently submitted plan of operations modification, *Plan of Operations Amendment, Lone Tree Mine* (Newmont 2014) (Plan of Operations), BLM File Serial Number NVN-65325.

1.1.5 Applicant

Development of the Brooks project as described under this EA is proposed by Newmont USA Limited doing business as Newmont Mining Corporation (Newmont).

1.2 Overview

1.2.1 Site History

In 1990, Santa Fe Pacific Gold (now Newmont Mining Corporation) initiated mine-related excavation at the Lone Tree Mine on private land with a planned mine life of 9 years. In 1993, Santa Fe Pacific Gold submitted a POO to BLM to expand onto public lands. The Record of Decision (ROD) for the *Final Environmental Impact Statement, Lone Tree Mine* (Lone Tree EIS), was signed on October 15, 1996. The Lone Tree Mine POO extended the mine life by approximately 7 years, to 2006. After 2006, the Lone Tree Mine entered into care and maintenance with residual heap leach processing. In 2011, Newmont began a heap leach reprocessing project to improve gold recovery results.

1.3 Purpose and Need for Action

The BLM's purpose for the Federal Action is to provide Newmont the opportunity to expand its mining operations and associated infrastructure within the Project Area as defined in section 1.1.2.

The need for the action is established by the BLM's responsibility under Section 302 of the Federal Land Policy and Management Act of 1976 (FLPMA) and the BLM Surface Management Regulations found at 43 Code of Federal Regulations (CFR) §3809, to respond to a mining and exploration plan of operations and to take actions as necessary to prevent unnecessary or undue degradation of the public lands.

1.4 Decision to be Made

The decision the BLM would make based on this EA includes the following: whether or not to approve the proposed Plan of Operations to authorize the mining and exploration activities without modifications or additional mitigation measures; approval of the Plan of Operations with additional mitigation measures that are deemed necessary by the BLM; or deny approval of the Plan of Operations and not authorize the mining and exploration activities if it is found that the proposal does not comply with the 43 CFR §3809 regulations and the FLPMA mandate to prevent unnecessary or undue degradation.

1.5 Scoping, Public Involvement, and Issues

A scoping process was conducted in order to determine the scope of this environmental analysis. Internal scoping that involved the BLM staff identified resources that may require analysis. The BLM staff then reviewed existing National Environmental Policy Act (NEPA) documents in the project vicinity and began preparing a Determination of NEPA Adequacy (DNA) for the Proposed Action. On September 17, 2014, a draft version of the DNA was released for public review and input. During and after the 30-day public review period, further internal coordination occurred within BLM. Ultimately, the decision was made to forgo the use of a DNA and prepare this EA. External scoping issues that were identified during the public review of the draft DNA have been included in this section. The following issues were identified as needing to be evaluated in this EA:

- What are the impacts to ambient Air Quality from the Proposed Action, with regard to criteria pollutants, Hazardous Air Pollutants (HAP), Green House Gases (GHG), Particulate Matter 10 microns or smaller (PM₁₀), and Particulate Matter 2.5 microns or smaller (PM_{2.5})?
- How would the Proposed Action impact cultural resource sites?
- What are the potential impacts to the California National Historic Trail and its setting?
- How would the Proposed Action affect migratory birds or their habitat?
- How would the Proposed Action affect Sensitive Species or their habitat, including bats, raptors, migratory birds, and plants?
- How would the Proposed Action affect general wildlife, including pronghorn antelope and mule deer use of the area? Would habitat fragmentation affect migration?
- What vegetation communities would be affected by Proposed Action?

The following issues were identified during scoping as potential issues of concern. After further review and consideration, it was determined that detailed analysis would not be required given the rationale provided below:

- Are invasive, nonnative species present in the Project Area? How might invasive, nonnative species expand from project-related activities?

Invasive, nonnative species make up approximately 5 percent of the Project Area. Newmont has developed a Weed Management Plan that proposes to minimize the extent and impact of all weeds, including invasive, nonnative, and noxious species. Based on the implementation of this plan as an environmental protection measure in the Proposed Action, introduction or spread of invasive, nonnative species is not an issue requiring analysis.

- How would the Proposed Action affect Animal Unit Months (i.e. forage available for livestock) and range improvements for livestock permittees?

No livestock range improvements would be affected by the Proposed Action. The proposed Plan of Operations boundary fence would exclude approximately 660 acres of forage from livestock use in the Pumpnickel allotment and approximately 695 acres from use in the North Buffalo allotment. The Pumpnickel Valley allotment is administered by Winnemucca District, while the North Buffalo allotment is administered by the Battle Mountain District. The amount of forage involved does not raise this resource to a level requiring analysis. Any necessary coordination with permittees would be conducted by the administering office.

- How would the Proposed Action affect existing soil conditions? How would biological soil crust be affected by the proposed action?

Growth medium would be stockpiled and maintained for use during reclamation. Biological crusts are not known to be present in the Project Area, and therefore, are not considered an issue.

- How would mineral resources be affected by the Proposed Action?

Approximately 10.5 million tons of material would be mined from the Brooks Pit. Approximately 2.3 million tons would be heap leach ore, while the other 8.2 million tons would be placed in the overburden/interburden storage areas. The recovered metals would be an irretrievable commitment of resources. Considering the precious metal resources available throughout northern Nevada, this commitment of resources would not be an issue requiring detailed analysis.

- How would the public travel around/through the area be affected, and for how long?

Public travel along one two-track road would be restricted by the Proposed Action. Existing alternate routes around the proposed fence line would be available for public use.

- What are the socioeconomic impacts of the No Action Alternative? How long would economic impact to the community from shut down be deferred under the Proposed Action? What would those impacts be?

Under the No Action Alternative, the POO would not be authorized and the Brooks project would not be constructed. Current personnel would either be laid off or absorbed in other Newmont mining operations in the vicinity. While all jobs are important to the local economies, the effects of the No Action are not expected to be felt in either the short or long term. The Proposed Action would be expected to

continue to employ approximately 50 persons for the duration of the three-year mine life.

- How would impacts to Dark Skies be minimized during implementation of the Proposed Action?

Newmont anticipates the work schedule would be 10 hours per day, 4 days per week, and 52 weeks per year. The vast majority of operations are planned to be conducted during daylight hours, and therefore, impacts to Dark Skies would be minimized. Furthermore, the environmental protection measures incorporated into the Proposed Action would shield and direct any light necessary, thereby eliminating the need to analyze Dark Skies in detail.

- Would the Proposed Action affect any spiritual or other Native American values?

On July 23, 2014, formal consultation letters were sent to the Battle Mountain Band Tribe and Fort McDermitt Tribe. Additionally, an email soliciting consultation was sent to the Battle Mountain Band Tribe on July 29, 2014. Through previous consultation (on August 15, 2013 and May 12, 2014) for other NEPA projects, the Battle Mountain Band Tribe has expressed that mining projects not affecting prehistoric cultural sites are generally not of concern. The Proposed Action would not affect any prehistoric cultural sites, and BLM did not receive a response from either tribe. Based on previous consultation and lack of prehistoric sites, no Native American religious concerns are expected. The Battle Mountain Band Tribe and Fort McDermitt Tribe will receive another opportunity to consult as a part of this preliminary EA process.

- How would the Proposed Action affect water quantity?

No water use beyond what is currently permitted has been proposed and mine dewatering would not be needed to support the Brooks project. This assessment is based on the numerical groundwater flow model developed to simulate groundwater conditions at the Lone Tree Mine and surrounding area (Itasca 2013). The numerical model indicated that the pit would not need to be dewatered, based on the expected maximum depth of the pit at 4,650 feet National Geodetic Vertical Datum of 1929. This maximum pit depth is approximately 200 feet above the highest known water table. Further, a pit lake is not expected to form in the Brooks Pit after water-level recovery of the Lone Tree Mine. Therefore, water quantity would not be affected by the Proposed Action.

- How would the Proposed Action affect water quality?

Groundwater is not anticipated to be affected because the Proposed Action would not intercept the known maximum water table. Surface drainages would be protected by diversion features and sediment basins constructed around project disturbances. Based on use of the existing Lone Tree Mine Stormwater Pollution Prevention Plan, groundwater monitoring requirements in the Water Pollution Control Permit, and the proposed environmental protection measures no impacts to water quality are expected.

- Would the Proposed Action have the potential to generate acid rock drainage?

The Brooks deposit consists of structurally and stratigraphically controlled oxide mineralization hosted within Pennsylvanian to Permian Havallah Sequence. The waste rock produced would be net neutralizing and is not expected to generate acid. Leachable constituents are present in very low concentrations, and would release quickly under saturated conditions, or over time under unsaturated or vadose conditions. As a result, waste rock would be managed as a single, non-Potentially Acid Generating unit with random placement in the Overburden/Interburden Storage Areas (OISA). This assessment is based on the information documented in the waste rock characterization study (Newmont 2012a).

- Would the Proposed Action affect wild horses or burros, and/or would the Proposed Action affect any Herd Management Areas?

The project is not within a Herd Management Area and no wild horses or burros are known to inhabit that area of the District, and therefore, wild horses and burros would not be affected by the Proposed Action.

- How would the Proposed Action affect the existing pit lake at the Lone Tree Mine?

The BLM understands the importance of maintaining good water quality during and after mining operations. The Lone Tree EIS ROD states, “In the event water quality problems are identified in surface, groundwater, or pit lake water, the Lone Tree Mine would evaluate for potential source, and develop and implement mitigation measures acceptable to NDEP and the BLM.” Poor water quality has been identified in the pit lake at the Lone Tree Mine, and Newmont has remained in compliance with the ROD by treating the lake with lime. This treatment method is reviewed by Newmont, NDEP, and the BLM regularly with the intent of finding the most effective treatment. For this specific Proposed Action, the implementation of the Brooks project would have no effect on the pit lake, nor would the pit lake have an effect on the Brooks

project. These actions are not related, and therefore discussion of the pit lake is outside the scope of the proposal.

2.0 Proposed Action and Alternatives

2.1 Description of the Proposed Action

2.1.1 Proposed Action Summary

The proposed Brooks project includes construction, operation, reclamation, and closing of an open-pit surface oxide resource located approximately 1.5 miles southwest from the existing Lone Tree Mine heap leach pad (Figure 3 and Figure 4). The project includes modifying the POO boundary to include approximately 792 acres. For the purposes of this analysis, the Project Area is the modified POO boundary plus the haul road and fence line. The existing heap leach pad and ancillary support facilities at Lone Tree Mine would be used within their currently permitted capacities. The proposed Project would include the following major components:

- One open pit (the “Brooks Pit”);
- Three overburden/interburden storage areas (OISA);
- Exploration;
- Laydown areas;
- Relocation of an existing lime silo;
- Installation of an expanded perimeter fence;
- Storm water diversion ditches and storm water sediment basins; and
- Haul roads and access roads.

Newmont proposes to mine approximately 2.3 million tons of heap leach ore and 8.2 million tons of waste rock for the Project (total of 10.5 million tons). The material (both ore and waste) would be extracted from the Brooks Pit using conventional open pit mining methods of drilling, blasting, loading, and hauling. Newmont would use hydraulic shovels or front end loaders to load the blasted ore and waste into the haul trucks. The haul trucks would transport the waste rock to three surface-deposited OISAs near the Brooks Pit, and transport the run-of-mine ore to the existing and permitted Lone Tree Mine heap leach pad via a new heap leach pad access ramp. Once placed on the heap leach pad, the ore would be leached with a dilute cyanide solution to dissolve the precious metals into a “pregnant” leach solution. The pregnant solution would then be processed for metal recovery and further refining.

Under specifications within the Lone Tree Water Pollution Control Permit (WPCP) NEV0090058, on January 1, 2015, the remaining capacity of the Lone Tree heap leach facility (HLF) would be 10.8 million tons (Phases 1-4) plus 3.2 million tons (Phases 6-7). Material from Brooks Pit is to be placed within the Phase 1-4 area of the Lone Tree HLF, which has a permitted maximum height of 250 feet above the lowest liner level. This volume of material is not expected to exceed this height. Lone Tree HLF is currently permitted for a solution application rate of up to 4,500 gallons per minute. There are no changes anticipated to processing activities

at the facility. All other permit limitations dictated by WPCP NEV0090058 relating to the Lone Tree HLF would remain in compliance with the permit at the commencement of placement of material from the Brooks Pit.

Other components of the Project include relocation of an existing lime silo, widening of existing roads, installation of an expanded perimeter fence, and exploration activities. The existing P-7 Lime Silo would be relocated to be near the haul road and a ramp onto the HLF would be constructed in this location, as shown in Figures 5 and 6. The unmaintained road leading from the existing Lone Tree Mine heap leach facilities to the Brooks Pit would be widened and converted to a haul road.

Exploration activities, expected to disturb up to 10 acres, are proposed within portions of T34N, R42E, sections 21 and 28, MDBM. The acreage of proposed surface disturbance associated with the Project components are shown in Table 2-1, and includes new proposed disturbances associated with the Project. The existing road in Section 22 is within the approved POO boundary of the Lone Tree Mine as indicated in Table 2-1. The lime silo relocation, and ramp construction would be located within the approved activities of the Lone Tree Mine POO boundary and are not included in the Project disturbances shown in Table 2-1.

Table 2-1: Acreages of Surface Disturbance Associated with the Proposed Activities in the Existing and Proposed Plan Boundary

Component	New Proposed Boundary		Existing Boundary	Total
	T34N, R42E, section 21, MDBM	T34N, R42E, section 28, MDBM	T34N, R42E, section 22, MDBM	
Brooks Pit	NA	32.04	NA	32.04
Northwest OISA	8.27	12.07	NA	20.34
Northeast OISA	NA	14.52	NA	14.52
West OISA	NA	75.69	NA	75.69
Exploration	NA	NA	NA	10
Laydown Area A	NA	5.57	NA	5.57
Laydown Area B	NA	3.02	NA	3.02
Laydown Area C	NA	2.09	NA	2.09
Storm water diversion ditches and sediment basins	NA	9.8	NA	9.8
Haul and access roads	5.61	41.03	9.4	56.04
Total	13.88	195.83	9.4	229.11

2.1.2 Operation Time Frame

Mining would take place for approximately 3 years and 3 months, depending on economic conditions. Pending acquisition of requisite authorizations and permits, pre-stripping is anticipated to begin in early 2015 with production starting to commence within one to two months. Mining would be completed by early 2018 and leaching would be completed in early 2021. Reclamation, post-closure monitoring and other closure activities would continue for an additional three years after mining, or as required. These time frames are subject to change based on regulatory approvals and economic conditions.

2.1.3 Work Force

Construction would be performed by Newmont personnel, using Newmont-owned equipment, over an approximately three-month period. The peak number of construction personnel is estimated to be fewer than 10 workers, anticipated to be sourced from existing Lone Tree Mine and Phoenix Mine personnel. During this same time, pre-stripping would be performed. It is anticipated that approximately 50 personnel already employed at Lone Tree Mine at the time of construction and stripping would be employed for project-related mining, leaching and associated activities. The proposed project would continue to provide employment opportunities at Lone Tree Mine through 2020, or longer depending on economic conditions.

On commencement of the project, Lone Tree Mine would continue to operate on a year-round basis in sequence with current Lone Tree Mine operations. It is anticipated that the work schedule would also be consistent with current operations involving production 10 hours per day (day-shift only), 4 days per week, 52 weeks per year, and ore processing 24 hours per day, 365 days per year. This schedule may vary throughout the life of the project.

2.1.4 Open-Pit Mining

The Project would be a typical open-pit mining operation. The gold deposit would be mined from the Brooks Pit using conventional open-pit mining methods involving drilling, blasting and loading of the ore and overburden into haul trucks with hydraulic excavators. Up to 10.5 million tons of material (both ore and waste) would be extracted from the Brooks Pit over an approximately 3 year period. The pit is not proposed to extend below the water table so it would not require dewatering. Slope angles within an open pit mine are influenced by rock strength, geologic structure, hydrology, pit wall orientation, and operational considerations. A recently completed geotechnical study (Newmont 2013d) included the analysis of the stability of the Brooks pit walls. The pit walls have been designed for stability, to help protect the health and safety of the mine personnel and equipment that work at the base of these slopes. The proposed pit parameters are shown in Table 2-2. Figure 7 provides a detailed drawing of the final build-out configuration of the Brooks Pit.

Table 2-2: Project Pit Parameter

Pit Design Slope Sectors				
Analyzed Sector	Inter-Ramp Angle - degree	Inter-Ramp Slope Height – ft.	Overall Angle - degree	Overall Slope Height – ft.
S1	37	80	30	240
S2	43	160	30	240
S3	29	140	27	240
S4	42	100	27	240
S5	21	80	14	140
S6	46	280	46	280
Slope Design Criteria Summary				
Pit Wall	Double Bench Height – ft.	Bench Face Angle - degree	Inter-Ramp Angle - degree	Catch Bench Width – ft.
North	40	65	45	21
South	40	65	45	21
West Wall	40	65	45	21
East Wall	40	65	42	26

2.1.5 Overburden / Interburden Storage Areas

Three OISAs would be constructed over the life of the Project to store approximately 8.2 million tons of waste rock material. The OISAs would be located adjacent to the Brooks Pit, as shown in Figures 5 and 6. Details regarding the final build-out configuration of the OISAs are shown in Figure 8. The parameters and capacities of each OISA are provided in Table 2-3. Each OISA lift height would be 20 feet high, and the mid-bench lengths would be approximately 1,300 feet. The maximum dump height for the Northeast and West Brooks OISA is planned at 120 feet, and the maximum dump height for the Northwest Brooks OISA is planned at 80 feet. The capacities of the OISAs range from 1,172 million tons for the Northeast Brooks OISA, to 7,805 million tons for the West Brooks OISA.

Table 2-3: Project OISA Parameters

OISA	Abbreviation	Original Surface Grading	Design Slope	Max. Dump Height (ft)	Capacity (M Tons)
Northeast Brooks OISA	NEB	11:01	3H:1V	120	1,172
Northwest Brooks OISA	NWB	30:01:00	3H:1V	80	1,609
West Brooks OISA	WB	20:01	3H:1V	120	7,805

In-pit roads and haul roads would connect the Brooks Pit with OISAs by a series of road segments. The area underlying the OISAs would be cleared and grubbed prior to construction. Salvageable growth media from the Project surface disturbance would be stockpiled below the base elevation of the OISAs and the Brooks Pit.

The OISAs would be constructed by end-dumping into designated areas. The disposal facilities are located on stable foundation material (existing natural ground) and relatively flat terrain. The OISA slopes created during construction would be at angle of repose (approximately 1.4H:1V) and extend from the crest to the natural toe. The final reclaimed OISA configurations would consist of 3H:1V. The recently completed geotechnical study (Newmont 2013d) also included the analysis of the stability of the OISAs.

The OISA surfaces would be graded to control runoff and engineered diversions would be installed as necessary for erosion control and rerouting of the surface water features. In addition, the OISAs would be visually monitored to ensure that drainage and sediment control measures are effective.

The Brooks deposit consists of structurally and stratigraphically controlled oxide mineralization hosted within Pennsylvanian to Permian Havallah Sequence. The waste rock produced would be net neutralizing and is not expected to generate acid. Leachable constituents are present in very low concentrations, and would release quickly under saturated conditions, or over time under unsaturated or vadose conditions. As a result, waste rock would be managed as a single, non-Potentially Acid Generating unit with random placement in the OISAs. This assessment is based on the information documented in the waste rock characterization study (Newmont 2012a).

2.1.6 Exploration

Up to 10 acres of new exploration disturbance would be created in areas contained within the Project Area. The proposed disturbance would include access drill roads, exploration drill pads,

and sumps for water management installed at locations adjacent to the disturbance associated with other facilities.

2.1.7 Laydown Areas

Laydown areas would be established adjacent to the Brooks Pit and the WB OISA as shown in Figures 5 and 6. The area underlying the laydown areas would be cleared and grubbed prior to construction. Salvageable growth media from the Project surface disturbance would be stockpiled below the base elevation of the OISAs and the Brooks Pit. The surfaces of these areas would be graded to control runoff and erosion.

2.1.8 Lime Silo

The existing P-7 Lime Silo would be relocated to be adjacent to the heap leach pad and haul road. A ramp would be constructed to allow the haul trucks to access the lime silo as shown in Figures 5 and 6. In order to maintain the pH of the heap leach material, a small amount of lime would be added to each ore load before depositing the ore on the heap leach facility. The lime silo operates under a Class II Air Quality Operating Permit.

2.1.9 Storm Water and Sediment Control Structures

The Lone Tree Mine discharges storm water under NDEP General Permit for Stormwater Discharges Associated with Industrial Activity from Metals Mining Activities (NVR300000). The Lone Tree Mine maintains a Storm Water Pollution Prevention Plan (SWPPP) that was last updated in June 2013 (Newmont 2013b). The existing SWPPP would be amended to address storm water management for the Project. Surface water management (diversion structures) and erosion control measures would follow the Best Management Practices (BMPs) as described in the SWPPP and would be implemented during initial construction.

Sediment control measures would be implemented, as necessary, to reduce soil movement within the Project Area and to minimize off-site effects. Where sedimentation of storm water runoff is a possibility, BMPs would be placed and used for sediment control. Runoff control structures would include silt traps and fences constructed of certified weed free straw bales, or geotextile fabric, and sediment collection basins. These structures would be maintained throughout the life of the Project. Soil collected in these structures would be periodically removed. In revegetated areas, these features would be removed once vegetation is adequately established.

Sediment retention basins and storm water diversion channels (ditches) would be constructed as necessary in accordance with the Handbook of Best Management Practices (Nevada State Conservation Commission 1994) and the SWPPP. Sediment retention basins would be used to capture storm water runoff and allow the retention and settling of sediment, or in most instances, the infiltration of water. The retention basins would typically be unlined and constructed with a

rock outlet, a riser pipe outlet or a silt fence/straw structure. The basins are typically sized to accommodate the 2-year, 24-hour storm event. Routine inspections would be conducted to ensure that they are functioning properly and to determine if maintenance is required.

Storm water diversion channels to be installed surrounding disturbance areas would be designed to divert the 100-year, 24-hour storm event run-on from the undeveloped land adjacent to the Project. The storm water diversion channels would be riprap-lined, trapezoidal channels with varying bottom widths and 2H:1V side slopes. The channels would be designed to discharge to undisturbed land via outlet protection. Riprap would protect culvert outlets and sediment basin overflow channels. The diversion channels would be routinely inspected for evidence of erosion and breaches as required by the SWPPP.

2.1.10 Haul and Access Roads

The Brooks project haul roads are designed to handle the largest piece of mining equipment associated with the operation. In-pit roads and haul roads would connect the Brooks Pit with the OISAs by a series of road segments. The haul roads would typically be constructed to widths of 80 feet for in-pit roads, and up to 120 feet for permanent (life-of-mine) out-of-pit haul roads. The permanent roads would be used for hauling ore material to the processing facility and overburden material to the disposal sites. These roads would also provide support vehicle access to all major mining components at the Project.

An existing access road would be widened and improved to support the proposed expansion activities. Once widened, the existing access road would have a running width of approximately 100 feet and an approximate length of 8,530 feet.

The roads would be constructed according to Mine Safety and Health Administration (MSHA) standards, which include a berm of at least half the wheel height of the largest vehicle using the road. Safety berms would be constructed, to legal heights, on the outside edges of the haul roads. Collected runoff from haul and access roads would be routed to sediment collection basins as necessary. BMPs would be used where necessary to control erosion.

Runoff from roads would primarily be captured in the storm water sediment basins which would allow the settling of sediment, or in most instances, the infiltration of water. Roadside berms would be used to control runoff, directing storm water into established storm water diversion ditches and storm water sediment basins.

2.1.11 Water Supply and Management

Water management would follow the plan described in the Lone Tree Operating Plan (Newmont 2013a). There would be no new sources of water or disposal of water for the Project. Potable water and fresh water for dust suppressing activities would be supplied from existing facilities at

Lone Tree Mine. Water trucks would use existing spigots at the Lone Tree Mine fresh water tank. Potable water would be supplied from the fresh water tank. Water quality is expected to meet drinking water standards. Water would flow by gravity from the fresh water tank to the potable water tank.

Mine dewatering would not be needed to support the Brooks project. This assessment is based on the numerical groundwater flow model developed to simulate groundwater conditions at the Lone Tree Mine and surrounding area (Itasca 2013). The numerical model indicated that the pit would not need to be dewatered, based on the expected maximum depth of the pit at 4,650 feet National Geodetic Vertical Datum of 1929. This maximum pit depth is approximately 200 feet above the highest known water table. Further, a pit lake is not expected to form in the Brooks Pit after water-level recovery of the Lone Tree Mine.

2.1.12 Security and Fencing

Security procedures for the Brooks project would be the same as those described in the Lone Tree Mine POO. A new perimeter fence would be constructed around the Project Area to prevent access by livestock, wildlife, and the public. In general, four-strand barbed wire fences would be constructed in accordance with BLM fencing standards per BLM Handbook 1741-1. Chain-link fences would be erected within the perimeter fence in areas where a higher level of security is needed. The fence would be monitored regularly and repairs made as needed.

2.1.13 Chemical Use and Storage

2.1.13.1 *Explosives Storage Areas*

Explosive agents would be purchased, transported, stored, and used in accordance with the Bureau of Alcohol, Tobacco, Firearms and Explosives, Department of Homeland Security provisions, and MSHA regulations. The primary explosive used would be ammonium nitrate and fuel oil (ANFO). Ammonium nitrate prill would be stored in a silo in a secure area. ANFO would be mixed as required for blasting. Explosive agents, boosters, and blasting caps would be stored within a secured area.

2.1.13.2 *Petroleum Contaminated Soil Management*

Newmont would follow the existing Petroleum Contaminated Soil Management Plan for the Lone Tree Mine which states that any hydrocarbon-contaminated soil generated at Lone Tree Mine that meets site-specific levels (SSLs) would be managed for final disposal at the Section 13 Waste Rock Dump (WRD). Any such material that does not meet SSLs would be transported to an off-site facility (Newmont 2013c).

2.1.13.3 Waste Disposal Management

Newmont would follow the existing Lone Tree Mine Solid and Hazardous Waste Management Plan (Newmont 1996) which describes the waste management activities at the mine and is designed to comply with the applicable hazardous waste management regulations. The Lone Tree Mine Solid and Hazardous Waste Management Plan would not require any changes because the Proposed Action would not generate any new wastes.

2.1.14 Safety and Fire Protection

The Project would operate in conformance with all MSHA safety regulations (30 CFR 1-199), as well as the Lone Tree Operating Plan (Newmont 2013a) and the Lone Tree Mine Contingency Plan and Emergency Procedures Plan (Newmont 2012a). Site access would be restricted to employees and authorized visitors. For public safety, the boundary fence would restrict access along existing road(s), but public access would remain available by way of a gate access. Fire protection equipment and the existing fire protection plan would remain in place in accordance with State Fire Marshal standards.

Fire protection for the Brooks project would be accomplished using the Lone Tree Mine protocols. The primary method of fire suppression for the Lone Tree Mine is by the large water trucks used for dust suppression in support of the daily mining operations. Fresh water for fire suppression would be supplied to the water trucks via existing spigots at the Lone Tree Mine fresh water tank. A loaded water truck (with operator) is readily available, and the emergency response time would be minimal.

2.1.15 Interim Management for Temporary Closure

Procedures for temporary closure and interim management would follow protocols described in the Lone Tree Operating Plan (Newmont 2013a).

The BLM and the state would be notified of any temporary closures lasting longer than 30 days for reasons such as extreme weather, economic conditions, or significant seismic events. In the event a temporary closure is deemed necessary, mining, loading of the ore to the leach pad, application of leach solution to the heap, and general operation of the facility would cease. Equipment and machinery would be stored in a safe and clean condition. Interim reclamation measures would be taken as necessary to stabilize disturbed areas, and a security / caretaker crew would remain present throughout the temporary closure period.

Following any period of temporary closure, a complete inspection of all facilities would be performed prior to startup. The BLM would also be notified prior to startup if temporary closure occurs.

2.2 Surface Occupancy

Under 43 CFR 3715.0-5, occupancy means full or part-time residence on the public lands. Occupancy is also interpreted as meaning activities that involve residence; the construction, presence, or maintenance of temporary or permanent structures that may be used for such purposes; or the employment of a watchman or caretaker for the purpose of monitoring activities. Structures include, but are not limited to, barriers to access, fences, tents, motor homes, trailers, cabins, houses, buildings, and storage of equipment or supplies. Newmont plans to construct a fence surrounding the Project Area that would be considered occupancy.

2.3 Required Permits

As part of Project development, Newmont would acquire the permits and authorizations presented in Table 2-4.

Table 2-4: Major Permits and Authorizations Required for Project Development

Permit	Regulatory Agency
Plan of Operations / Record of Decision	United States Department of the Interior, Bureau of Land Management
Surface Disturbance Permit and Class II Air Quality Operating Permit	Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, Bureau of Air Pollution Control
Water Pollution Control Permit	Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, Bureau of Mining Regulation and Reclamation
Reclamation Permit	Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, Bureau of Mining Regulation and Reclamation

2.4 Site Reclamation

This section summarizes the proposed methods for closure and reclamation of the Brooks project. Reclamation tasks primarily include recontouring and seeding activities. Methods would be similar to those described in the current Lone Tree Mine Reclamation Plan (Newmont 2011a), as well as the Lone Tree Mine Operating Plan (Newmont 2013a). Lone Tree Mine reclamation methods applicable to the project are summarized in the following subsections. Newmont’s primary objectives for post-mining reclamation of disturbances are to:

- Ensure public safety.
- Reduce or eliminate potential environmental impacts.

- Return the site to a condition that would support land uses similar to those which existed prior to the onset of mining activities. These land uses include livestock forage production, wildlife habitat, and mineral exploration and development.
- Control infiltration, erosion, sedimentation, and related degradation of existing drainages in an effort to minimize off-site impacts.
- Employ reclamation practices using proven methods that do not require ongoing maintenance.

With these objectives in mind, reclamation activities are designed to:

- Stabilize the disturbed areas to a safe condition.
- Protect both disturbed and undisturbed areas from unnecessary and undue degradation.

2.4.1 Methods Taken to Prevent Unnecessary and Undue Degradation

When feasible and appropriate to the type of disturbance, disturbed areas would be recontoured or shaped to blend with surrounding topography. When possible, reclamation would be performed concurrent with mining activities or immediately after a facility's operational life has ended. This enhances revegetation success and reduces erosion and sedimentation from disturbed areas.

2.4.2 Revegetation Practices

The Project Area is located within the high desert, semi-arid climate of northern Nevada. Newmont proposes to conduct revegetation activities when conditions are most favorable for germination, emergence, and seedling establishment. Seeding activities would typically be conducted between October and April, when moisture is most prevalent. It has been Newmont's experience, and that of other operators in the area that the most favorable seeding conditions include the presence of a light snow cover, such that seedbed preparation and seed application incorporate the available moisture and soil conditions associated with the snow cover.

Project facilities would be reclaimed using a combination of revegetation practices that would promote the establishment of diverse plant communities and soil cover stability. These revegetation practices have proven successful in the reclamation programs conducted at other similar facilities, and Newmont would continue to evaluate and refine growth media management and revegetation practices to support such efforts in the region. Evaluation of revegetation practices has included trials and test plots in which to evaluate seed mixtures, growth media, growth media amendments, and seeding techniques. In addition, monitoring of concurrent reclamation has provided valuable feedback for future revegetation activities. This information as well as future information developed from test plots or monitoring efforts may be used to modify seed mixes or seeding methods.

Reclaimed areas would be protected from livestock grazing by BLM-approved four strand barbed wire fencing along the periphery of disturbed areas. Perimeter fences would remain in place until the applicable reclamation standards have been satisfied. Access to reclaimed areas by wildlife would not be restricted. As at other Newmont facilities, reclamation methods including seed choice and placement of shelter materials (such as large rocks) may be used to attract wildlife to reclaimed areas at the Project Area post-closure.

2.4.3 Growth Medium Management

Salvaging natural growth medium from undisturbed areas prior to mining activities is standard practice for mining operations. It is expected that less growth material than needed to achieve coverage of OISAs would be able to be salvaged from the Project Area. Types and amounts of salvaged material would be assessed and distributed as productively as possible at the time of facility closure. Where natural growth medium conditions are favorable, and where the growth medium can be removed safely during facility construction and mining operations, natural growth medium would be salvaged and pushed to locations at the toe of the proposed OISAs and Brooks Pit berms. Leaving material in close proximity to the area intended for reclamation would reduce time and cost of reclamation activities.

Growth medium would include alluvium and relatively fine-grained oxide waste rock. The use of these materials has proven successful in previous reclamation conducted at other areas of Lone Tree Mine. Growth medium may be stabilized by seeding with an interim seed mix. Seeding would be conducted once the material has been moved during facility construction and mine operations. Chemical stabilization of growth medium has not proven necessary in the past and its application is not anticipated at this time.

2.4.4 Seed Mixtures

The Project is located in a semi-arid climate with a mean annual temperature of about 50 degrees Fahrenheit (°F), with elevations from 4,640 to 5,280 feet above mean sea level (amsl). The summers are short and hot, and the winters are moderately cold (WRCC 2013). Humidity in the area is low, causing strong surface heating during the day and rapid cooling during the night (WRCC 2013). Within the eastern portions of Humboldt County, the summer months have an average daily maximum temperature of 87 °F, with a minimum daily temperature of 48 °F. In the winter months, the average temperature is 43 °F, with an average daily minimum of 19 °F (USDA NRCS 2012). The average annual precipitation is 8.85 inches, which falls primarily as snow (USDA NRCS 2012).

Table 2-5 lists the proposed seed mix and application rate for revegetation of land disturbances at Lone Tree Mine, including areas associated with the Brooks project. Proposed seed application rates allow adequate revegetation establishment in this arid climatic setting within the elevation

range of the project. The proposed seed mix and/or application rate could be subject to modification as a result of ongoing reclamation monitoring and refinement of the reclamation program, or due to the lack of availability of any seed species during a given year. The proposed seed mix would be modified only after consultation and approval by the appropriate agencies.

Table 2-5: Final Reclamation Seed Mixture

Scientific Name	Generic (Common) Name	Seeding Rate (lbs/PLS/acre)
<i>Sporobolus cryptandrus</i>	Sand dropseed	0.2
<i>Elymus elymoides</i>	Bottlebrush squirreltail	0.6
<i>Oryzopsis hymenoides</i>	Indian ricegrass	0.6
<i>Poa sandbergii</i>	Sandberg bluegrass	0.5
<i>Elymus cinereus</i>	Great Basin wildrye	2.0
<i>Sphaeralcea grossulariaefolia</i>	Gooseberryleaf (Scarlet) Globemallow	0.3
<i>Penstemon palmeri</i>	Palmer penstemon	0.3
<i>Atriplex canescens</i>	Fourwing saltbush (s)	6.5
<i>Atriplex confertifolia</i>	Shadscale	3.5
<i>Atriplex tridentata</i>	Trident saltbush	1.5
<i>Artemisia tridentata</i> var. <i>tridentata</i>	Wyoming Big sagebrush (s)	0.2
<i>Ceratoides lanata</i>	Winterfat	1.25
<i>Medicago sativa</i>	Alfalfa	0.25
<i>Kochia prostrata</i>	Prostrate summer cypress	0.75
Total		18.45

PLS = pure live seed

The proposed seed mix is primarily composed of species native to the region, with limited introduced species that may provide interim soil stability. The seed mix contains a complement of grasses, forbs, and shrubs to establish a diverse plant community within the reclaimed areas. Proposed revegetation species are drought tolerant, promote evapotranspiration of soil moisture, and would provide forage for livestock and wildlife. The seed mix was developed to include plant species that would establish viable communities along reclaimed slopes with a range of soil textures.

2.4.5 Seeding Techniques

Seeding may be accomplished using various methods and equipment depending on topographic features and soil conditions. Conventional agricultural drilling methods (i.e., rangeland drill) would be used in areas where soil conditions allow use of such equipment. The rangeland drill would be set at an optimum planting depth of 0.25 to 0.5 inch, and would be operated so that planting furrows are parallel to slope contours (i.e., perpendicular to the slope). Establishment of the horizontal furrows would result in micro encatchment areas for moisture and migrating seed, and would minimize surface flow velocities associated with precipitation events that could result in erosion and rilling of the reclaimed surface.

Broadcast seeding methods would be conducted using farm tractors fitted with hydraulic ripping mechanisms such as dam- and dike-type equipment fitted with fargo seed boxes, or other conventional broadcast methods such as hydroseeding, tractor herd seeding, and/or hand cyclone broadcast seeding. Where used, broadcast seed bed preparation would be achieved by shallow ripping, dozer tracking, raking, or chaining techniques. Final seed bed preparation would be conducted by placing seed bed furrows parallel to slope contours (i.e., perpendicular to slopes), which would provide micro encatchment areas and assist in controlling runoff.

Hand-seeding would also be employed where required.

2.4.6 Seed Bed Amendments

Mulch covers are sometimes used in reclamation efforts to assist in maintaining soil temperatures, to encapsulate soil moisture, to reduce potential wind and water erosion and, in the case of organic mulches, to enhance revegetation potential by introducing limited quantities of organic supplements and nutrients to the final seed bed. However, application of certain mulches can be problematic due to the potential introduction of noxious weed populations and moisture wicking effects. Previous revegetation efforts at Lone Tree Mine have been successful, largely without the use of mulch applications. Therefore, the use of mulch is not anticipated at this time. Newmont would examine site specific soil conditions prior to any application of mulches. Interim applications of mulch may be used on a limited basis or in specific areas, until revegetated plant communities are established.

2.4.7 Revegetation Release Criteria

Pursuant to the requirements of Nevada Administrative Code (NAC) 519A and the Nevada Guidelines for Successful Revegetation for the NDEP, BLM, and USFS (September 3, 1998), Newmont may request partial release of its reclamation surety. This request would be made when reclamation requirements for a discrete portion of a disturbance have been fulfilled, or when reclamation requirements for a discrete activity have been fulfilled.

Revegetation for purposes of surety release would be considered complete once plant growth has been established to one of the following levels as determined by the BLM and NDEP:

- Perennial vegetative cover is as close as possible to 100 percent of selected comparison areas; or
- Perennial vegetative cover is as close as possible to 100 percent of the ecological or range site description cover.

Data would be collected for the first method using permanent transects established to measure cover. Foliar and basal cover would be determined by the line intercept method. For the second method, cover would be determined by the line intercept method and compared to the ecological

or range site description. Progress of the various revegetated areas would be evaluated during active growing seasons, with revegetation success likely to first be evaluated during the third full growing season after revegetation was conducted.

2.4.8 Other Reclamation Activities, Including Reclamation of Previous Disturbances

Ongoing exploration activities have resulted in disturbances in the Project Area. In addition to the currently active exploration activities in the Project Area, a surface disturbance of 4.44 acres was approved by BLM under Notice of Intent N-79235 dated April 6, 2006. Much of this disturbance has been reclaimed.

Disturbances associated with ongoing exploration activities are reclaimed as authorized under the Brooks Project Notice of Intent (NNV-091143), and would be continued concurrent with operations, including the exploration activities, access and haul roads, drill pads, and drill sumps as needed.

2.4.9 Proposed Reclamation Schedule

Table 2-6 presents a proposed schedule for reclamation activities. It is Newmont's intent to conduct concurrent reclamation during active operations where possible. The reclamation schedule is based on the anticipated schedule for ending operational use of the Project Area and other areas of Lone Tree Mine.

2.4.10 Post-Mining Land Use

Reclamation is designed to achieve post-mining land uses similar to those prior to mining. The pre-mining land uses included domestic livestock grazing, wildlife habitat, mineral exploration, mineral development, and dispersed recreation.

2.4.11 Post-Mining Topography

Reclamation would include recontouring or shaping of landforms to blend with surrounding topography. Mimicking the natural topography would minimize loading of sediment to surface waters after reclamation. Figures 7 and 8 show the configurations of the mining components at final build-out and post-reclamation.

2.4.12 Slope Stability Technical Criteria

The rock to be mined from the Brooks Pit is from the Pennsylvanian and Permian era Havallah Formation. This rock is the same material mined from the Lone Tree Pit.

Technical criteria used to determine final reclamation configurations would be based on geotechnical and erosional stability analyses conducted for the Lone Tree Mine. The pit walls

and OISA slopes would be designed for stability to help protect the health and safety of the mine personnel and equipment that work at the base of these slopes.

Details regarding the post-reclamation slope configuration of the OISAs are shown in Figure 8. The parameters and capacities of each OISA at final build-out are provided in Table 2-3. The maximum dump height for the Northeast and West Brooks OISA is planned at 120 feet, and the maximum dump height for the Northwest Brooks OISA is planned at 80 feet. The final reclaimed OISA configurations would consist of 3H:1V. The economic design of the pit walls may not provide for the long-term stability of the inter-bench walls following the cessation of mining. Although large-scale mass failures of the pit walls are not anticipated, it is expected that raveling and slope failures between the benches would occur over the long term after mining is completed. Safety berms would be constructed and seeded.

2.4.13 Reclamation Methods to be Used for the Open Pit

The reclamation methods for Brooks Pit would follow the pit reclamation method described in the Lone Tree Mine Reclamation Plan (Newmont 2011a). Open pit reclamation methods would consist of erecting and seeding safety berms around the pit perimeter. The primary intent of the safety berms is to preclude public access. There are no plans to backfill or revegetate the Brooks Pit.

2.4.14 Reclamation Methods to be Used for OISAs

OISAs would be used for permanent placement of mine waste rock material. When OISA height reaches the maximum vertical interval and the disposal facility crest is at the designated perimeter boundary, the outer slope of the disposal facility would be regraded to a final reclamation slope.

Concurrent reclamation would be ongoing over the life of the mine where possible. Cover material or growth media would be placed and followed by seeding as soon as practicable after recontouring efforts are complete. OISA reclamation would be considered complete once revegetation meets the requirements of NAC 519A and BLM requirements.

OISA surfaces would be graded to control runoff and engineered diversions would be installed as necessary for erosion control and rerouting of the surface water features. In addition, OISAs would be visually monitored to ensure that drainage and sediment control measures are effective.

2.4.15 Reclamation Methods to be Used for Roads

The reclamation methods for all road disturbances would follow protocols described in the current Lone Tree Mine Reclamation Plan (Newmont 2011a). A dozer or grader would rip the running surface of haul roads in order to loosen compacted material. Roads would be recontoured to near pre-disturbance topography. Culverts would be removed, and pre-existing drainages would be reestablished. Growth media would not be placed on the recontoured roads because all of the roads are constructed from alluvium and the recontoured surface would be suitable for revegetation. The recontoured surface would be seeded in order to establish a vegetation community that is consistent with undisturbed lands adjacent to the Project, and quickly stabilize the ground surface.

As a component of the Project, the existing unmaintained road leading from the Lone Tree Mine heap leach facilities to the Brooks Pit would be widened and converted to a haul road. At completion of operations, requirements for reclamation of this road would be assessed in coordination with the BLM. Road reclamation in the area of the expansion would be considered at completion of the Brooks Project operations. However, the road may be left open pending

final and permanent closure of the Lone Tree Mine or future development. Decision-making would be completed in conjunction with BLM and NDEP at that time.

2.4.16 Disposition of Ancillary Facilities

All demolition and reclamation activities for ancillary facilities for the Project, which include the lime silo, ramp, and laydown areas, would follow the methods described in the current Lone Tree Mine Reclamation Plan (Newmont 2011a). Demolition and reclamation methods applicable to the Project include demolition of structures to the level of foundations, breaking or cracking the concrete foundations, ripping surfaces to break up compacted ground, recontouring the ground surface to be consistent with adjacent topography, and seeding. Small concrete foundations and pads would be broken and may be removed for disposal.

2.4.17 Description of Any Surface Facilities Which Would Not Be Subject to Reclamation

No new buildings are proposed for the Brooks project. All existing buildings and other structures located at Lone Tree Mine would be managed as per the Lone Tree Mine Reclamation Plan (Newmont 2011a).

Any approved non-hazardous, non-liquid materials would be disposed in the Lone Tree Mine Class III Landfill. Recyclable or reusable materials would be transported to a permitted treatment facility, or other Newmont or similar industry operation. All hazardous or other waste not permitted for on-site disposal would be disposed off-site at a permitted treatment, disposal, and storage facility, in accordance with all NDEP and federal solid and hazardous waste regulations.

Diversion ditches required for post reclamation run-on and sediment control would be revegetated but not reclaimed. These structures would remain as permanent features to maintain the integrity of reclaimed mine facilities, and to ensure the suitability of reclaimed areas for post-mining land use.

2.4.18 Measures Used to Minimize Loading of Sediment to Surface Waters During Operation, and During and After Reclamation

Erosion control and sediment control during and after reclamation may be accomplished by the following measures, or other appropriate BMPs for storm water control:

- Revegetation of disturbed sites;
- Construction of diversion ditches, both permanent and temporary when needed, to divert run-on away from reclaimed sites;
- Installation of silt fences, and/or straw bale dams in areas requiring sediment control; and/or

- Installation of riprap in erosion-prone areas of ditches and channels.

During reclamation, Newmont would employ BMPs as needed to control sediment from active areas. The Lone Tree Mine SWPPP (Newmont 2013b) would be updated to identify specific methods for sediment control and BMPs to be employed during reclamation activities prior to commencement of operations, as required.

Surface water management (diversion structures) and erosion control measures implemented during operations would be left in place or modified during reclamation. The goal of drainage and sediment control is to convey runoff from reclaimed areas and upgradient undisturbed areas in a manner that would protect the reclaimed facility components and would prevent sedimentation of downgradient areas. Final drainage and sediment control BMPs would be designed to require little to no maintenance.

Reclaimed areas would be seeded as soon as practicable to minimize the potential for erosion of bare slopes. The species to be used for seeding would provide a diversity of native vegetation types, and would also include some introduced species to enhance interim soil stability and, where possible, attract wildlife. By seeding the disturbed areas as soon as practicable, Newmont intends to maximize the stability of the affected soils and minimize sediment generation.

During reclamation, where practicable, natural drainages would be reestablished and existing natural drainages would be used. The main method of drainage and sediment control for the Project would consist of recontouring or shaping to blend with surrounding topography and by revegetation of the disturbance areas. At locations where sedimentation of storm water runoff is a possibility, additional controls, primarily consisting of BMPs such as straw bales, sediment collection basins, mulch or fiber mats and riprap silt fencing and/or hay bales would be placed and used for sediment control.

Operational storm water controls would be left in place during reclamation until no longer needed. Run-on diversion channels and ditches would remain as permanent features after final reclamation and mine closure. Final BMPs (post-closure) would require little to no maintenance.

2.4.19 Description of Monitoring and Maintenance of Fences, Signs and Structures

Reclaimed areas would be protected by BLM-approved four-strand barbed wire fencing along the periphery of disturbed areas. The perimeter fence would remain in place until the applicable reclamation standards have been satisfied. The fence would be monitored regularly, and repairs made as needed.

2.4.20 Description of Drill Hole Plugging Procedures

Exploration drill holes would be abandoned as soon as practicable, or as required by regulation, after completion of all activities at the exploration site. Abandonment methods include removal of perforating casing when present, and plugging of holes in accordance with Nevada Well Abandonment Regulations (NAC 534).

No new well holes for monitoring or water production are proposed for the Brooks project. Existing wells at Lone Tree Mine are to be reclaimed per the Lone Tree Mine Reclamation Plan (Newmont 2011a).

2.4.21 Description of Concurrent Reclamation

Concurrent reclamation would be maximized to the extent practicable to accelerate revegetation of disturbed areas. Reclamation activities would be conducted on facilities or portions of facilities that have been constructed to design limits or are no longer in use for operations.

2.4.22 Measures to be Taken During Extended Periods of Non-Operation

Newmont does not anticipate extended periods of non-operation. If potential for an extended period of non-operation is anticipated in the future, Newmont would provide the NDEP and BLM with specific measures that would be conducted to maintain the site in a stable and safe configuration. Although the specifics of such activities would depend on the phase of operations and disturbance at the time, it is likely that most activities would consist of monitoring and maintaining surface water control structures and fences, and providing security or other methods to preclude public access.

2.4.23 Fluid Management and Process Fluid Stabilization

Process facilities include the heap leach pad and tailings facility, and their associated solution ponds. The intent of these reclamation activities is to provide for process fluid stabilization (PFS), which is defined in NAC 445A as the “condition which results when contaminants in a material are bound or contained so as to prevent them from degrading waters of the State under the environmental conditions that may reasonably be expected to exist at a site.” The primary focus for PFS is to remove contained process water from leach and tailings facilities and minimize the amount of water added to the facilities from precipitation.

The Proposed Action involves the continued use of the Lone Tree Mine heap leach pad and associated ponds under the existing permitted capacities. Fluid management activities for this project remain the same as those included in the Lone Tree Mine Reclamation Plan (Newmont 2011a).

2.5 Operational Performance Standards & Environmental Protection Measures

Federal and state regulations require environmental monitoring and controls of a facility to ensure that the environment is not degraded as a result of mining operations. This section discusses the operational performance standards and the environmental protection measures for the Project.

2.5.1 Air Quality

Appropriate air quality permits would be obtained from the NDEP Bureau of Air Pollution Control (BAPC) for the Brooks project facilities and land disturbances. As per BAPC regulations, the Brooks project air quality operating permit must be authorized by the BAPC prior to project commissioning. The Brooks project would comply with all applicable air quality regulations, including the control of fugitive dust from ground surface disturbances and roads.

The generation of fugitive dust from mining, including such activities as drilling, blasting, excavating, loading, hauling and waste rock disposal, would be controlled by BMPs in conformance with the Handbook of Best Management Practices (Nevada State Conservation Commission 1994). Committed air quality practices would include dust control for mine unit operations as described by the BAPC-required Fugitive Dust Control Plan. In general, the Fugitive Dust Control Plan would provide for water application of haul roads and other disturbed areas, chemical dust suppressant application (such as magnesium chloride) where appropriate, and other dust control measures as per accepted and reasonable industry practice. Also, disturbed areas would be seeded with an interim seed mix to minimize fugitive dust emissions from surfaces without vegetation, where appropriate.

2.5.2 Cultural Resources

Any cultural resource discovered by Newmont, or any person working on their behalf, during the course of activities on federal land would be immediately reported to the authorized officer by telephone, with written confirmation. Newmont would suspend all operations in the immediate area of such discovery and protect it until an evaluation of the discovery can be made by the authorized officer. This evaluation would determine the significance of the discovery and what mitigation measures would be necessary to allow activities to proceed. Newmont would be responsible for the cost of evaluation and mitigation. Operations may resume only upon written authorization to proceed from the authorized officer.

Additionally, the operator, or any person working on their behalf, would not knowingly remove, disturb, alter, or destroy any scientifically important cultural resources such as a historical or archaeological site, structure, building, object or artifact that qualify for listing on the National

Register of Historic Places (NRHP) or have not been evaluated for listing on the National Register.

Newmont must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined at 43 CFR 10.2). In the event that a discovery is found, Newmont must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

2.5.3 Paleontological Resources

In the event that previously undiscovered paleontological resources are discovered in the performance of any surface disturbing activities, the item(s) or condition(s) would be left intact and immediately brought to the attention of the authorized officer of the BLM. If significant paleontological resources are found, avoidance, recordation, and/or data recovery would be required.

2.5.4 Waters of the State

There are no perennial streams in the immediate vicinity of the Project or within 0.5 mile downgradient of the Project. The nearest named water body to the drainages is Herrin Slough, located on the east side of Interstate 80, approximately 3.9 miles northeast of the Project. Herrin Slough ultimately drains into the Humboldt River which is located approximately 5 miles northeast of the Project. The Lone Tree Pit Lake exists in Sections 11, 13, and 14, T34N, R42E MDBM. There are no other lakes in the immediate vicinity of the Project or within 0.5 mile downgradient of the Project.

As described in the Lone Tree Mine Expansion, Preliminary Jurisdictional Determination Report (ARCADIS 2013a), a survey for potential aquatic resources in the Project Area was completed in June 2013. During the survey, four desert drainage swales were identified within the Project Area. The Brooks project is hydrologically precluded from the watershed because the four drainages ultimately terminate on the alkali flat north of the Project Area. No wetlands were identified within the Project Area. There is no direct flow from the project to Waters of the United States, including perennial streams waters or traditionally navigable waters.

2.5.5 Erosion and Sediment Control

The Lone Tree Mine is located in a region that receives little rainfall. Potential evapotranspiration greatly exceeds precipitation at the mine. BMPs would be used to limit erosion and reduce sediment in precipitation runoff from project facilities and disturbed areas during construction, operations, and initial stages of reclamation. BMPs may include, but are not

limited to, diversion and routing of storm water using accepted engineering practices, such as diversion ditches, and the placement of erosion control devices, such as sediment traps, and rock and gravel cover.

Revegetation of disturbed areas would reduce the potential for wind and water erosion. Following construction activities, areas such as cut and fill embankments and growth media stockpiles would be seeded as soon as practical and safe. Concurrent reclamation would be maximized to the extent practicable to accelerate revegetation of disturbed areas. All sediment and erosion control measures would be inspected periodically, and repairs performed as needed.

2.5.6 Acid Rock Drainage

The Project waste rock is net neutralizing and would not generate acid (Newmont 2012b). When compared to oxide waste rock acid-base accounting results from nearby Valmy and Lone Tree Mines, Brooks Project waste rock has a lower sulfur content and higher neutralizing potential. Leachable constituents are present in very low concentrations, and would release only under saturated conditions rather than as a timed release. As the materials associated with the project do not contain any significant sulfide mineralization, there would be no oxidation products to release over time beyond those released with the initial flush. Additionally, saturated conditions are highly unlikely to occur at any of the OISAs.

2.5.7 Hazardous Materials

The term “hazardous materials” is defined in 49 CFR 171.8 and 172.101. Hazardous substances are defined in 15 USCS 1261, 49 CFR 302.4, and the Superfund Amendments and Reauthorization Act Title III. Hazardous materials would be transported, stored, and used in accordance with federal, state, and local regulations, as well as in compliance with the Materials Handling Plan and the Emergency Release Response and Contingency Plan described in the Lone Tree Mine Operating Plan (Newmont 2013a) and the Lone Tree Contingency and Emergency Response Plan (Newmont 2012a).

Hazardous materials would be transported to the project by U.S. Department of Transportation (DOT)-regulated transporters and stored on-site in DOT-approved containers. Employees would be trained in the proper transportation, use, and disposal of hazardous materials. All hazardous substances are handled in accordance with applicable MSHA regulations and as recommended on the manufacturer's Material Safety Data Sheets.

2.5.8 Solid and Hazardous Waste

Solid and hazardous waste management at the Brooks project would follow the protocols described in the existing Lone Tree Mine Solid and Hazardous Waste Management Plan

(Newmont 1996). Employee training would outline appropriate disposal practices, which includes the allowable wastes that can be placed in a landfill, management of used filters, oily rags, fluorescent light bulbs, aerosol cans, and other regulated substances. There would not be a landfill in the Project Area and all solid wastes would be disposed off-site.

Hazardous waste generation, treatment and disposal are regulated by the Federal Resource Conservation and Recovery Act (RCRA), 40 CFR, 260-270. Hazardous waste management at the Brooks project would comply with the existing Lone Tree Mine plans. In compliance with 40 CFR Part Subpart D (265.50-.56) Contingency Plan and Emergency Procedures, the Lone Tree Mine has developed a Contingency Plan and Emergency Procedures Plan as part of the Lone Tree Mine Operating Plan (Newmont 2013a) for potential accidents involving hazardous waste at the mine. In addition, the Project would comply with the Lone Tree Mine Spill Prevention, Control and Countermeasures Plan (Newmont 2011b) and the Petroleum Contaminated Soils Management Plan (Newmont 2013c). Used solvent, liquids drained from aerosol cans, accumulations of mercury fluorescent lights, and used antifreeze may be regulated by RCRA. Under RCRA, the Lone Tree Mine is already considered a “large quantity generator”. As such, all of the necessary facilities and infrastructure for large quantity generators are in place. The Proposed Action would not change the current RCRA designation.

Newmont has a waste minimization program to evaluate hazardous substances used on the mine property. When possible, alternative products that generate no waste or solid waste, rather than RCRA wastes would be used. Hazardous wastes generated at the Brooks project would be transported to permitted waste disposal facilities by licensed waste haulers. When practical, the wastes would be sent to recycling facilities.

2.5.9 Spill Prevention, Control and Countermeasures Plan

Operations at the Brooks project would be conducted in compliance with 40 CFR Part 112 and in accordance with the Lone Tree Mine Spill Prevention, Control and Countermeasure Plan (Newmont 2011b). The Spill Prevention, Control and Countermeasure (SPCC) Plan would be amended for the project. Inadvertent spills are anticipated to be contained within secondary containment.

Releases of hazardous materials would be contained, mitigated, and reported in accordance with the SPCC Plan. Spill containment and cleanup equipment would be available at the project. For on-site spills, the procedures outlined in the SPCC Plan would be used to respond to petroleum and fuel spills. Implementation of the prevention, containment, and clean-up measures in the SPCC Plan would minimize the potential for related impacts to soils, vegetation, wildlife, and water resources.

2.5.10 Monitoring

Environmental monitoring at the Brooks project would include revegetation and water quality monitoring for groundwater. Revegetation monitoring is addressed in Section 3 of this POO amendment. A plan for groundwater monitoring was developed for the Lone Tree Mine WPCP (Permit #NEV90058). Monitoring wells M/O 21-1 and M/O 19-1 are the closest water-level measurement points to the Brooks Pit and OISAs.

There are no surface water bodies within 0.5 mile down gradient of the disturbance area. Per the Stormwater Pollution Prevention Plan - Lone Tree Mine (Newmont 2013b), storm water discharges from the mine area do not enter Waters of the United States; therefore, there are no storm water monitoring requirements under the General Permit (NVR300000). The existing SWPPP would be amended for the Brooks project.

2.5.11 Growth Media and Cover Salvage and Storage

Salvageable growth media from the Brooks project surface disturbance would be stockpiled below the base elevation of the OISAs and the Brooks Pit. The haul road berms would consist of growth media. Available growth media would be salvaged for reclamation. Section 2.4.3 presents further discussion on growth media salvage. Growth media would consist of soils and alluvium stripped prior to surface disturbance activities. Any growth media remaining in the stockpile for one or more planting seasons would be seeded with an interim seed mix to stabilize the material, reduce erosion, and minimize the establishment of undesirable weeds.

2.5.12 Wildlife, Migratory Birds and Livestock

During construction and operations, land clearing and surface disturbance would be timed to prevent destruction of active bird nests or young of birds during the avian breeding season (March 1 through August 31, annually in accordance with the BLM Winnemucca District policies to comply with the Migratory Bird Treaty Act [MBTA]). If surface disturbing activities are unavoidable during the avian breeding and nesting season, Newmont would have a qualified biologist survey areas proposed for disturbance to determine the presence of active nests immediately prior to the disturbance. If active nests are located, the BLM biologist would be notified immediately and appropriate protection measures which may include avoidance or restriction of activities would be established. If no active nests are present in the area surveyed, implementation of the project should commence within 10 days of survey completion. Operators would be trained to monitor the mining and process areas for the presence of larger wildlife such as deer. Newmont would establish wildlife protection policies that would prohibit the feeding or harassment of wildlife.

Project-related traffic would observe prudent speed limits to protect wildlife and livestock, as well as to enhance public safety and minimize dust emissions. The Project perimeter would be fenced according to BLM Manual Handbook H-1741-1 for antelope specifications in order to keep wildlife and livestock out of the mine area. The perimeter fence would be monitored regularly, and repairs made as needed.

2.5.13 Noxious Weeds and Invasive Nonnative Species

Noxious and invasive nonnative species management would follow procedures in place at Lone Tree Mine for noxious weed management. Newmont recognizes the economic and environmental impact that can result from the establishment of noxious weeds and has committed to a proactive approach to weed control. A noxious weed monitoring and control plan has been developed for the Lone Tree Mine. The plan would be in place throughout operations. The plan contains risk assessment, management strategies, provisions for annual monitoring and treatment evaluation, and provisions for treatment. Annual weed surveys would be conducted in order to direct weed control efforts. The results from annual monitoring would be the basis for updating the plan and developing annual treatment programs. Monitoring for infestations and weed control efforts would continue until reclamation is complete in order to minimize the potential for weed invasion.

2.5.14 Fire Protection Measures

All reasonable measures would be taken to prevent and suppress fires in the Project Area. The Brooks project would operate in conformance with applicable state and federal fire laws and regulations, including MSHA safety regulations (30 CFR 1-199), State Fire Marshal standards, and the Lone Tree Contingency and Emergency Response Plan (Newmont 2012a). All equipment would be properly muffled and equipped with suitable and necessary fire suppression equipment, such as fire extinguishers and hand tools.

Fire protection for the project would be accomplished using the existing Lone Tree Mine protocols. The primary method of fire suppression for the Lone Tree Mine is by the large water trucks used for dust suppression in support of the daily mining operations. Fresh water for fire suppression would be supplied to the water trucks via existing spigots at the Lone Tree Mine fresh water tank. A loaded water truck, with operator, is readily available to minimize the emergency response time.

2.5.15 Public Safety Measures

Public safety would be maintained throughout the life of the Brooks project. All equipment and other facilities would be maintained in a safe and orderly manner.

Newmont's operations are subject to the Federal Mine Safety and Health Act of 1977, which sets forth mandatory safety and health standards for metal mines, including open pit mines. The purpose of the standards is the protection of life, promotion of health and safety, and prevention of accidents. Regulations issued under MSHA are codified under 30 CFR Subchapter N, Part 56.

In the event that any existing roads in the Project Area are severely damaged as a result of project activities, Newmont would return them as close as possible to their original condition.

2.5.16 Visual Resources

The following environmental protection measures would be incorporated into the Proposed Action to avoid impacts to visual resources including night skies:

If lighting is necessary, portable light plants would be used in place of facility-wide overhead lighting. If it would not interfere with safety, directional lighting would be used. This would include aiming lights downward or towards existing highwalls to avoid directing light to adjacent land. Hooding and shielding of the lights would also be used.

2.5.17 Additional Mitigation Measures from the Lone Tree EIS ROD

The mitigation measures listed below are taken from the ROD for the Lone Tree Mine Final EIS, dated October 15, 1996, and are specifically applicable to this Proposed Action. Be advised, not all details of the mitigation measures are applicable to this action, however the mitigation measures are provided in their entirety. Some examples of details that are not applicable for this proposal include actions on private land, descriptions of water quality, tailing impoundment and leach pads. These items do not pertain to the current Proposed Action since there are no private land, water quality, tailings impoundment or heap leach issues associated with this action. Additionally, when referencing the operator, Santa Fe Pacific Gold (a.k.a. SFPG) has been replaced with Newmont. The relevant mitigation measures are:

SOILS

Impacts from compaction are to be reduced by ripping and scarifying oxide overburden after placement.

In order to reduce soil loss and uncontrolled rilling and gulying on overburden faces, Newmont shall contour the tops of overburden disposal facilities to direct runoff inward on each bench or down dump faces into existing drainage bottoms (if water quality is acceptable).

Varying slope gradients are to be constructed on overburden disposal and heap leach areas to create more drainage diversity.

Newmont shall stabilize growth medium stockpiles by revegetating with an appropriate [BLM-approved] seed mixture.

RECREATION

Following the completion of mining operations, Newmont shall exclude access and mitigate safety hazards posed by pit walls by reclaiming all pit access roads. On private land, a 4-strand barbed wire fence will be constructed around the perimeter of the open pit approximately 100 feet back from the highwall edge. On public land, a berm will be constructed around the perimeter of the open pit approximately 100 feet back from the highwall edge. The fence and berm shall be posted with warning signs spaced every 2000 feet. The signs would be fabricated of metal warning visitors of unstable conditions and hazards. Signs shall also be installed warning the public of water quality conditions.

TERRESTRIAL WILDLIFE

Reclamation of overburden disposal areas and leach pads will incorporate the following measures which are intended to enhance the post mining wildlife habitat values of these sites.

- a. Individual boulders, rock piles, and areas resembling rock slides will be installed to provide diversity of habitat and perching, feeding, and loafing areas for resident raptor, small mammal, and reptile species inhabiting these sites. The location, distribution, size, and density of these areas will be determined with consultation from the BLM.
- b. During reclamation, surfaces of both side slopes and tops of overburden areas, heap leach pads, and tailings facility will be graded to incorporate a series of swales and irregularities in the contour surface, generating micro climates for post mining flora.

AIR RESOURCES

Fugitive dust from all disturbed areas and unpaved roads during the mine life would be controlled using water sprays, chemical stabilization or other dust controls approved by the Nevada Division of Environmental Protection (NDEP).

GEOLOGY

Overall side slopes of the overburden disposal areas will be 3H:1V. Reclamation goals for the overburden dumps will include ensuring slope stability, design more natural appearing slopes blending with surrounding topography, and minimize erosion and excessive soil loss.

All overburden and interburden disposal areas, tailings impoundment, and heap leach pads [at the Lone Tree Mine] are to be designed, constructed and maintained ensuring stability during and post mining. Newmont shall apply mitigating measures for slump failures of overburden disposal areas, tailings impoundment and leach pads, including monitoring for slump failures of facilities during mining operations. In the event such monitoring identifies advanced signs of slope or slope failure, Newmont shall take remedial action to alleviate the problem, including performing the necessary earthwork to stabilize slump or slope failure and establish appropriate drainage, to deter unstable conditions in a manner acceptable to the BLM authorized officer.

VISUAL

To eliminate flat surfaces on overburden dumps and heap leach pads, the surfaces shall be recontoured and a sufficient number of large boulders of rock shall be placed on the tops of these facilities.

The long straight profiles of the overburden dumps shall be broken up by creating pseudo-drainages along the faces of the dumps.

Edges of overburden embankments will be rounded to reduce angular appearance and soften edges.

VEGETATION

Revegetation success standards are to be determined by attachment B of the “Nevada Interim Standards for Successful Revegetation.”

Disturbed and reclaimed areas shall be monitored to determine if undesirable species are becoming established. If weeds become a problem, a control plan shall be developed and approved by the BLM.

The operator shall be responsible for controlling all noxious weeds and other undesirable invading plant species in disturbed areas until revegetation activities have been determined successful and signed off by the BLM authorized officer. The operator shall obtain approval from the authorized officer prior to any and all application of herbicide. All seed shall be tested for noxious, poisonous, or prohibited plant species and the test results submitted to and approved by the BLM, unless certified weed free seed is procured.

CULTURAL

Newmont shall comply with requirements of the Surface Management Regulations 43 CFR 3809.420(b)(8) pertaining to cultural and paleontological resources. Project workers shall be instructed in cultural resource protection laws and associated

responsibilities. If any new cultural resource sites not previously identified in the cultural resource inventories are encountered during facility construction and or operational activities, work shall stop at the particular location and Newmont shall notify the Winnemucca District of the BLM. Work at the location shall be deferred until the BLM Winnemucca District office directs Newmont on how to proceed.

Newmont must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined at 43 CFR 10.2). In the event that a discovery is found, Newmont must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

2.6 No Action Alternative

Under the No Action Alternative Newmont would continue to manage the Lone Tree Mine in care and maintenance status. The current heap leach reprocessing project would be completed in early 2015 and some of the current workforce may be laid off. Other members of the workforce may be relocated to Newmont operations in the vicinity. In the Project Area, up to five acres of exploration-related surface disturbance could occur under the Brooks project notice.

2.7 Alternatives Considered But Not Analyzed in Detail

No unresolved resource conflicts were identified during this impact analysis that would necessitate the development of an action alternative.

2.8 Conformance

The Project Area is subject to the BLM, Winnemucca District, Sonoma-Gerlach Management Framework Plan, dated July 9, 1982. Objective M-1 of the Sonoma-Gerlach Management Framework Plan states: "Make all public lands and federally owned minerals available for the exploration and development of mineral and material commodities." The Proposed Action is in conformance with the Sonoma-Gerlach Management Framework Plan.

2.9 Relationship to Laws, Regulations, and Other Plans

This EA has been prepared in accordance with the following statutes and implementing regulations, policies, and procedures, and is consistent with other federal agency, state, and local plans to the maximum extent consistent with federal law and FLPMA provisions:

- The NEPA of 1969, as amended (Public Law 91-190, 42 United States Code §4321) (*et seq.*);

- 40 CFR §1500 (*et seq.*). Regulations for Implementing the Procedural Provisions of the NEPA;
- The Council on Environmental Quality’s *Considering Cumulative Effects under NEPA* (1997);
- 43 CFR Part 46, Implementation of the NEPA of 1969; Final Rule, effective November 14, 2008;
- BLM NEPA Handbook (H-1790 1), as updated (BLM 2008a);
- 43 CFR 3809: Surface Management;
- 43 CFR 3715: Use and Occupancy under the Mining Laws;
- Mining and Mineral Policy Act of 1970;
- Nevada Administrative Code 519A; and,
- Humboldt County Regional Master Plan (Humboldt County 2014).

3.0 The Affected Environment

The BLM is required to consider specific elements of the human environment that are subject to requirements specified in statute or regulation or by executive order. Tables 3-1 and 3-2 outline the elements that must be considered in all environmental analyses, as well as additional resources deemed necessary for evaluation by the BLM. In these tables, marking a resource as “Present/Not Affected” does not necessarily mean that no impacts would occur to that resource, but rather, that impacts to the resource are not expected to be substantial enough to require detailed analysis.

Table 3-1: Supplemental Authority Elements Considered for Analysis

Supplemental Authority Element	Not Present	Present/Not Affected	Present/May Be Affected	Rationale
Air Quality			✓	See chapters 3.1, 4.1.1, and 4.2.3.1.
Area of Critical Environmental Concern (ACEC)	✓			The Project Area is not in a designated ACEC. The purpose and need of this EA is not to evaluate the Project Area's potential to be an ACEC. ACECs are nominated during the resource management planning process per 43 CFR 1610.7-2.
Cultural Resources (including National Historic Trails)			✓	See chapters 3.2, and 4.1.2.
Environmental Justice	✓			Based on results of a review of existing baseline data, Environmental Justice concerns were not identified in relation to the Project. Therefore, this element is not addressed further in this EA.
Farm Lands (Prime or Unique)	✓			Resource is not present.
Floodplains	✓			Resource is not present.
Invasive, Non-Native Species		✓		Newmont has developed a Weed Management Plan that proposes to minimize the extent and impact of all weeds, including invasive, nonnative, and noxious species. Based on the implementation of this plan as an environmental protection measure in the Proposed Action, introduction or spread of invasive, nonnative species is not an issue requiring analysis.
Migratory Birds			✓	See chapters 3.3, 4.1.3, and 4.2.3.2
Native American Religious Concerns		✓		See chapter 6.2 for details regarding Native American consultation.

Supplemental Authority Element	Not Present	Present/Not Affected	Present/May Be Affected	Rationale
Threatened, Endangered Species	✓			Coordination was conducted with the United States Fish and Wildlife Service (USFWS) on December 2, 2014 and two species listed under the Endangered Species Act (ESA) were identified as having potential to occur within the Project Area: Lahontan cutthroat trout (LCT) (<i>Oncorhynchus clarkii henshawi</i>) a threatened species, and Whitebark pine (<i>Pinus albicaulis</i>) a candidate species. LCT species does not occur within the Project Area as no aquatic habitat exists within the Project Area or up to ½-mile from the Project Area. Whitebark pine does not occur within the Project Area or within a 4-mile vicinity of the Project Area as there are no trees or forested habitats to support the growth of trees.
Wastes, Hazardous and Solid		✓		This resource has been determined as present and unaffected by resource specialists.
Water Quality (Surface/Ground)		✓		This resource has been determined as present and unaffected by resource specialists. See rationale in chapter 1.5.
Wetlands and Riparian Zones	✓			Resource is not present.
Wild & Scenic Rivers	✓			Resource is not present.
Wilderness	✓			Resource is not present.

Other elements or resources of the human environment that have been considered for the EA are listed in Table 3-2. The rationale for each element that would not be affected by the Proposed Action or No Action Alternative is listed in the table.

Table 3-2: Additional Resources Considered for Analysis

Other Resources	Not Present	Present/Not Affected	Present/May Be Affected	Rationale
Geology and Minerals		✓		See rationale in chapter 1.5.
Lands With Wilderness Characteristics	✓			The project falls within wilderness characteristic inventory unit NV-020-418. Wilderness characteristics for these units were reviewed. Historical inventories had determined these areas did not qualify for further inventory and should be dropped from the wilderness review process. Current reviews concurred that the areas do not meet the criteria for Lands with Wilderness Characteristics due to checkerboard land status pattern. No further analysis is recommended.
Paleontology	✓			The project area falls within areas ranked low to moderate (PFYC 2, 3, and 3b) for potential fossil yield. The Havallah sequence deposits in the project area were judged unlikely to produce significant fossils, and therefore, no further environmental analysis is necessary.
Rangeland Management		✓		See rationale in chapter 1.5.
Soils		✓		See rationale in chapter 1.5.
Special Status Species			✓	See chapters 3.4, 4.1.4, and 4.2.3.
Vegetation			✓	See chapters 3.5, and 4.1.5.
Visual Resources		✓		See chapters 3.2 and 4.2 for National Historic Trails.
Water Quantity		✓		See rationale in chapter 1.5.
Wild Horses and Burros	✓			There are no wild horses, wild burros, or Herd Management Areas for either animal within the Project Area. Resource is not present.
Wildlife			✓	See chapters 3.6, 4.1.6, and 4.2.3.

The following chapters describe the affected environment for each resource that is present in Project Area and potentially affected by the Proposed Action. The assessment area is described for each affected resource or element under its respective section.

Supplemental Authorities

3.1 Air Quality

3.1.1 Regulatory Framework

The regulatory framework for air quality includes state and federal statutes, regulations, and standards. The Environmental Protection Agency (EPA) codifies the air quality framework and delegates the NDEP, Bureau of Air Quality Planning (BAQP), and Bureau of Air Pollution Control to implement and enforce the state and federal statutes, regulations, and standards. The legal requirements applicable to the Proposed Action and alternatives include the following: The Clean Air Act (CAA), as amended (42 USC 7401 et seq.), National Ambient Air Quality Standards (NAAQS), National Emission Standards for Hazardous Air Pollutants, Federal Operating Permit Program (Title V), and State of Nevada air quality regulation and standards for permits to operate under NAC 445B Air Controls.

The CAA required the EPA to establish the NAAQS for pollutants considered harmful to public health and the environment. These pollutants are referred to as criteria pollutants and include carbon monoxide (CO), lead, nitrogen dioxide (NO₂), ozone, particulate matter 10 microns in diameter or less (PM₁₀), particulate matter 2.5 microns in diameter or less (PM_{2.5}), and sulfur dioxide (SO₂). Table 3-3 lists the final amended rule of the NAAQS as signed on June 2, 2010 and reference to the respective pollutants and when it was posted in the Federal Register.

Table 3-3: National Ambient Air Quality Standards

Pollutant [final rule cite]		Primary / Secondary	Averaging Time	Level	Form
Carbon Monoxide [76 FR 54294, Aug 31, 2011]		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead [73 FR 66964, Nov 12, 2008]		primary and secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded
Nitrogen Dioxide [75 FR 6474, Feb 9, 2010] [61 FR 52852, Oct 8, 1996]		primary	1-hour	100 ppb	98 th percentile, averaged over 3 years
		primary and secondary	Annual	53 ppb	Annual Mean
Ozone [73 FR 16436, Mar 27, 2008]		primary and secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution 14-Dec-12	PM _{2.5}	primary	Annual	12 µg/m ³	annual mean, averaged over 3 years
		secondary	Annual	15 µg/m ³	annual mean, averaged over 3 years
		primary and secondary	24-hour	35 µg/m ³	98 th percentile, averaged over 3 years
	PM ₁₀	primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide [75 FR 35520, Jun 22, 2010] [38 FR 25678, Sept 14, 1973]		primary	1-hour	75 ppb	99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: EPA 2013

ppm = parts per million

µg/m³ = micrograms per cubic meter

ppb = parts per billion

The EPA developed a classification system for distinct air pollution control regions pursuant to the CAA. In Nevada, the regions are based on geographical boundaries and hydrographic basins. Each region has been classified as Attainment, Non-Attainment, or Maintenance for each of the criteria air pollutants. Regions classified as in Attainment are areas in which a pollutant has either not exceeded the NAAQS or there has not been sufficient ambient monitoring data to further classify the region. A Non-Attainment classification represents an area in which a pollutant has exceeded the NAAQS. The Maintenance designation is used for areas in which a pollutant has exceeded the NAAQS, but has since been reduced to attainment levels.

The CAA also required the EPA to significantly limit the deterioration of air quality in specific areas. The EPA has developed a classification system of areas for the Prevention of Significant Deterioration (PSD) regulations. The most restrictive category is the Class I Area and the least

restrictive category is the Class III Area. The Class I Areas include National Parks, Wilderness Areas, which exceed 5,000 acres and were in existence prior to 1977, and areas that have been designated as Class I Areas under the PSD regulation in 40 CFR 52.21. All regions not designated as Class I Areas are considered Class II Areas. No Class III Areas have been designated. The federal PSD regulations limit the maximum allowable pollutant emissions increases in Class I, Class II, and Class III Areas as seen in Table 3-4.

Table 3-4: Prevention of Significant Deterioration Limits

Pollutant	Averaging Time	Maximum Allowable Increase (µg/m ³)		
		Class I Area	Class II Area	Class III Area
PM _{2.5}	Annual	1	4	8
	24-hour	2	9	18
PM ₁₀	Annual	4	17	34
	24-hour	8	30	60
SO ₂	Annual	2	20	40
	24-hour	5	91	182
	3-hour	25	512	700
NO ₂	Annual	2.5	25	50

Source: GPO 2013

There are no Class I Areas located within 100 kilometers of the project area. The Jarbidge Wilderness Area is located approximately 180 kilometers northeast of the project area. The Project Area is located in portions of the Clovers Area Hydrographic Area 64 and the Pumpnickel Valley Hydrographic Basin 65. The Clovers Area was identified as a PSD area on March 2, 1977 from an application submitted to NDEP by Sierra Pacific Power Company for the Valmy Power Station (NDWR 2013). The application exceeded the minor source baseline for SO₂ and PM₁₀. The baseline was set for the pollutants that were reviewed under the 1977 application and increment consumption is evaluated for changes that occur after the date throughout the Clovers Area.

The CAA also enacted the New Source Performance Standards (NSPS) for specific types of new or modified equipment located at affected sources. The NSPS regulations limit emissions from source categories to minimize the deterioration of the ambient air quality. In addition to the NSPS regulations, the CAA also enacted the National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations, which focus on pollutants known to cause serious health effects or serious environmental effects. The project area includes equipment that is subject to various NSPS and NESHAP regulations.

The 1990 CAA Amendment introduced a new facility-wide federal operating permit program, the Title V Permit. Title V Permits are required for facilities with the potential to emit greater than 100 tons per year of a regulated pollutant, 10 tons per year of any single hazardous air

pollutant, or 25 tons per year of any combination of hazardous air pollutants. In addition, emission units subject to 40 CFR Part 63 – National Emission Standards for Hazardous Air Pollutants: Gold Mine Ore Processing and Production Area Source Category are required to be permitted under a Title V Permit (for mercury emissions).

Greenhouse gases as defined by the EPA include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (NO_x), and fluorinated gases (EPA 2013b). Combustion of fossil fuels results in emissions of greenhouse gases. The *Final Mandatory Reporting of Greenhouse Gases Rule* issued by the EPA, as signed on September 22, 2009, requires suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of greenhouse gas emissions to submit annual reports to the EPA.

3.1.2 Assessment Area

Activities associated with the Proposed Action would occur along the boundary between the Clovers Area Hydrographic Basin 64 with an area of 460,800 acres, and the Pumpnickel Valley Hydrographic Basin 65 with an area of 191,360 acres. The area of analysis for air quality includes the predicted maximum impact area where air dispersion modeling showed a potential contribution to the ambient air quality from the Proposed Action. Generally speaking, the potential contribution to the ambient air quality is contained within the Project Area for the direct and indirect impact analysis.

3.1.3 Affected Environment

The Brooks project is located in the central portion of the Great Basin, situated in the Basin and Range physiographic province northeast of Buffalo Mountain, and south of Interstate-80. Elevations in the Project Area range from approximately 4,625 feet to 5,125 feet amsl.

The terrain within the Project Area slopes upward toward the southwest as it approaches Buffalo Mountain. The climate and vegetation in the Project Area are typical of the desert environment of the northern Basin and Range Province. The climate is semi-arid with wide fluctuations in seasonal temperatures. Temperatures during the summer months have an average daily maximum of 87 °F with minimum daily temperatures of 48 °F. In the winter months, the average temperature is 43 °F with an average daily minimum of 19 °F (USDA NRCS 2012). The average annual precipitation is 8.85 inches which falls primarily as snow (USDA NRCS 2012).

Table 3-5 summarizes the meteorological conditions found in the vicinity of the project area.

Table 3-5: Meteorological Conditions Near the Project Area

Monitor	Elevation (feet)	Winter	Spring	Summer	Fall	Annual
Mean Seasonal Temperature Average (degrees Fahrenheit)						
Battle Mountain	4,510	30.5	47.9	70.6	50.4	49.9
Battle Mountain 4 SE	4,530	30.9	47.9	69.2	49.2	49.3
Cortez	4,910	32.0	47.5	71.2	50.2	50.2
Reese Valley Carper	4,910	30.6	44.0	64.5	47.4	46.7
Buffalo Ranch	5,430	34.5	47.5	70.9	52.5	51.4
Golconda	4,390	31.1	48.2	69.8	49.6	49.7
Mean Seasonal Precipitation Average (inches)						
Battle Mountain	4,510	2.20	2.00	0.82	1.28	6.30
Battle Mountain 4 SE	4,530	2.19	2.73	1.38	1.80	8.10
Cortez	4,910	2.44	3.01	1.89	2.36	9.71
Reese Valley Carper	4,910	2.39	3.01	1.47	2.35	9.21
Buffalo Ranch	5,430	4.57	3.55	2.68	2.80	13.60
Golconda	4,390	2.05	2.00	1.03	1.41	6.50
Mean Snow Fall Average (inches)						
Battle Mountain	4,510	7.3	1.7	0.0	1.2	10.2
Battle Mountain 4 SE	4,530	14.5	5.3	0.0	2.2	22.0
Cortez	4,910	12.0	4.3	0.0	2.0	18.2
Reese Valley Carper	4,910	8.7	3.4	0.0	1.3	13.3
Buffalo Ranch	5,430	18.5	5.9	0.0	2.3	26.7
Golconda	4,390	9.7	2.5	0.0	1.8	14.0
Mean Snow Cover Average (inches)						
Battle Mountain	4,510	0.0	0.0	0.0	0.0	0.0
Battle Mountain 4 SE	4,530	0.7	0.0	0.0	0.0	0.0
Cortez	4,910	0.0	0.0	0.0	0.0	0.0
Reese Valley Carper	4,910	0.3	0.0	0.0	0.0	0.0
Buffalo Ranch	5,430	0.7	0.0	0.0	0.0	0.0
Golconda	4,390	0.0	0.0	0.0	0.0	0.0

Source: WRCC 2013

The area of analysis and immediate surrounding areas are currently classified as a minor PSD increment tracked area through the BAQP for SO₂ and PM₁₀ pollutants, all other criteria pollutants are in attainment or unclassified. Monitoring of criteria pollutants has been discontinued in the area since the late 1990s when the EPA allowed monitoring to cease where monitoring showed less than 60 percent of the NAAQS. The closest ongoing PM₁₀ monitoring station is located in the city of Elko, Nevada. This monitoring station is located approximately 125 kilometers to the east of the Project Area in an urban developed area and unsuited for use in the rural locale of the project area. The next closest ongoing PM₁₀ monitoring station is located

approximately 300 kilometers southeast of the project area in the Great Basin National Park. This monitoring station indicates the low particulate levels as expected in rural Nevada. Monitoring data from the Lehman Caves in Great Basin National Park is used to simulate background concentrations for air quality permitting at the Nevada BAPC. The values used are $10.2 \mu\text{g}/\text{m}^3$ for the 24-hour averaging period and $9.0 \mu\text{g}/\text{m}^3$ for the annual averaging period. The $\text{PM}_{2.5}$ background concentrations are estimated from the Interagency Monitoring of Protected Visual Environments station that monitors aerosol data in the Great Basin National Park. The three year weighted average for the 24-hour averaging period is $7 \mu\text{g}/\text{m}^3$ and $2.4 \mu\text{g}/\text{m}^3$ for the annual averaging period.

Gaseous pollutants are typically monitored near highly populated and industrialized urban areas. The project area is located in a rural area where gaseous concentrations are expected to be low. The Nevada BAPC recommends using zero for background concentrations of gaseous pollutants in rural Nevada. Due to the lack of monitoring data available for rural areas such as the project area and the recommendation from the Nevada BAPC, background concentrations of CO, nitrogen oxide (NO_x), SO_2 , and volatile organic compounds would be assumed to be zero for the project area baseline level.

Existing Air Pollution Sources

The project shares Hydrographic Basin 64 with Sierra Pacific Power Company's Valmy Power Station, which is a significant source of emissions for EPA PSD purposes. In 1977, the basin was identified as a minor source for particulate matter and sulfur dioxide. As such, changes to sources within the basin may be constrained in regards to the amount of particulate matter and sulfur dioxide emissions that can be increased.

Operations at the Lone Tree Mine are currently permitted through the BAPC with a Class II Air Quality Operating Permit.

Climate Change

Ongoing scientific research indicates that anthropogenic (i.e., human caused) GHG emissions and changes in biological carbon sequestration, due to land management activities, potentially impact global climate. Through complex interactions on a global scale, GHG emissions and net losses of biological carbon sinks lead to a net warming of the atmosphere. GHGs have been found to be capable of trapping heat in the atmosphere thereby decreasing the amount of heat radiated by the Earth out to space. The GHG emissions are comprised of many separate chemicals, the most notable is carbon dioxide (CO_2) from fossil fuel development, large wildland fires, and activities using combustion engines. The leading causes of GHG emissions in 2005 for Nevada were attributed to electrical generation (approximately 48 percent) and transportation (approximately 30 percent). Lesser causes included resident/commercial fuel use (approximately

seven percent), industrial fuel use (approximately five percent), industrial processes (approximately five percent), agriculture (approximately three percent), waste (approximately two percent), and fossil fuel industry (approximately one percent). Nevada historical data, measured since 2005, indicated that CO₂ represents approximately 91 percent of GHG emissions with methane, nitric oxide, and hydrofluorocarbons/perfluorocarbons representing approximately four percent, three percent, and two percent, respectively (NDEP 2008). By 2020, transportation is expected to account for 33.2 percent of statewide GHG emissions.

Current emissions within the vicinity of the project area include electrical generation, vehicle combustion emissions, fugitive dust from travel on unimproved roads, mine activities, and wildland fires. Future actions would have incremental impacts on CO₂ emissions, however, the tools necessary to quantify incremental climate impacts of specific actions are presently not available. Specific levels of significance have not been established.

Existing climate prediction models are global in nature; therefore, they are not at the appropriate scale to estimate potential impacts of climate change within the Clover Area and Pumpnickel Valley Hydrographic Basins. Due to the nature and scale of the Proposed Action, effects on climate change are not further analyzed in the EA.

3.2 Cultural Resources

3.2.1 Regulatory Framework

The National Historic Preservation Act of 1966, as amended (NHPA) and the Archaeological Resources Protection Act of 1979 (ARPA) are the primary laws regulating preservation of cultural resources. Federal regulations obligate federal agencies to protect and manage cultural resource properties.

The NHPA sets forth procedures for considering effects to historic properties and supports and encourages the preservation of prehistoric and historic resources. It directs federal agencies to consider the impacts of their actions on historic properties. The NHPA established the Advisory Council on Historic Preservation (ACHP) and tasked the ACHP with administering and participating in the preservation review process established by Section 106. Section 106 of the NHPA, as amended, requires federal agencies to take into account any action that may adversely affect any structure or object that is, or can be, included in the National Register of Historic Places (NRHP). These regulations, codified at 36 CFR 60.4, provide criteria to determine if a site is eligible. Beyond that, the regulations define how those properties or sites are to be dealt with by federal agencies or other involved parties. These regulations apply to all federal undertakings and all cultural (archaeological, cultural, and historic) resources.

The purpose of ARPA is to secure the protection of archaeological resources and sites that are on public lands and Indian lands and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources.

National Historic Trail

In September, 2012, the BLM released *Manual 6280 – Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation (Public)*. As described in BLM Manual 6280, National Historic Trails (NHT) are managed to recognize the nationally significant resources, qualities, values, and associated settings of the areas through which such trails may pass, including the primary use or uses of the trail. Properties eligible for the NRHP may be identified along the NHT, including segments of the NHT.

3.2.2 Assessment Area

The assessment area for cultural resources is the Project Area, including the proposed fence line.

National Historic Trail

The assessment area for NHT includes all areas where the Proposed Action would be visible when standing on the NHT or its projected route. To determine the extent of the assessment area a visual analysis was prepared using ArcGIS mapping software. Figure 9 shows the assessment area and key observation points used to assess impacts to the quality, value, and setting of the California NHT.

3.2.3 Affected Environment

One Class I inventory (Spath 2013) and two Class III inventories, CR2-3255(P) and CR2-3273(N) (Spath 2014 a, b), which cover the entire Project Area, including the fence line, have been completed. A total of 5 new cultural resource sites, CrNV-02-12492 to -12496 were recorded. Two other previously recorded sites CrNV-02-5550 and CrNV-22-5551 were revisited and rerecorded. All seven sites were determined to be ineligible to the National Register of Historic Places. In addition to these sites, 2 isolated artifacts were recorded.

National Historic Trail

The California NHT, CrNV-02-3305/26CH1772, is located approximately three to five miles north of the proposed Brooks Project Area and generally parallels Interstate-80. While these segments of the trail have not been inventoried, recorded on IMACs forms or evaluated for the National Register of Historic Places, they have been mapped by the Oregon-California Trails Association (OCTA) and Trails West historic trails expert, Don Buck. Most of the trail segments

in the view shed of the proposed project are rated as Class 1 or Class 2 segments utilizing OCTA's trail rating system (Trail Mapping Committee 2002:13). There is also one Class 5 segment. Trails West (Brock and Buck 2007) has also prepared a guide for trail travelers which includes maps, directions, detailed descriptions and emigrant diary accounts for this section of the trail. Trails West has also installed three markers, markers # C-57, C-57A and C-58 along the trail within the view shed,. Marker C-57 is at Treaty Hill, C-57A was a major camping area and C-58 at Iron Point was the site of the famous Donner Party fight between Reed and Snyder which culminated in the death of Snyder.

The California NHT setting in the area of the Brooks project is the Humboldt River valley at a point where it is intersected by two tributary drainage basins. The Pumpernickel Valley, lying between Buffalo Mountain and the Edna Mountains, is on the south of the Humboldt River and is drained by intermittently flowing Ragan Creek. On the north side of the Humboldt River is Kelly Creek which drains the southern portion of the Snowstorm Mountains and the Osgood Mountains. Kelly Creek crosses the extensive lowland area known as Red House Flat. The area has modern developments such as the Valmy Power Station and its associated high voltage electrical transmission lines and the existing Lone Tree Mine open pit, waste rock storage, heap leach facilities, and ancillary buildings. The area is also crossed by major transportation features, as Interstate-80 and the active Union Pacific Railroad line follow the route of the California NHT. The abandoned Central Pacific railroad line lies very near the mapped segments of the California NHT.

Along the portion of the trail closest to the proposed Brooks project, within approximately 3 to 5 miles of the trail, the integrity of feeling is degraded by the modern cultural features. North of this area, the California NHT and Humboldt River move away from the west trending Interstate-80 alignment and the transmission lines from the Valmy Power Station, which trend to the southwest and east. The Union Pacific Railroad line remains on the north side of the Humboldt River. In this area, the integrity of feeling is less degraded.

Even with the degrading factors noted above, the sense of association with the 19th Century westward movement and its hardships remains. At Trails West Marker C-58 at Iron Point, the site of the Reed-Snyder fight, the conditions appear to be very little changed and, in the geometric view shed of the Brooks pit, none of the proposed development would actually be visible to the casual observer. At this location, the link with the conditions along the California NHT in the mid-19th Century is very strong.

3.3 Migratory Birds

3.3.1 Regulatory Framework

“Migratory bird” means any bird listed in 50 CFR 10.13. All native birds commonly found in the U.S., with the exception of native resident game birds, are protected under the Migratory Bird Treaty Act (MBTA). The MBTA prohibits the taking of migratory birds, their parts, nests, eggs, and nestlings without a permit. EO 13186, signed January 10, 2001, directs federal agencies to protect migratory birds by integrating bird conservation principles, measures, and practices.

Additional direction comes from the Memorandum of Understanding (MOU) between the BLM and the United States Fish and Wildlife Service (USFWS), signed January 17, 2010. The purpose of this MOU is to strengthen migratory bird conservation through enhanced collaboration between the BLM and the USFWS, in coordination with state, tribal, and local governments. The MOU identifies management practices that impact populations of high-priority migratory bird species, including nesting, migration, or over-wintering habitats, on public lands, and develops management objectives or recommendations that avoid or minimize these impacts.

3.3.2 Assessment Area and Study Methods

Assessment Area

The assessment area for direct and indirect effects on migratory birds includes the modified POO boundary, the haul road, and the fence line with a ¼ mile buffer as shown on Figure 10. The assessment area for direct and indirect effects on migratory raptors is a 10-mile radius around the Project Area, as shown on Figure 11.

Study Methods

For all biological studies associated with the Proposed Action, the Nevada Department of Wildlife (NDOW), the Nevada Natural Heritage Program (NNHP), and USFWS were contacted to receive information on raptor and wildlife use within the Project Area and vicinity.

The Project Area was surveyed by ARCADIS U.S., Inc (ARCADIS) on July 30 and 31, 2013 for migratory birds. The Marigold Mine had raptor nesting surveys conducted on April 22, 2013 within a 10-mile radius of the plan of operations boundary whose northwest boundary is located approximately 1.5 miles southeast of the Brooks Project area. Due to proximity between Marigold Mine and the Brooks Project area, much of the Brooks Project area and 10-mile buffer overlaps with the Marigold Mine survey area. ARCADIS conducted ground surveys for migratory raptors and their nest sites on June 11 and 12, 2013 within the northwest portion of the Brooks Project area’s 10-mile buffer. ARCADIS conducted surveys for raptors on July 30 and

31, 2013 along utility corridors in close proximity (approximately 2 miles) to the Project area to observe potential nesting habitat.

3.3.3 Affected Environment

Vegetation within the Project Area is primarily comprised of Inter-Mountain Basins Big Sagebrush Shrubland (60 percent of Project Area), Great Basin Xeric Mixed Sagebrush Shrubland (18 percent of Project Area), Inter-Mountain Basins Mixed Salt Desert Scrub (17 percent of Project Area), and Invasive Annual Grassland (5 percent of Project Area) vegetation communities and can provide breeding and foraging habitat for a variety of migratory birds. A representative, but not exclusive list of migratory birds which may utilize these habitats can be found in Table 3-6.

The NDOW identified other non-special status migratory birds that are known to reside in the vicinity (four-mile radius) of the Project Area and include the following: Cooper's hawk (*Accipiter cooperii*); long-eared owl (*Asio otus*); merlin (*Falco columbarius*); northern saw-whet owl (*Aegolius acadicus*); osprey (*Pandion haliaetus*); sharp-shinned hawk (*Accipiter striatus*); short-eared owl (*Asio flammeus*); and western screech-owl (*Megascops kennicottii*) (ARCADIS 2013). The prairie falcon and short-eared owl are identified as NDOW species of special concern.

The rock wren (*Salpinctes obsoletus*), cliff swallow (*Petrochelidon pyrrhonota*), and western meadowlark (*Sturnella neglecta*) were observed during the June 2013 habitat evaluation. The sage sparrow (*Artemisiospiza belli*) was observed in the Project Area during July 2013 field surveys, and horned larks (*Eremophila alpestris*) were observed during site visits by BLM in 2014.

Special status bird species are discussed in section 3.4.

Table 3-6: Migratory Birds Which May Utilize Project Area

Common Name	Scientific Name	Common Name	Scientific Name
American crow	<i>Corvus brachyrhynchos</i>	Lark sparrow	<i>Chondestes grammacus</i>
American goldfinch	<i>Spinus tristis</i>	Lazuli Bunting	<i>Passerina amoena</i>
American kestrel	<i>Falco sparverius</i>	Lesser goldfinch	<i>Spinus psaltria</i>
American tree sparrow	<i>Spizella arborea</i>	Mourning dove	<i>Zenaida macroura</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>	Northern harrier	<i>Circus cyaneus</i>
Barn owl	<i>Tyto alba</i>	Northern mockingbird	<i>Mimus polyglottos</i>
Black-billed magpie	<i>Pica hudsonia</i>	Northern shrike	<i>Lanius excubitor</i>
Black-throated sparrow	<i>Amphispiza bilineata</i>	Pine siskin	<i>Spinus pinus</i>
Blue-gray gnatcatcher	<i>Poliopitila caerulea</i>	Prairie falcon	<i>Falco mexicanus</i>
Brewer’s blackbird	<i>Euphagus cyanocephalus</i>	Red-tailed hawk	<i>Buteo jamaicensis</i>
Bushtit	<i>Psaltriparus minimus</i>	Rough-legged hawk	<i>Buteo lagopus</i>
Common nighthawk	<i>Chordeiles minor</i>	Sage sparrow	<i>Artemisiospiza belli</i>
Common poorwill	<i>Phalaenoptilus nuttallii</i>	Say’s Phoebe	<i>Sayomis saya</i>
Common raven	<i>Corvus corax</i>	Song sparrow	<i>Melospiza melodia</i>
Dark-eyed junco	<i>Junco hyemalis</i>	Spotted towhee	<i>Pipilo maculatus</i>
Gray flycatcher	<i>Empidonax wrightii</i>	Townsend’s Solitaire	<i>Myadestes townsendii</i>
Gray-crowned rosy-finch	<i>Leucosticte tephrocotis</i>	Turkey vulture	<i>Cathartes aura</i>
Great horned owl	<i>Bubo virginianus</i>	Vesper sparrow	<i>Pooecetes gramineus</i>
Green-tailed towhee	<i>Pipilo chlorurus</i>	Western kingbird	<i>Tyrannus verticalis</i>
Horned lark	<i>Eremophila alpestris</i>	Western meadowlark	<i>Sturnella neglecta</i>
House finch	<i>Haemorhous mexicanus</i>	White-crowned sparrow	<i>Zonotrichia leucophrys</i>
Killdeer	<i>Charadrius vociferus</i>	White-throated swift	<i>Aeronautes saxatalis</i>
Lapland longspur	<i>Calcarius lapponicus</i>		

Source: ARCADIS 2013

Additional Affected Resources

3.4 Special Status Species

3.4.1 Regulatory Framework

BLM policy for management of special status species is in the BLM Manual Section 6840. Special status species (SSS) include the following:

- Federally Threatened or Endangered Species: Any species the USFWS has listed as an endangered or threatened species under the Endangered Species Act of 1973, as amended (ESA) throughout all or a significant portion of its range;
- Proposed Threatened or Endangered Species: Any species the USFWS has proposed for listing as a federally endangered or threatened species under the ESA;

- Candidate Species: Plant and animal taxa under consideration for possible listing as threatened or endangered under the ESA;
- Delisted Species: Any species in the five years following their listing;
- BLM Sensitive Species: Native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either: 1) there is information that a species has undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range; or 2) the species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk (BLM 2008b); and
- State of Nevada Listed Species: State-protected animals that have been determined to meet BLM's Manual 6840 policy definition.

3.4.2 Assessment Area

The assessment area is different for each special status species. The assessment area for special status plants is the Project Area. The assessment area for special status small mammals, including the dark kangaroo mouse, pygmy rabbit, and Preble's shrew is the Project Area with a 400 foot buffer as shown on Figure 10. The assessment area for special status migratory birds, including western burrowing owl, and special status bats is the Project Area with a ¼ mile buffer and the assessment area for special status raptors is the Project Area with a 10-mile radius, as determined by USFWS. The assessment areas were established for purposes of analysis to capture the extent of the potential direct and indirect impacts of the different special status species.

3.4.3 Affected Environment

The USFWS, NNHP, and the NDOW were contacted to obtain information on sensitive species that have the potential to occur within the Project Area (ARCADIS 2013). In addition, the BLM Special Status Species list was evaluated for species with the potential to occur within the assessment areas.

3.4.3.1 *Special Status Plant Species*

The NNHP stated that habitat may be available for the winged milkvetch (*Astragalus altus*), a "vulnerable" Taxon, within the Project Area. Three BLM special status plant species could potentially occur within the Project Area: Margaret rushy milkvetch (*Astragalus convallarius* var. *margaretiae*); Schoolcraft's wild buckwheat (*Eriogonum microthecum* var. *schoolcraftii*);

and Osgood mountains milkvetch (*Astragalus yoder-williamsii*). Further evaluation of potential species presence following the habitat evaluation determined that the potential presence of Osgood mountains milkvetch was unlikely given that this species grows on coarse decomposed granodiorite soil at 5,660 to 7,300 feet above mean sea level, which is not present in the Project Area.

Winged milkvetch occurs on light-colored, alkaline, often seasonally moist sandy silt or clay soils of saltgrass (*Distichlis spicata*) meadows, shrubby bottomlands, and low knolls, often in washes or gullies, in the shadscale and lower sagebrush zones with basin wildrye (*Leymus cinereus*), bud sagebrush (*Picrothamnus desertorum*), big sagebrush, squirreltail (*Elymus elymoides*), and greasewood. However, suitable habitat was not observed during the June 2013 reconnaissance survey or July 2013 special status species survey. Due to the lack of potential habitat for winged milkvetch, this plant species is dismissed from further analysis.

A special status plant survey was conducted on July 30 and 31, 2013, by ARCADIS for Margaret rushy milkvetch and Schoolcraft's wild buckwheat. Although Margaret rushy milkvetch would have been past bloom during the July surveys, Schoolcraft's wild buckwheat blooms from July to September. Dry conditions were found at the site during surveys, and no grasses or forbs were blooming during that period. No other special status plant species were observed during the surveys. Due to Schoolcraft's wild buckwheat not being observed during the special status plant survey, Schoolcraft's wild buckwheat is dismissed from further analysis.

3.4.3.2 Special Status Wildlife Species

There is no Greater Sage-grouse Preliminary Priority Habitat (PPH) or Preliminary General Habitat (PGH) in the Project Area. The closest occurrence of PGH is approximately 2.75 miles southwest of the Project Area and PPH is approximately 3.75 miles southwest of the Project Area. NDOW defined 8,968 acres of sage grouse habitat within four miles of the project area. This makes up 17.4 percent of the four mile vicinity around the project area, which includes 73 acres or 0.14 percent PPH, 545 acres or 1.06 percent PGH, 3,913 acres or 7.6 percent Unsuitable Habitat, and 4,437 acres or 8.6 percent Low Value Habitat. In addition, there are no known lek sites in the Project Area or within four miles of the Project Area (ARCADIS 2013). Based on information from NDOW, there is no Greater Sage-grouse habitat within the Project Area and the Greater Sage-grouse habitat within four miles of the project area is primarily categorized as Low Value Habitat/Transitional Range and Unsuitable habitat (ARCADIS 2013). Based on this information, Greater Sage-grouse is dismissed from further analysis.

Based on the agency responses, and a review of the BLM sensitive species list Table 3-7 lists the BLM sensitive species with potential to occur in the Project Area.

Table 3-7: BLM Sensitive Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Common Name	Scientific Name
Birds			
Bald eagle	<i>Haliaeetus leucocephalus</i>	Black rosy-finch	<i>Leucosticte atrata</i>
Brewer’s sparrow	<i>Spizella breweri</i>	Ferruginous hawk	<i>Buteo regalis</i>
Golden eagle	<i>Aquila chrysaetos</i>	Loggerhead shrike	<i>Lanius ludovicianus</i>
Northern goshawk	<i>Accipiter gentilis</i>	Peregrine falcon	<i>Falco peregrinus</i>
Sage thrasher	<i>Oreoscoptes montanus</i>	Swainson’s hawk	<i>Buteo swainsoni</i>
Western burrowing owl	<i>Athene cunicularia hypugaea</i>		
Mammals			
Big brown bat	<i>Eptesicus fuscus</i>	Brazilian free-tailed bat	<i>Tadarida brasillensis</i>
California myotis	<i>Myotis californicus</i>	Dark kangaroo mouse	<i>Microdipodops megacephalus</i>
Fringed myotis	<i>Myotis thysanodes</i>	Hoary bat	<i>Lasiurus cinereus</i>
Long-eared myotis	<i>Myotis evotis</i>	Long-legged myotis	<i>Myotis volans</i>
Pallid bat	<i>Antrozous pallidus</i>	Preble’s shrew	<i>Sorex preblei</i>
Pygmy rabbit	<i>Brachylagus idahoensis</i>	Silver-haired bat	<i>Lasionycteris noctivagans</i>
Spotted bat	<i>Euderma maculatum</i>	Townsend’s big-eared bat	<i>Corynorhinus townsendii</i>
Western pipistrelle	<i>Pipistrellus Hesperus</i>	Western small-footed myotis	<i>Myotis ciliolabrum</i>
Yuma myotis	<i>Myotis yumanensis</i>		

Bats

As identified in Table 3-7, the following BLM sensitive bat species have the potential to occur in the Project Area: big brown bat; Brazilian free-tailed bat; California myotis; fringed myotis; hoary bat; long-eared myotis; long-legged myotis; pallid bat; silver-haired bat; spotted bat; Townsend’s big-eared bat; western pipistrelle; western small-footed myotis; and Yuma myotis.

The Project Area provides foraging habitat for bats and bats could migrate through the area on a seasonal basis. Potential roosting habitat for California myotis exists in the Project Area; the California myotis may roost on small desert shrubs or on the ground. For other bat species, no other bat roosting habitat (*i.e.*, no historic mines or adits) was identified in the Project Area (Arcadis 2013).

Pygmy rabbits

Pygmy rabbits prefer tall, dense, lumpy (*i.e.*, clumps of sagebrush that stand out from the surrounding vegetation) stands of sagebrush for cover, foraging and burrows, which are dug at the base of sagebrush and can be identified by large mounds of excavated light-colored friable soils. The Project Area consists of drainage areas that contain shallow and deep well-drained friable soils, known to be suitable habitat for pygmy rabbits (ARCADIS 2013).

Surveys for pygmy rabbits were conducted on July 30 and 31, 2013. The majority of the surveys were conducted within and around the largest and most dense stands of sagebrush that occurred adjacent to the series of drainages in the northwest, central and southeast portions of the Project Area. However, the drainages did not have any distinctive vegetation (e.g., riparian or other) compared to the areas immediately outside of the drainages. The stands of sagebrush in these areas were approximately three feet in height with at least 50 percent bare ground between plants. All of the surveyed areas contained several small unidentified burrows observed at the base of big sagebrush roots and on the banks of the drainages. Some potential secondary evidence (i.e., scat, tracks) were observed; however, no pygmy rabbits were present. Note that the tracks and scat of cottontail rabbits, particularly juvenile rabbits, are very similar to pygmy rabbits. No individuals of either species were observed during the survey period (ARCADIS 2013).

Dark Kangaroo Mouse

This species prefers habitat consisting of loose sands and gravel within valley bottoms and alluvial fans dominated by big sagebrush, rabbitbrush, and horsebrush. The Project Area contains suitable habitat for this year-round resident. The dark kangaroo mouse would likely occur in Inter-Mountain Basins Big Sagebrush Shrubland and Great Basin Xeric Mixed Sagebrush Shrubland. Breeding for the dark kangaroo mouse occurs from April to September. This species was not observed in the Project Area during the June 2013 reconnaissance survey or the July 2013 field surveys (ARCADIS 2013).

Preble's shrew

Though the Project Area is outside of the known range of the Preble's shrew, the Preble's shrew usually occurs in sagebrush-grassland habitats often when vegetative cover is between 40 percent and 60 percent. This is a species with limited study, but it is potentially a year round resident. Potentially suitable foraging and nesting habitat occurs within the Project Area in the Inter-Mountain Basins Big Sagebrush Shrubland habitat. This species was not observed in the Project Area during the June 2013 reconnaissance survey or the July 2013 field surveys (ARCADIS 2013).

Raptors

As identified in Table 3-4, the following BLM sensitive raptors have the potential to occur in the Project Area: bald eagle; ferruginous hawk; golden eagle; northern goshawk; peregrine falcon; Swainson's hawk; and western burrowing owl.

According to the NDOW databases, there are four known nest sites within ten miles of the Project Area: one falcon (*Buteo spp.*) and three ferruginous hawk nests. The falcon nest was recorded as last active in January 1975. The ferruginous hawk nests are documented as being last

checked in January 2005 and one as last active in January 2005. The remaining two ferruginous hawk nests have no last active dates.

A ground-based raptor survey was conducted by ARCADIS on June 11 and 12, 2013 within the northwest portion of the Project Area's ten-mile buffer. A single Swainson's hawk and a pair of red-tailed hawks were observed soaring within the northwest portion of the ten-mile buffer. Three unidentified stick nests were observed during the surveys. Two of the three nest sites were observed on low voltage transmission poles. One transmission pole was located in the northeastern ten-mile buffer area while the second was observed within two miles of the Project Area. The final nest was observed perched atop a derelict wooden mining lift scaffold within the northeast ten-mile buffer area. No incidental observations of raptors or their nests were observed during the June 2013 habitat evaluation.

Golden eagle nesting surveys were conducted for the Marigold Mine April 22, 2013. This survey was conducted within a ten-mile radius of the Plan of Operations boundary for the Target 3 Project Area. The northwest boundary is located approximately 1.5 miles southeast of the Project Area. The survey was performed using the protocols outlined in the 2010 Interim golden eagle technical guidance: Inventory and monitoring protocols; and other recommendations in support of golden eagle management and permit issuance (USFWS 2010). Due to proximity between the Marigold Mine and the Project Area, much of the Project Area and ten-mile buffer overlaps with the Marigold Mine ten-mile survey area. Five unoccupied and one occupied golden eagle nests were observed within the Project Area's ten-mile buffer. Two additional unoccupied potential raptor nests were observed. Golden eagles were observed at one nest and during three flyovers. Sightings of a pair of ferruginous hawks, a single Swainson's hawk, and a prairie falcon also occurred within the Project Area's ten-mile buffer.

In addition to the raptor surveys described above, field teams conducted a survey specifically for *Buteo* species and their nest sites within and around a one-mile radius of the Project Area. No *Buteo* species were observed during the survey; however, one *Buteo* (likely ferruginous hawk) and nine unidentified stick nests were observed. Nine of the ten nest sites were observed in the high voltage transmission towers. One of the transmission line nest sites was located in the southeast corner of the Project Area. The remaining nest site was observed near the southwest corner within the Project Area. This stick nest was built on top of an old rusted 55-gallon drum and was likely constructed by ferruginous hawk, as they are known to build nests on low rock outcrops, hummocks, and old structures having little or no cover (ARCADIS 2013).

Western burrowing owl

In addition to the raptor surveys described above, field teams conducted a burrowing owl species-specific survey within potentially suitable habitat on July 30 and 31, 2013. Although

nearly all of the Project Area was determined as suitable habitat (i.e., containing burrows in sparse or low vegetation), no burrowing owls or secondary evidence (i.e., scat, pellets, feathers) were observed.

Non-raptor migratory birds

The Project Area contains suitable habitat for the following non-raptor migratory birds: loggerhead shrike; black rosy-finch; sage thrasher; and Brewer's sparrow.

The loggerhead shrike nests in open, arid country with few perches and lookouts. This species is found in most habitats in Nevada, but less likely to occur in forests, higher mountains, and barren areas. The Project Area contains suitable open sagebrush habitat for the loggerhead shrike including Inter-Mountain Basins Big Sagebrush Shrubland and Inter-Mountain Basins Xeric Mixed Sagebrush Shrubland. This species nests from early February to late July and has the potential to occur year round (ARCADIS 2013). This species was not observed in the Project Area during the June 2013 habitat evaluation or the July 2013 field surveys.

The black rosy-finch prefers alpine tundra environments in high mountains that have barren, rocky or grassy areas and cliffs. No suitable habitat of this type is found in the Project Area; however the black rosy-finch's wintering habitat includes lowlands away from mountains including areas with sagebrush habitat which does occur within the Project Area. The species has the potential to be present from October to April (ARCADIS 2013). This species was not observed in the Project Area during the June 2013 habitat evaluation or the July 2013 field surveys.

The sage thrasher and Brewer's sparrow are reliant upon sagebrush and as such usually occur in sagebrush scrub and sagebrush steppe habitats. The Project Area contains habitat suitable for nesting and migration and these species may be found from late February to late October (ARCADIS 2013). These species were not observed in the Project Area during the June 2013 habitat evaluation or the July 2013 field surveys.

3.5 Vegetation

3.5.1 Regulatory Framework

The FLPMA, Public Rangelands Improvement Act of 1978 (PRIA), 43 CFR 4180, and the NDEP BMRR revegetation standards provide the direction, goals, and objectives for vegetation management and reclamation success in the Project Area.

The *Guidelines for Successful Revegetation for the Nevada Division of Environmental Protection, the Bureau of Land Management and the U.S.D.A. Forest Service* presents the requirements for successful revegetation for public and private land.

3.5.2 Assessment Area

The assessment area for vegetation is the Project Area.

3.5.3 Affected Environment

Five vegetation communities have been documented in the Project Area and include the following: Inter-Mountain Basins Big Sagebrush Shrubland; Great Basin Xeric Mixed Sagebrush Shrubland; Inter-Mountain Basins Mixed Salt Desert Scrub; Invasive Annual Grassland; and Inter-Mountain Basins Semi-Desert Shrub Steppe.

The Inter-Mountain Basins Big Sagebrush Shrubland community is the dominant plant association in the Project Area and occupies approximately 60 percent of the Project Area. This community was observed in large patches throughout the Project Area. The dominant species observed in this community were Wyoming big sagebrush (*Artemisia tridentata* sp. *wyomingensis*) and big sagebrush (*Artemisia tridentata*). The plots classified as Big Sagebrush Shrubland contained on average a 37 percent relative cover of big sagebrush species. Twenty percent of the vegetation plots were dominated by invasives (84 percent relative cover) and reclassified as Invasive Annual Grassland. Another 20 percent of vegetation plots were dominated by shadscale saltbush (*Atriplex confertifolia*) and spiny saltbush (*Atriplex spinifera*) (62 percent combined relative cover) and lacked presence of big sagebrush species; these plots were reclassified as Inter-Mountain Basins Mixed Salt Desert Scrub.

The Great Basin Xeric Mixed Sagebrush Shrubland community occurs predominantly in the southeastern portion of the Project Area and occupies approximately 18 percent of the Project Area. The dominant species observed in this community included Wyoming big sagebrush and yellow rabbitbrush (*Chrysothamnus viscidiflorus*), with an average relative cover of 46 percent.

The Inter-Mountain Basins Mixed Salt Desert Scrub community occurs in the northeastern portion of the Project Area and occupies approximately 17 percent of the Project Area. This community is dominated by saltbush (*Atriplex* spp.) (46 percent relative cover) and bud sagebrush (*Picrothamnus desertorum*) (30 percent relative cover).

The Invasive Annual Grassland community occurs in the southern portion of the Project Area and occupies approximately five percent of the Project Area. This community is dominated by cheatgrass (56 percent relative cover).

The Inter-Mountain Basins Semi-Desert Shrub Steppe community occurs in a small single patch along the northwestern border of the Project Area. Although this vegetation plot contained a high relative percent cover of invasive cheatgrass (73 percent relative cover), the moderate proportion of Sandberg bluegrass (*Poa secunda*) (14 percent relative cover) along with the presence of a

sparse mixed shrubland composed of bud and black sagebrush (*Artemisia nova*) supported the classification of this vegetation type.

3.6 Wildlife

3.6.1 Regulatory Framework

Section 102.8 of the FLPMA states that the policy of the United States is to manage public land in a manner that would protect the quality of multiple resources and provide food and habitat for fish, wildlife, and domestic animals. The Public Rangelands Improvement Act of 1978 directs the BLM to improve rangeland conditions with due consideration given the needs of wildlife and their habitats.

The character of vegetation, including arrangements, densities, and age classes, greatly influences fish and wildlife habitat quality and productivity. Since vegetation character can vary in response to federal land use authorizations, the BLM considers the consequences to the health of fish and wildlife habitat of various land uses such as grazing and mining, and treatments such as burning and seeding.

The BLM's role in the management of fish and other aquatic resources is to provide the habitat that supports these resources. Aquatic habitat values are products of the attributes and processes of properly functioning riparian and aquatic systems at a desired ecological status. Wildlife must have a reasonable amount of protection from adverse impacts associated with human disturbances and most human activities. This is especially true during breeding seasons and when wildlife use winter ranges.

Wildlife and fish resources and their habitat on public lands are managed cooperatively by the BLM and NDOW under a Memorandum of Understanding (MOU) as established in 1971. The MOU describes the BLM's commitment to manage wildlife and fisheries resource habitat, and NDOW's role in managing populations. The ecological definition of population is a group of organisms of one species that interbreed and live in the same place at the same time. The BLM meets its obligations by managing public lands to protect and enhance food, shelter, and breeding areas for wild animals. The NDOW assures healthy wildlife numbers through a variety of management tools including wildlife and fisheries stocking programs, hunting and fishing regulations, land purchases for wildlife management, cooperative enhancement projects, and other activities.

The NDOW is the state agency responsible for the restoration and management of fish and wildlife resources within the state. The NDOW administers state wildlife management and protection programs as set forth in NRS Chapter 501, Wildlife Administration and Enforcement, and NAC Chapter 503, Hunting, Fishing and Trapping; Miscellaneous Protective Measures. NRS

501.110 defines the various categories of wildlife in Nevada, including protected categories. NAC 503.010503.080, 503.110, and 503.140 list the wildlife species currently placed in the state's various legal categories, including protected species, game species, and pest species.

3.6.2 Assessment Area

The assessment area for general wildlife is the Project Area plus a quarter mile buffer.

3.6.3 Affected Environment

As described in the *Baseline Biological Resources Report for the Lone Tree Mine Expansion Project* (ARCADIS 2013), a biological baseline study for wildlife was completed for the Project. The purpose of the assessment was to collect data that would establish baseline vegetation and wildlife resources within the Project Area. Field surveys confirmed that a majority of the Project Area is composed of sagebrush-dominated vegetation communities, including Inter-Mountain Basins Big Sagebrush Shrubland (approximately 60 percent of the Project Area) and Great Basin Xeric Mixed Sagebrush Shrubland (approximately 18 percent of the Project Area), at times with a lower understory of intermixed grasses. The remaining areas are composed primarily of Inter-Mountain Basins Mixed Salt Desert Scrub (approximately 17 percent of the Project Area) and Invasive Annual Grassland (approximately five percent of the Project Area).

The NDOW identified the following non-special status wildlife species as having been observed in the vicinity of the Project Area: gopher snake (*Pituophis catenifer sayi*); Great Basin whiptail (*Aspidoscelis tigris tigris*); Nevada side-blotched lizard (*Uta stansburiana nevadensis*); western fence lizard (*Sceloporus occidentalis*); yellow-backed spiny lizard (*Sceloporus uniformis*); and zebra-tailed lizard (*Callisaurus draconoides*). The following NDOW-listed species of conservation priority also have the potential to occur in the Project Area: Great Basin collared lizard (*Crotaphytus bicinctores*); long-nosed leopard lizard (*Gambelia wislizenii*); and northern desert horned lizard (*Phrynosoma platyrhinos platyrhinos*).

The NDOW identified year-round pronghorn antelope (*Antilocapra americana*) habitat throughout the entire Project Area and a four-mile buffer. During the habitat evaluation in June 2013, pronghorn antelope were observed outside the Project Area on the northeast boundary, and scat was observed within the southeast portion of the Project Area.

Wildlife species observed in the Project Area are typical of the northern Great Basin Desert region. During July 2013 surveys, the following non-special status wildlife species were observed in the Project Area: black-tailed jackrabbit (*Lepus californicus*); antelope squirrel (*Ammospermophilus leucurus*); and western fence lizard (*Sceloporus occidentalis*) (ARCADIS 2013).

4.0 Environmental Consequences

4.1 Direct and Indirect Impacts

The following sections describe the direct and indirect environmental consequences which would result from implementation of the Proposed Action and the No Action Alternative. The existing conditions for each resource below can be found in Chapter 3.

4.1.1 Air Quality

Proposed Action

The Proposed Action consists of several activities that are known to emit air pollutants including blasting, loading, hauling, and dumping mined material. The potential impacts from the Proposed Action would primarily consist of fugitive dust and combustion emissions associated with the surface disturbance and material handling activities. To quantify the potential impacts, an emissions inventory was prepared and air dispersion modeling was conducted.

Methodology

A comprehensive inventory of potential sources of air pollutant emissions, including stationary “point” sources, “fugitive” sources, and mobile and non-road combustion sources, has been completed for the Project. Estimates were made of the emission rates from each emission unit for: (1) four criteria air pollutants: PM₁₀, PM_{2.5}, carbon monoxide (CO) and sulfur dioxide (SO₂); (2) two ozone precursors: nitrogen oxides (NO_x) and volatile organic compounds (VOCs); and (3) the greenhouse gases carbon dioxide (CO₂) and methane (CH₄). These estimates were made for all five applicable criteria air pollutant regulatory time periods (1 hour, 3-hour, 8-hour, 24-hour, and annual) using the project year with the potential for the greatest air pollution emissions (year 3), and using operational parameters provided by Newmont and generally available EPA and other emission factors. Table 4-1 summarizes the total emissions that would result from the Proposed Action.

Table 4-1: Summary of Total Estimated Fugitive and Combustion Emissions

Time Period	Calculated Air Pollutant Emissions for Indicated Time Period							
	PM ₁₀	PM _{2.5}	SO ₂	CO	NO _x	VOCs	CO ₂	CH ₄
1-Hour (lb/1 hr)	341.9	72.9	3.3	817.4	147.2	5.2	9,315.6	0.0
3-Hour (lb/3 hr)	440.0	90.1	3.4	868.0	235.4	15.2	15,791.9	0.0
8-Hour (lb/8 hr)	685.0	132.9	3.6	984.0	451.8	39.1	31,547.4	0.0
24-Hour (lb/24 hr)	668.8	112.2	3.7	1,018.2	520.8	50.2	36,616.6	0.0
Annual (tons/year)	50.9	8.9	0.1	44.7	56.9	7.3	4,748.8	0.0

Source: EMA 2014

The current USEPA-approved American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD Version 13350) was used with one year of on-site meteorological data processed using AERMET Version 12345 to conduct the ambient air quality modeling for two operating scenarios – the “Proposed Action” and the “No Action Alternative.” No background sources were included in the Brooks project modeling, although regional air pollutant concentrations recommended by the NDEP, BAPC were added to the applicable modeled air pollutant concentrations. The modeling results in Table 4-2 demonstrate that the calculated emissions from the Brooks project of the four criteria pollutants, as well as nitrogen dioxide (NO₂) emissions estimated from the calculated NO_x emissions, when added to the applicable background air pollutant concentrations, would not result in exceedances of either the National Ambient Air Quality Standards (NAAQS) or Nevada State Ambient Air Quality Standards (NSAAQS).

Table 4-2: Highest Modeled Air Pollutant Concentrations from the Proposed Action

Pollutant	Averaging Time	Concentration (µg/m ³)			Lowest Applicable Ambient Standard (µg/m ³)	In Compliance
		Background	Modeled High	Total		
PM ₁₀	24-hour	10.200	16.50	26.70	150	Yes
	Annual	4.775	2.63	15.40	50	Yes
PM _{2.5}	24-hour	7.000	7.14	14.14	35	Yes
	Annual	2.400	0.85	3.25	15	Yes
SO ₂	1-hour	0.000	6.23	2.63	196	Yes
	3-hour	0.000	1.34	1.34	1,300	Yes
	24-hour	0.000	0.18	0.18	365	Yes
	Annual	0.000	0.01	0.01	80	Yes
NO _x	1-hour	0.000	217.93	217.93	188	No
	Annual	0.000	2.12	2.12	100	Yes
CO	1-hour	0.000	985.93	985.93	40,000	Yes
	8-hour	0.000	131.71	131.71	10,500	Yes

Source: EMA 2014

The only modeled criteria pollutant that was predicted to exceed the NAAQS was the 1-hour NO_x emissions. Because NO_x includes both nitric oxide and nitrogen dioxide (NO₂, the criteria pollutant), NO₂ modeled concentrations can be calculated using the Ambient Ratio Method (ARM) recommended by U.S. EPA. After the ARM is applied (multiply concentration by 0.8) to the modeled NO_x emissions, NO₂ falls within the emissions allowable under the NAAQS.

Therefore, results from the emissions inventory and air modeling showed that no criteria pollutants or greenhouse gases would exceed national or state ambient air quality standards.

Criteria Pollutants

The Proposed Action has the potential to disturb approximately 230 acres of undisturbed land. Surface disturbances would increase fugitive particulate dust entrainment in the vicinity of the Brooks project for the duration of the project. The construction of the proposed open pit, OISAs, laydown areas, exploration-related features, haul and access roads, and other disturbance would create fugitive dust emissions in the form of PM₁₀ and PM_{2.5} that would have a potential impact on air quality. Additionally, fugitive dust in the form of PM₁₀ and PM_{2.5} would be caused by the operation of heavy equipment used to develop and operate the Brooks project.

One of the direct impacts to air quality would be the maximum modeled ambient PM₁₀ concentrations, which is presented in Table 4-2, including background concentrations as 26.7 µg/m³ for a 24-hour time period and 15.4 µg/m³ for the annual period. Another direct impact to air quality would be the maximum modeled ambient PM_{2.5} concentrations, which is presented in the modeling analysis, including background concentrations as 14.14 µg/m³ for a 24-hour time period and 3.25 µg/m³ for the annual period.

In order to minimize the potential air quality impacts resulting from fugitive dust emissions, Newmont would implement the environmental protection measures described in Chapter 2.5.1. These protection measures include dust abatement initiatives such as watering access and haul roads to minimize localized increases in particulate matter concentrations.

No indirect impacts to air quality have been identified from criteria pollutant emissions.

Greenhouse Gases

Recent scientific evidence suggests there is a direct correlation between climate change and emissions of GHGs. GHGs include carbon dioxide, methane, nitrogen oxide, and ozone. Although many of these gases occur naturally in the atmosphere, man-made sources have substantially increased the emissions of GHGs over the past several decades. Of the man-made GHGs, the greatest contribution currently comes from carbon dioxide emissions. GHG emissions associated with the Proposed Action would be from the consumption of fuel from the haul trucks and loaders. The carbon dioxide emissions from the Proposed Action are estimated to be approximately 4,750 tons per year, which is well below the reporting standard of 25,000 metric tons per year (27,563 tons per year).

Hazardous Air Pollutants

The primary source of HAPs emissions are the use of thermal sources, such as a roaster used for material processing. The Lone Tree Mine has a roaster on-site which is permitted with the NDEP BAPC, however, the Brooks project would use entirely heap leach processing. Therefore,

measurable amounts of HAPs emissions would not be expected from the Proposed Action. Additionally, the known geology of the Brooks project deposit has very low likelihood of generating windblown HAPs.

No Action Alternative

Under the No Action Alternative, Newmont would continue to manage the Lone Tree Mine in a care and maintenance status. The majority of operations at the Lone Tree Mine would center on residual heap leaching and processing. Up to five acres of exploration-related surface disturbance could occur under the Brooks project notice. The highest modeled emissions for the No Action Alternative are presented in Table 4-3.

Table 4-3: Modeled Air Pollutant Concentrations - No Action Alternative

Pollutant	Averaging Time	Concentration (µg/m ³)			Lowest Applicable Ambient Standard (µg/m ³)	In Compliance
		Background	Modeled High	Total		
PM ₁₀	24-hour	10.200	25.22	35.42	150	Yes
	Annual	4.775	10.02	14.80	50	Yes
PM _{2.5}	24-hour	7.000	7.23	14.23	35	Yes
	Annual	2.400	2.28	4.68	15	Yes
SO ₂	1-hour	0.000	2.11	2.11	196	Yes
	3-hour	0.000	0.94	0.94	1,300	Yes
	24-hour	0.000	0.29	0.29	365	Yes
	Annual	0.000	0.08	0.08	80	Yes
NO _x	1-hour	0.000	64.90	64.90	188	Yes
	Annual	0.000	9.98	9.98	100	Yes
CO	1-hour	0.000	88.65	8.65	40,000	Yes
	8-hour	0.000	39.70	39.70	10,500	Yes

Source: EMA 2014

4.1.2 Cultural Resources

Proposed Action

All seven cultural sites recorded in the Project Area have been determined to be ineligible to the National Register of Historic Places. In addition to these sites, two isolated artifacts were recorded. Isolated finds are categorically ineligible to the National Register. Since there are no National Register eligible or unevaluated sites in the proposed Project Area, no direct impacts to cultural resources are anticipated.

National Historic Trail

The Proposed Action also would not directly impact the California NHT.

In order to assess the indirect effects to the California NHT, a visual analysis was prepared (Jennings, Atkinson 2014). The visual analysis was used to determine which portions of the NHT had potential to be affected by the Proposed Action. The first step was construction of a geometric view shed using ESRI ArcMAP 10.1 and a point at the upper portion of the proposed Brooks pit. This provided a quick estimate of the extent of the potential indirect effect APE and its reach along the California NHT, which runs along the Humboldt River valley floor in this area. The elevated location of the project and the open valley to the north of the Project Area produced a very large view shed.

The visual analysis was then reversed to determine the view shed from various points along the trail as presently mapped for the NHT system. Five key observation points were selected along the portions of the trail lying within the view shed. On May 20, 2014, the area of the Proposed Action was photographed from those points. A Ricoh G700SE camera was used which provided the geographic coordinates and direction of each photograph.

Using the data collected in the field, a visual assessment was prepared to determine the likelihood of effects based on the existing integrity of the trail including the setting, feeling, and association, and the likelihood of indirect effects based on distance to the action, contrast, and obstructions.

The visual assessment concluded that a combination of factors contributed to the reduction of the visual contrast of the Brooks project including: distance to the California NHT from the proposed development of the Brooks project; the relative scale of the proposed operation; and the continued use of the existing Lone Tree Mine heap leach pad. Even at its closest proximity to the California NHT, the Project Area is in the background where it would not be noticeable to the casual observer. That fact that the existing Lone Tree Mine pit is not visible in the photos supports the conclusion that this proposed development would not further diminish the visual integrity of the California NHT. This conclusion is supported by the direct observations of the field party in which no member was able to resolve the existing pit. Additionally, the integrity of setting and feeling have already been degraded by modern developments such as the Valmy Power Station and its associated high voltage electrical transmission lines and the existing Lone Tree Mine open pit, waste rock storage, heap leach facilities, and ancillary buildings. The area is also crossed by major transportation features, as Interstate-80 and the active Union Pacific Railroad line follow the route of the California NHT. The abandoned Central Pacific railroad line lies very near the mapped segments of the California NHT. Most of these developments are in the foreground and lie between the trail and the Proposed Action. None of the proposed

development would actually be visible to the casual observer from the Reed/Snyder Murder site at Marker C-58.

If artificial lighting is necessary under the Proposed Action, it is not expected to further diminish the visual integrity of the California NHT. There are existing impacts to the California NHT setting from the artificial lighting at existing facilities at the Lone Tree Mine and from vehicles on Interstate-80 traveling at night. The implementation of environmental protection measures described in chapter 2.5.16 would further reduce any potential impacts to the setting from the artificial lighting.

Therefore, the casual observer experiencing the California NHT would not be likely to notice the development of the Proposed Action and the setting, feeling, and association of the California NHT would not be affected.

No Action Alternative

No impacts to cultural resources are anticipated under the No Action Alternative. The Lone Tree Mine would continue to be managed in a care and maintenance status and the majority of operations at the Lone Tree Mine would center on residual heap leaching and processing. Up to five acres of exploration-related surface disturbance could occur under the Brooks project notice, but these activities would not be expected to extend beyond the Project Area that was surveyed. Therefore, the notice-level activity would not be expected to impact any known cultural resources.

National Historic Trail

Under the No Action Alternative, the Lone Tree Mine would continue to be managed in a care and maintenance status. Any indirect impacts to the visual resources of the California NHT would remain the same as current conditions.

4.1.3 Migratory Birds

Proposed Action

Environmental protection measures for migratory birds have been incorporated into the Proposed Action. The migratory bird protection measures outlined in Section 2.5.11 would reduce the potential for direct loss of nests (e.g. crushing) or indirect effects (e.g. abandonment) from increased noise due to surface clearing activities.

After the implementation of the environmental protection measures, potential impacts to migratory birds that would be expected to occur include foraging and nesting habitat loss, and disturbance to migratory bird behavior from increased human presence and noise due to mining activities.

Habitat Loss

The assessment area for non-raptor migratory birds contains approximately 2,695 acres of migratory bird foraging and nesting habitat, of which 230 acres (8.5 percent) are expected to be disturbed as a result of surface clearing activities. Approximately 32 acres or 1.2 percent of the foraging habitat within the project area would be permanently lost due to the Brooks pit being left un-reclaimed. The assessment area for raptor migratory birds contains approximately 245,540 acres of foraging and nesting habitat, of which 230 acres (0.09 percent) are expected to be disturbed as a result of surface clearing activities. Approximately 32 acres or 0.01 percent of the foraging habitat within the project area would be permanently lost due to the Brooks pit being left un-reclaimed. The open pit has potential to create an increase in cliff nesting habitat for raptors after mining activities are finished. The remaining 198 acres or 7.3 percent of the non-raptor migratory bird assessment area and 0.08 percent of the raptor migratory bird assessment area would be reclaimed after proposed mining concludes. The reclaimed land would have more grass and forb forage and less mature shrub forage in the immediate years after reclamation, which may result in a shift of avian species use within these areas. As the plant communities within the 198 acres mature, larger shrubs may provide additional cover and nesting opportunities.

Noise and Human Presence

Human presence and noise due to mining activities within the assessment area for migratory birds could displace migratory birds or affect their stress levels and behavior (Kempnaers et. al. 2010 and Schroeder, Nakagawa, Cleasby, and Burke 2012). Although several species of migratory birds can adapt somewhat to human disturbances, it is possible that utilization of the nesting and foraging resources in the Project Area and beyond could be prohibitive to migratory bird species typically found in the Project Area.

No Action Alternative

Under the No Action Alternative, Newmont would continue to manage the Lone Tree Mine in a care and maintenance status. Up to five acres of exploration-related surface disturbance could occur under the Brooks project notice. Therefore, up to five acres of migratory bird nesting and foraging habitat could be disturbed.

Additional Affected Resources

4.1.4 Special Status Species

Proposed Action

Sensitive plant and wildlife species habitat has been documented within the Project Area and within the assessment areas. Table 4-4a lists sensitive species which could potentially occur within, and thus be potentially impacted by, the Proposed Action.

Table 4-4a: Sensitive Species Potentially Impacted by the Proposed Action

Common Name	Scientific Name	Common Name	Scientific Name
Plants			
Margaret Rushy Milkvetch	<i>Astragalus convallarius var. margaretiae</i>		
Birds			
Bald eagle	<i>Haliaeetus leucocephalus</i>	Black rosy-finch	<i>Leucosticte atrata</i>
Brewer’s sparrow	<i>Spizella breweri</i>	Ferruginous hawk	<i>Buteo regalis</i>
Golden eagle	<i>Aquila chrysaetos</i>	Loggerhead shrike	<i>Lanius ludovicianus</i>
Northern goshawk	<i>Accipiter gentilis</i>	Peregrine falcon	<i>Falco peregrinus</i>
Sage thrasher	<i>Oreoscoptes montanus</i>	Swainson’s hawk	<i>Buteo swainsoni</i>
Western burrowing owl	<i>Athene cunicularia hypugaea</i>		
Mammals			
Big brown bat	<i>Eptesicus fuscus</i>	Brazilian free-tailed bat	<i>Tadarida brasilliensis</i>
California myotis	<i>Myotis californicus</i>	Dark kangaroo mouse	<i>Microdipodops megacephalus</i>
Fringed myotis	<i>Myotis thysanodes</i>	Hoary bat	<i>Lasiurus cinereus</i>
Long-eared myotis	<i>Myotis evotis</i>	Long-legged myotis	<i>Myotis volans</i>
Pallid bat	<i>Antrozous pallidus</i>	Preble’s shrew	<i>Sorex preblei</i>
Pygmy rabbit	<i>Brachylagus idahoensis</i>	Silver-haired bat	<i>Lasionycteris noctivagans</i>
Spotted bat	<i>Euderma maculatum</i>	Townsend’s big-eared bat	<i>Corynorhinus townsendii</i>
Western pipistrelle	<i>Pipistrellus Hesperus</i>	Western small-footed myotis	<i>Myotis ciliolabrum</i>
Yuma myotis	<i>Myotis yumanensis</i>		

Plants

Margaret rushy milkvetch is a sensitive plant species that was documented with the potential to occur within project area due to the presence of habitat that could support this plant species being present in the Project Area (Arcadis 2013). There is approximately 168 acres of potential Margaret rushy milkvetch habitat within the Project Area. The proposed project would disturb approximately 45 acres or 26.7 percent of potential Margaret rushy milkvetch habitat. The potential habitat is dispersed throughout the Project Area, making up six distinct areas (see Table 4-4b and Figure 14). The 45 acres of potential habitat would be reclaimed after proposed mining

concludes. The reclaimed land would have more grass and forb plant communities and less mature shrub communities in the immediate years after reclamation. Disturbance would reduce the potential for special status plant species to inhabit these areas, however, there is similar habitat within and adjacent to the Project Area. Impacts to Margaret rushy milkvetch is the loss of 45 acres of potential habitat and, if the plant species is present, mortality to the plants from surface disturbing activities could occur.

Table 4-4b: Margaret Rushy Milkvetch Habitat

Plant Habitat Disturbance by Area # (as shown in Figure 14)		
	Acres of plant habitat proposed for disturbance	Percent (acres of habitat proposed for disturbance/168 acres of potential habitat total)
Area 1	2.1	1.2
Area 2	0.6	0.3
Area 3	0.5	0.3
Area 4	9.1	5.4
Area 5	13.9	8.3
Area 6	18.7	11.1
TOTAL	44.8	26.7

Recommended Mitigation Measure – The following mitigation measure is recommended to be a condition of any subsequent authorization:

A plant survey shall be conducted by a qualified botanist for Margaret rushy milkvetch in all potential habitat within the Project Area prior to ground disturbance in known potential habitat during correct time of year (May – June), due to the 2013 plant survey being conducted outside of the correct flowering time for species. Surveys must follow established BLM standards and protocols, and shall be approved by the BLM biologist prior to being implemented. If found, place 50 foot buffer around special status plants. If special status plant species are present and not avoidable, collect seeds from special status plants for seedling growth and planting and/or transplant special status plant species outside of disturbance areas. This mitigation is designed to maintain the viability of the population through seed collection, storage, germination, seedling planting, transplanting and monitoring, all through coordination with the BLM. A transplant location suitable for survival of the plant(s), with respect to growth requirements and land use objectives (e.g. areas where surface disturbance is unlikely), would be identified. If a transplant location is not determined prior to the completion of this analysis, the prospective transplant location would need to be evaluated under NEPA once it has been identified.

Bats

Habitat Loss

Fourteen sensitive bat species have potential to utilize habitat within the Project Area for foraging and one sensitive bat species (California myotis) has the potential to utilize roosting habitat (shrubs) within the Project Area. The Proposed Action would not result in the disturbance or removal of bat hibernacula or roosting sites for thirteen of the sensitive bat species, however the removal of roosting sites would occur for the California myotis by the removal of shrub vegetation. Direct impacts to the California myotis may include loss of roosting habitat and mortality from heavy equipment during construction and operations.

The assessment area for fourteen sensitive bats contains approximately 2,695 acres of foraging habitat and potential migration areas, of which 230 acres (8.5 percent) are expected to be disturbed as a result of surface clearing activities as an indirect impact. Approximately 32 acres or 1.2 percent of the foraging habitat within the project area would be permanently lost due to the Brooks pit being left un-reclaimed. Approximately 198 acres would be reclaimed after proposed mining concludes. The reclaimed land would have more grass and forb forage and less mature shrub forage in the immediate years after reclamation, which may result in a reduction of sensitive bat species use within these areas. As the plant communities within the 198 acres mature, larger shrubs would provide roosting habitat for the California myotis. Surface disturbing activities may reduce the prey base for sensitive bat species, but reclamation of the disturbance would restore the foraging potential.

Noise and Human Presence

Human presence and noise due to mining activities within the assessment area for sensitive bat species could cause direct and indirect impacts to bats by displacing bats within the assessment area and by deterring bat species from migrating through the assessment area for the duration of the mining activities.

Sensitive Small Mammals

Although pygmy rabbits were not found during surveys, pygmy rabbit sign, including 5 burrows and 1 occurrence of potential pygmy rabbit scat were found within the assessment area. The assessment area for small mammals consists of approximately 1,120 acres of potential pygmy rabbit habitat, of which 201 acres (17.9 percent) could be disturbed by the Proposed Action. The 201 acres would be reclaimed after proposed mining concludes. The reclaimed land would have more grass and forb forage and less mature shrub forage in the immediate years after reclamation, which may result in a reduction of pygmy rabbit use within these areas. As the plant communities within the 191 acres mature, larger shrubs would provide forage and cover for pygmy rabbit. Direct and indirect impacts may include mortality from heavy equipment during

construction and operations, loss of 201 acres of habitat, loss of up to 5 burrows, reduced forage, reduced cover, increased predation and displacement of pygmy rabbits from mining activity noise.

Although Preble's shrew was not identified during field surveys conducted in June and July, 2013, potential habitat is found within the assessment area. The assessment area for small mammals consists of approximately 2,369 acres of potential Preble's shrew habitat, of which 176 acres (7.4 percent) could be disturbed by the Proposed Action. Approximately 32 acres (1.3 percent) of the foraging habitat within the assessment area would be permanently lost due to the Brooks pit being left un-reclaimed. The remaining 144 acres would be reclaimed after proposed mining concludes. The reclaimed land would have more grass and forb forage and less mature shrub forage in the immediate years after reclamation, which may result in a reduction of Preble's shrew use within these areas. As the plant communities within the 144 acres mature, larger shrubs would provide cover for Preble's shrew. Direct and indirect impacts to Preble's shrew may include mortality from heavy equipment during construction and operations, permanent loss of 32 acres of habitat, reduced forage, reduced cover, increased predation and displacement of dark kangaroo mouse from mining activity noise.

Although dark kangaroo mouse was not identified during field surveys conducted in June and July, 2013, potential habitat is found within the assessment area. The assessment area for small mammals consists of approximately 1,321 acres of potential dark kangaroo mouse habitat, of which 220 acres (16.5 percent) fall within the disturbance area of the Proposed Action. Approximately 32 acres (2.4 percent) of the foraging habitat within the project area would be permanently lost due to the Brooks pit being left un-reclaimed. The remaining 188 acres would be reclaimed after proposed mining concludes. The reclaimed land would have more grass and forb forage and less mature shrub forage in the immediate years after reclamation, which may result in a reduction of dark kangaroo mouse use within these areas. As the plant communities within the 188 acres mature, larger shrubs would provide cover for dark kangaroo mouse. Direct and indirect impacts to dark kangaroo mouse may include mortality from heavy equipment during construction and operations, permanent loss of 32 acres of habitat, reduced forage, reduced cover, increased predation and displacement of dark kangaroo mouse from mining activity noise.

Recommended Mitigation Measure – The following mitigation measure is recommended to be a condition of any subsequent authorization:

Seven to ten days prior to vegetation removing activities (including exploration), vegetation in proposed disturbance areas shall be mowed to a height of eight to twelve inches above ground to create less desirable habitat conditions and to encourage wildlife species, including the pygmy rabbit, dark kangaroo mouse, and Preble's shrew to vacate

the disturbance areas. This may reduce the risk of mortality to pygmy rabbit, dark kangaroo mouse, and Preble's shrew. Areas where vegetation is naturally less than 12 inches may be excluded from this requirement with approval from the authorized officer, based on field verification from BLM staff. Mowing in potential special status plant habitat shall not occur prior to completion of special status plant surveys, as described in the special status plant mitigation.

If mowing occurs during the migratory bird breeding season (March 1 – August 31), a migratory bird survey (including burrowing owls) will be required prior to mowing as outlined in the Operational and Performance Standards and Environmental Protection Measures section in chapter 2.5.12. Mowing after the migratory bird clearance survey, and within seven to ten days prior to surface disturbance, will allow the applicant to conduct necessary bird clearance surveys and may also allow pygmy rabbit, dark kangaroo mouse, and Preble's shrew to relocate outside of the disturbance areas.

If mowing occurs outside of the migratory bird breeding season (September 1 – February 28), a burrowing owl clearance survey will be required, as described in the burrowing owl mitigation.

Raptors

The raptor species present near the Project Area are detailed in Table 4-4a above and in chapter 3.4. No golden eagle nests are located within the assessment area; however there are special status raptor nests within the assessment area. No raptor nests are located within areas subject to surface disturbance within the Project Area. Raptor nests are a minimum of 0.35 miles away from the proposed surface disturbance.

Environmental protection measures for special status raptors have been incorporated into the Proposed Action. The special status raptor protection measures outlined in section 2.5.11 would reduce the potential for direct loss of nests (e.g. crushing) or indirect effects (e.g. abandonment) from increased noise due to surface clearing activities.

After the implementation of the environmental protection measures, potential impacts to special status raptors that would be expected to occur include foraging loss and disturbance to raptor behavior from increased human presence and noise due to mining activities.

Habitat Loss

The assessment area for raptors contains approximately 245,540 acres of foraging and nesting habitat, of which 230 acres (0.09 percent) are expected to be disturbed as a result of surface clearing activities. Approximately 32 acres or 0.01 percent of the foraging habitat within the project area would be permanently lost due to the Brooks pit being left un-reclaimed. The open

pit has potential to create an increase in cliff nesting habitat for raptors after mining activities are finished. The remaining 198 acres or 0.08 percent of the raptor bird assessment area would be reclaimed after proposed mining concludes. The reclaimed land would have more grass and forb forage and less mature shrub forage in the immediate years after reclamation, which may result in a shift of avian species use within these areas. As the plant communities within the 198 acres mature, larger shrubs may provide additional cover and nesting opportunities.

Noise and Human Presence

Human presence and noise due to mining activities within the assessment area for raptors could displace raptors or affect their stress levels and behavior (Kempnaers et. al. 2010 and Schroeder, Nakagawa, Cleasby, and Burke 2012). Although several species of raptors can adapt somewhat to human disturbances, it is possible that utilization of the nesting and foraging resources in the Project Area and beyond could be prohibitive to avian species typically found in the Project Area.

Western Burrowing Owls

Environmental protection measures for migratory birds would also apply to burrowing owls and have been incorporated into the Proposed Action. The protection measures outlined in section 2.5.11 would reduce the potential for direct loss of nests (e.g. crushing) or indirect effects (e.g. abandonment) from increased noise due to surface clearing activities during breeding season.

After the implementation of the environmental protection measures, potential impacts to burrowing owls that would be expected to occur include foraging and nesting habitat loss, mortality from surface disturbing activities due to burrowing owls being year round resident birds, disturbance to burrowing owl behavior from increased human presence and noise due to mining activities.

Habitat Loss

The assessment area for burrowing owls contains approximately 2,695 acres of burrowing owl foraging and nesting habitat, of which 230 acres (8.5 percent) are expected to be disturbed as a result of surface clearing activities. Approximately 32 acres or 1.2 percent of the foraging habitat within the project area would be permanently lost due to the Brooks pit being left un-reclaimed. The remaining 198 acres or 7.3 percent of the non-raptor migratory bird assessment area and 0.08 percent of the raptor migratory bird assessment area would be reclaimed after proposed mining concludes. The reclaimed land would have more grass and forb forage and less mature shrub forage in the immediate years after reclamation, which may result in a shift of avian species use within these areas. As the plant communities within the 198 acres mature, larger shrubs may provide additional cover and nesting opportunities.

Noise and Human Presence

Human presence and noise due to mining activities within the assessment area for burrowing owls could displace birds or affect their stress levels and behavior (Kempnaers et. al. 2010 and Schroeder, Nakagawa, Cleasby, and Burke 2012). Although burrowing owls can adapt somewhat to human disturbances, it is possible that utilization of the nesting and foraging resources in the Project Area and beyond could be prohibitive to birds found in the Project Area.

Recommended Mitigation Measure – The following mitigation measure is recommended to be a condition of any subsequent authorization:

In order to avoid potential impacts to burrowing owls, a burrowing owl survey shall be conducted by a qualified biologist prior to ground disturbance, any time of the year due to some burrowing owls being year-round residents that do not migrate. Surveys must be conducted no more than 10 days and no less than 3 days prior to initiation of disturbance. Surveys must follow established BLM standards and protocols, and should be approved by the BLM biologist prior to being implemented. If active burrows are located, the BLM biologist must be notified immediately and a buffer of 500 meters, or line of sight (lesser of the two), shall be placed around the burrowing owl's burrow until it vacates its burrow. If active burrows are located during the breeding season (March 1 – August 31), the active burrow shall not be disturbed until after the breeding season or the burrow is no longer active. If active burrows are located during the non-breeding season, a one-way door shall be installed in burrow openings to permanently exclude burrowing owls and close burrows after verifying burrows are empty based on site monitoring by a qualified biologist.

Do not harass or evict the burrowing owl out of the burrow, but wait until it vacates the burrow on its own and then implement the closing of the burrow openings. If a burrow needs to be permanently closed, create one passive relocation site/artificial burrow for every active burrow closed, in coordination with the BLM. Artificial burrows shall be located in the nearest suitable habitat within the Project Area, but outside of the disturbance area, to encourage the burrowing owls to use the artificial burrows. This would reduce the risk of burrowing owl mortality from the surface disturbing activities from the Proposed Action. If no active burrows are present in the area surveyed, implementation of the project should commence within 10 days of survey completion in order to avoid the need for a subsequent burrowing owl survey.

Non-raptor Migratory Birds (passerines)

Table 4-4a notes that the Project Area provides suitable habitat for four BLM sensitive passerine species: Black rosy-finch, Brewer's sparrow, Loggerhead shrike, and Sage thrasher.

Environmental protection measures for special status migratory birds have been incorporated into the Proposed Action. The special status migratory bird protection measures outlined in section 2.5.11 would reduce the potential for direct loss of nests (e.g. crushing) or indirect effects (e.g. abandonment) from increased noise due to surface clearing activities. After the implementation of the environmental protection measures, potential impacts to migratory birds that would be expected to occur include foraging and nesting habitat loss, and disturbance to migratory bird behavior from increased human presence and noise due to mining activities. After the implementation of the environmental protection measures, potential impacts to special status migratory birds that would be expected to occur include foraging loss and disturbance to bird behavior from increased human presence and noise due to mining activities.

The assessment area for special status migratory birds contains approximately 2,695 acres of migratory bird foraging and nesting habitat, of which 230 acres (8.5 percent) are expected to be disturbed as a result of surface clearing activities. Approximately 32 acres or 1.2 percent of the foraging habitat within the project area would be permanently lost due to the Brooks pit being left un-reclaimed. The remaining 198 acres or 7.3 percent of the migratory bird assessment area would be reclaimed after proposed mining concludes. The reclaimed land would have more grass and forb forage and less mature shrub forage in the immediate years after reclamation, which may result in a shift of avian species use within these areas. As the plant communities within the 198 acres mature, larger shrubs may provide additional cover and nesting opportunities.

Noise and Human Presence

Human presence and noise due to mining activities within the assessment area for migratory birds could displace migratory birds or affect their stress levels and behavior (Kempnaers et. al. 2010 and Schroeder, Nakagawa, Cleasby, and Burke 2012). Although several species of migratory birds can adapt somewhat to human disturbances, it is possible that utilization of the nesting and foraging resources in the Project Area and beyond could be prohibitive to migratory bird species typically found in the Project Area.

No Action Alternative

Under the No Action Alternative, Newmont would continue to manage the Lone Tree Mine in a care and maintenance status. Up to five acres of exploration-related surface disturbance could occur under the Brooks project notice. Therefore, up to five acres of special status species habitat could be disturbed.

4.1.5 Vegetation

Proposed Action

Activities in the Proposed Action would remove approximately 230 acres of vegetation within the Project Area, all on public land. The majority of new disturbance (approximately 80 percent) would occur within the Inter-Mountain Basins Big Sagebrush Shrubland community. Approximately 11 percent of new disturbance would occur within the Great Basin Xeric Mixed Sagebrush Shrubland community. Approximately eight percent of new disturbance would occur within the Inter-Mountain Basins Mixed Salt Desert Scrub community. The remaining 1 percent of new disturbance would occur within the Invasive Annual Grassland community.

Reclamation and revegetation activities are outlined in sections 2.4.2 through 2.4.7 of this EA. Reclamation and revegetation activities would be in conformance with the BLM and State of Nevada Reclamation regulations. Reclamation and revegetation would minimize the direct impacts to the vegetation communities within the Project Area.

Indirect effects to vegetation would include particulate deposition on the vegetation communities from mining activities and vehicular traffic within the Project Area. Deposition could result in lowered primary production in plants due to reduced photosynthesis and decreased water-use efficiency. The potential effects on vegetation from dust would be reduced by wind and periodic precipitation, which would remove accumulated dust. In addition, Newmont would implement the dust abatement measures identified in section 2.5.1.

Vegetation removal and subsequent reclamation efforts would result in plant community simplification and the conversion from a shrub-dominated community to a grass/forb-dominated community during activities conducted over the 3-year life of the Proposed Action. Once established, shrub species may become dominant within three to five years, depending on precipitation and growth media characteristics. Although the structure of the vegetation would be temporarily modified, the reclaimed plant community is expected to produce adequate cover to stabilize the site and provide forage for use by livestock and wildlife in the long term, thereby meeting reclamation goals.

No Action Alternative

Under the No Action Alternative, Newmont would continue to manage the Lone Tree Mine in a care and maintenance status. Up to five acres of exploration-related surface disturbance could occur under the Brooks project notice. The five acres of surface disturbance from the Brooks project notice would most likely occur in the Inter-Mountain Basins Big Sagebrush Shrubland, Great Basin Xeric Mixed Sagebrush Shrubland, and/or Inter-Mountain Basins Mixed Salt Desert Scrub communities. Reclamation of disturbances would temporarily modify the structure of the

vegetation community; however, the reclaimed plant community is expected to produce adequate cover to stabilize the site and provide forage for use by livestock and wildlife in the long term, thereby meeting reclamation goals.

4.1.6 Wildlife

Proposed Action

Environmental protection measures for wildlife have been incorporated into the Proposed Action. The wildlife protection measures outlined in section 2.5.11 would reduce the potential for large wildlife, such as pronghorn antelope and mule deer, from entering the Project Area.

After the implementation of the environmental protection measures, potential impacts to wildlife that would be expected to occur include habitat loss, habitat fragmentation, mortality from heavy equipment during construction and operations, disturbance to wildlife behavior from increased human presence and noise due to mining activities.

The Proposed Action includes a new perimeter fence constructed around the Project Area to prevent access by wildlife. The new perimeter fence would enclose approximately 1,670 acres of habitat and would fragment the year-round Pronghorn habitat within the Project Area and vicinity (4-miles around the Project Area).

The assessment area for wildlife contains approximately 809 acres of habitat, of which 230 acres (28.4 percent) are expected to be disturbed as a result of surface clearing activities. Approximately 32 acres (3.9 percent) of the habitat within the Project Area would be permanently lost due to the Brooks pit being left un-reclaimed. The remaining 198 acres or 24.5 percent would be reclaimed after proposed mining concludes. The reclaimed land would have more grass and forb forage and less mature shrub forage in the immediate years after reclamation, which may result in a shift of wildlife species use within these areas. As the plant communities within the 198 acres mature, larger shrubs may provide additional habitat opportunities for wildlife.

Human presence and noise due to mining activities within the assessment area for wildlife could displace wildlife or affect their stress levels and behavior. Wildlife may be displaced by activities, but would likely shift spatially into adjacent available habitat. There is similar habitat within and adjacent to the Mine Project Area where mobile wildlife could relocate. It is possible that utilization of the wildlife habitat in the assessment area and beyond could be prohibitive to wildlife species typically found in the assessment area. There are no known mule deer or pronghorn antelope migration corridors within the assessment area or within four miles of the assessment area. However, wildlife may be deterred from migrating through the assessment area due to increased human presence, noise from mining activities, and the presence of the proposed

perimeter fence. After the proposed mining concludes, the noise and human presence is expected to reduce and wildlife species could use the habitat within the assessment area.

Direct and indirect impacts to wildlife may include mortality from heavy equipment during construction and operations, permanent loss of 32 acres of habitat, temporary fencing of 1,760 acres of habitat, habitat fragmentation, change in vegetation community after reclamation, reduced forage, reduced cover, increased predation and displacement from mining activity noise.

No Action Alternative

Under the No Action Alternative, Newmont would continue to manage the Lone Tree Mine in a care and maintenance status. Up to five acres of exploration-related surface disturbance could occur under the Brooks project notice. Therefore, up to five acres of wildlife habitat could be disturbed.

4.2 Cumulative Effects Analysis

Cumulative impacts have been defined under 40 CFR §1508.7 as:

“The impact which results from the incremental impact of the action, decision, or Project when added to the other past, present, and reasonably foreseeable future actions (RFFAs), regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

Assumptions for Cumulative Effects Analysis

Direct and indirect consequences of the Proposed Action were evaluated previously. Analyzed in this section are those resources that have the potential to be incrementally impacted by the Proposed Action within the identified cumulative effects study areas (CESA) described below. Based on the preceding analysis in Chapter 4, no cumulative impacts are expected for Cultural Resources, including NHT. Therefore, this analysis focusses on cumulative impacts to air quality, migratory birds, raptors, special status species, vegetation, and general wildlife.

Description of Cumulative Effects Study Area Boundaries

In an effort to expand upon cumulative effects analyses conducted for other projects in the near vicinity, the Air Quality CESA for the Proposed Action is the same CESA used in the *Draft and Final Environmental Impact Statement for the Phoenix Copper Leach Project*, DOI-BLM-NV-B010-2011-0037-EIS, Record of Decision signed June 18, 2012 (Phoenix EIS). The Air Quality CESA was developed based on an EPA standard of 50- kilometer radius around the Phoenix Mine project area, as shown in Figure 12. Table 4-5 outlines the CESA areas by each resource.

The CESAs for natural resources have been developed based upon individual species and their movement capabilities. Specifically, three CESA boundaries have been developed for natural resources as shown on Figure 13: the Raptor CESA, the Volant Wildlife CESA (a volant species is one that has the ability to fly), and the Nonvolant Wildlife CESA. The Raptor CESA is based on a 10-mile radius from the project area. The other two natural resources CESAs are based on the Herrin Slough-Humboldt River hydrologic unit watershed and were separated into volant and nonvolant species to better quantify cumulative impacts. Some wildlife, such as passerines and bats, would be expected to travel across Interstate-80, while others, such as pronghorn antelope, pygmy rabbit, Preble’s shrew, and dark kangaroo mouse would not. The Nonvolant Wildlife CESA includes the portion of the hydrologic unit watershed that is south-southwest of Interstate-80 because nonvolant wildlife species are not expected to travel across Interstate-80. The Volant Wildlife CESA is based on the entire hydrologic unit watershed boundary that includes the Proposed Action. Cumulative effects to special status plants are incorporated into the Nonvolant Wildlife CESA. For this cumulative effects analysis, vegetation is incorporated in the discussion of impacts to habitat in the natural resources CESAs.

Table 4-5: Cumulative Effects Study Areas

Resource	CESA Name	CESA Size (acres)
Air Quality	Air Quality CESA	1,940,760
Raptors (including Golden Eagles)	Raptor CESA	245,540
Special status plants, special status small mammals (excluding bats), and general wildlife (including pronghorn antelope),	Nonvolant Wildlife CESA	92,506
Special status passerines and bats	Volant Wildlife CESA	214,618

4.2.1 Past and Present Actions

For each CESA being examined, information on activities that have had an impact on the individual resources being studied within that CESA were researched. On the basis of aerial photographic data, the BLM’s Land and Mineral Legacy Rehost 2000 System (LR2000) database (which records lands and mineral actions) reports run on December 5, 2014, agency records, and current agency Geographic Information Systems (GIS) records, activities which have impacted resources within the CESAs to varying degrees are discussed in the following sections. The amount of disturbance calculated for each CESA may be conservative due to potential overlap of disturbance from adjacent activities (e.g., existing road and powerline sharing same disturbance).

Air Quality CESA

The past and present actions that are pertinent to the cumulative air quality analysis are emissions from the Phoenix Mine and Marigold Mine.

Raptor CESA

The past and present actions that are pertinent to the cumulative effects analysis area for raptors include mineral exploration and development, wildland fires, transportation networks, utilities, livestock grazing, and dispersed recreation.

Within the Raptor CESA, past and present mineral exploration and development has created a total of 11,990 acres of surface disturbance. This equals approximately 5 percent of the Raptor CESA.

From 1985 to 2013, wildland fires have burned approximately 35,644 acres within the Raptor CESA. This equals approximately 14.5 percent of the Raptor CESA.

Approximately 23 miles of Interstate-80 is located within the Raptor CESA. The total surface disturbance from Interstate-80 is approximately 1,115 acres. Additionally, there are 32 miles of county roads and 7 miles of BLM roads within the Raptor CESA, generally trending in a southwest to northeast direction. When assuming a road width of 30 feet, the total disturbance from county and BLM roads is approximately 142 acres. Approximately 594 miles of other roads (unmaintained two-tracks) occur within the Raptor CESA, and when assuming a 10 foot width, the total surface disturbance is approximately 720 acres. Road maintenance, including grading, graveling, or paving occurs on each of these roads. The total surface disturbance from Interstate-80, county, BLM and other roads combined is approximately 1,977 acres. This equals approximately 0.8 percent of the Raptor CESA.

Within the Raptor CESA there are approximately 230 miles of linear utility features on public lands including transmission lines, telephone/telegraph lines, buried pipelines, and railroads. There is also an unknown amount of linear utility features on private lands for which data was not readily available. This analysis assumes an equal length of linear utility features on private land. To estimate cumulative impacts it is assumed that each linear feature has a disturbance width of 20 feet. Therefore, approximately 1,116 acres of surface disturbance have occurred on within the Raptor CESA. This equals approximately 0.4 percent of the Raptor CESA.

Livestock grazing occurs throughout the Nonvolant Wildlife CESA. Rangeland improvements within the Nonvolant Wildlife CESA includes fencing, cattle guards, culverts and head gates, developed springs, water troughs, wells, and pipelines.

Dispersed recreation, including off highway vehicle use and hunting, occurs throughout the Raptor CESA.

Nonvolant Wildlife CESA

The past and present actions that are pertinent to the cumulative effects analysis area for nonvolant wildlife include mineral exploration and development, wildland fires, transportation networks, utilities, dispersed recreation and livestock grazing.

Within the Nonvolant Wildlife CESA, past and present mineral exploration and development has created a total of 11,948 acres of surface disturbance. This equals approximately 13 percent of the Nonvolant Wildlife CESA.

From 1985 to 2013, wildland fires have burned approximately 1,694 acres within the Nonvolant Wildlife CESA. This equals approximately 2 percent of the Nonvolant Wildlife CESA.

Approximately 23 miles of Interstate-80 is located within the Nonvolant Wildlife CESA. The total surface disturbance from Interstate-80 is approximately 1,115 acres. Additionally, there are 15 miles of county roads and 4 miles of BLM roads within the Nonvolant Wildlife CESA, generally trending in a southwest to northeast direction. When assuming a road width of 30 feet, the total disturbance from county and BLM roads is approximately 69 acres. Approximately 231 miles of other roads (unmaintained two-tracks) occur within the Nonvolant Wildlife CESA, and when assuming a 10 foot width, the total surface disturbance is approximately 280 acres. Road maintenance, including grading, graveling, or paving occurs on each of these roads. The total surface disturbance from Interstate-80, county, BLM and other roads combined is approximately 1,464 acres. This equals approximately 1.6 percent of the Nonvolant Wildlife CESA.

Within the Nonvolant Wildlife CESA there are approximately 81 miles of linear utility features on public lands including transmission lines, telephone/telegraph lines, buried pipelines, and railroads. There is also an unknown amount of linear utility features on private lands for which data was not readily available. This analysis assumes an equal length of linear utility features on private land. To estimate cumulative impacts it is assumed that each linear feature has a disturbance width of 20 feet. Therefore, approximately 392 acres of surface disturbance have occurred on public lands within the Nonvolant Wildlife CESA. This equals approximately 0.4 percent of the Nonvolant Wildlife CESA.

Dispersed recreation, including off highway vehicle use and hunting, occurs throughout the Nonvolant Wildlife CESA.

Livestock grazing occurs throughout the Nonvolant Wildlife CESA. Rangeland improvements within the Nonvolant Wildlife CESA includes fencing, cattle guards, culverts and head gates, developed springs, water troughs, wells, and pipelines.

Volant Wildlife CESA

The past and present actions that are pertinent to the cumulative effects analysis area for volant wildlife include mineral exploration and development, wildland fires, transportation networks, utilities, dispersed recreation and livestock grazing.

Within the Volant Wildlife CESA, past and present mineral exploration and development has created a total of 11,948 acres of surface disturbance. This equals approximately 5.5 percent of the Volant Wildlife CESA.

From 1985 to 2013, wildland fires have burned approximately 3,313 acres within the Volant Wildlife CESA. This equals approximately 1.5 percent of the Volant Wildlife CESA.

Approximately 23 miles of Interstate-80 is located within the Volant Wildlife CESA. The total surface disturbance from Interstate-80 is approximately 1,115 acres. Additionally, there are 30 miles of county roads and 4 miles of BLM roads within the Volant Wildlife CESA, generally trending in a southwest to northeast direction. When assuming a road width of 30 feet, the total disturbance from county and BLM roads is approximately 124 acres. Approximately 471 miles of other roads (unmaintained two-tracks) occur within the CESA, and when assuming a 10 foot width, the total surface disturbance is approximately 571 acres. Road maintenance, including grading, graveling, or paving occurs on each of these roads. The total surface disturbance from Interstate-80, county, BLM and other roads combined is approximately 1,810 acres. This equals approximately 0.8 percent of the Volant Wildlife CESA.

Within the Volant Wildlife CESA there are approximately 240 miles of linear utility features on public lands including transmission lines, telephone/telegraph lines, buried pipelines, and railroads. There is also an unknown amount of linear utility features on private lands for which data was not readily available. This analysis assumes an equal length of linear utility features on private land. To estimate cumulative impacts it is assumed that each linear feature has a disturbance width of 20 feet. Therefore, approximately 1,164 acres of surface disturbance have occurred on public lands within the Volant Wildlife CESA. This equals approximately 0.5 percent of the Volant Wildlife CESA.

Dispersed recreation, including off highway vehicle use and hunting, occurs throughout the Volant Wildlife CESA.

Livestock grazing occurs throughout the Volant Wildlife CESA. Rangeland improvements within the Volant CESA includes fencing, cattle guards, culverts and head gates, developed springs, water troughs, wells, and pipelines.

4.2.2 Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions (RFFAs) within the CESAs are those present activities that would continue to occur throughout the life of the Brooks Project and those pending projects for which an application is under evaluation, regardless of land status. The BLM LR2000 database was searched on December 5, 2014, for any pending actions that could contribute to a combined effect on the resources being analyzed during the life of the Proposed Action. Reasonably foreseeable activities are identified below, by CESA.

Air Quality CESA

Mining activities at the Phoenix and Marigold Mines would continue through the life of the Proposed Action. There are no pending activities with the potential to interact with the Phoenix Mine, Marigold Mine, and Brooks project within the Air Quality CESA.

Raptor CESA

Past and present actions identified above would be expected to continue through the life of the Proposed Action. It is reasonable to assume that wildfire events could occur within the Raptor CESA during the life of the Proposed Action. There are no known pending activities within the Raptor CESA that have a potential to affect raptor species.

Nonvolant Wildlife CESA

Past and present actions identified above would be expected to continue through the life of the Proposed Action. It is reasonable to assume that wildfire events could occur within the Nonvolant Wildlife CESA during the life of the Proposed Action. There are no known pending activities within the Nonvolant Wildlife CESA that have a potential to affect nonvolant wildlife species.

Volant Wildlife CESA

Past and present actions identified above would be expected to continue through the life of the Proposed Action. It is reasonable to assume that wildfire events could occur within the Volant Wildlife CESA during the life of the Proposed Action. There are no known pending activities within the Volant Wildlife CESA that have a potential to affect volant wildlife species.

4.2.3 Cumulative Impacts to Affected Resources

Impacts associated with past, present, and RFFAs are generally created by ground- or vegetation-disturbing activities that affect natural and cultural resources in various ways. Of particular concern is the accumulation of these impacts over time. This section of the EA considers the nature of the cumulative effect and analyzes the degree to which the Proposed Action and No Action Alternative contribute to the collective impact.

4.2.3.1 Air Quality

Relevant CESA

In an effort to build upon existing cumulative analyses in the area, the cumulative effect study area from the Phoenix EIS was determined appropriate for use in conducting a cumulative effects analysis for the Proposed Action. This analysis considers the cumulative impact to the regional air quality within a 50 kilometer radius from the Phoenix Mine. The Air Quality CESA covers approximately 1,940,760 acres (Figure 12).

Impacts From Past and Present Actions

Air quality modeling was conducted in support of the Phoenix EIS for direct and indirect impacts. In addition a cumulative model was prepared to consider sources within the CESA that had potential to interact and cause a cumulative impact. The following is an excerpt from the Phoenix Final EIS, Executive Summary with regard to direct and indirect impacts.

Phoenix Final EIS 2012 Executive Summary, page E-14:

Air Quality

Estimates of the emission rates for five criteria air pollutants (particulate matter less than 10 microns in diameter [PM₁₀]; particulate matter less than 2.5 microns in diameter [PM_{2.5}]; carbon monoxide [CO]; sulfur dioxide [SO₂]; and oxides of nitrogen [NO_x]), the two criteria air pollutant precursors (NO_x and volatile organic compounds), and the greenhouse gas (GHG) carbon dioxide were made from each emission unit for all five applicable criteria air pollutant regulatory time periods (1-hour, 3-hour, 8-hour, 24-hour, and annual).

The emission rates for PM₁₀, CO, NO_x, and SO₂ specified in the current NDEP-Bureau of Air Pollution Control (BAPC) Class II Air Quality Operating Permit for the proposed project were used for the permitted emission units which would be operational during Year 2016. PM_{2.5} emission rates for these permitted sources were calculated from the NDEP-BAPC permitted PM₁₀ emission rates using PM_{2.5}/PM₁₀ ratios developed from the emission factors found in the current versions of U.S. Environmental Protection Agency AP-42. The maximum modeled pollutant concentrations would be in compliance with state and national Ambient Air Quality Standards. Fugitive dust and vehicle exhaust from mining activities and equipment would be managed under the Class II operating permit.

No individual hazardous air pollutants (HAP) would be emitted in a quantity greater than the major source limit of 10 tons per year (tpy). Also, the combined HAP emissions are less than the major source limit of 25 tpy. Therefore, the Proposed Action would not constitute a major HAP source.

GHG emissions associated with the Proposed Action would contribute approximately 14,757 tpy from fuel combustion and 21,473 tpy from electrical power for a total of 36,230 tpy of GHG.

The entire Phoenix EIS Air Quality analysis for direct, indirect and cumulative impacts is found on pages 3.10-10 through 3.10-19 in the Phoenix Draft EIS and specifically, the cumulative impacts analysis is found on page 3.10-18. The sources of emissions within the CESA that were inputted into the model for cumulative impacts are found on page 3.10-18 along with the model parameters. The resulting modeled air quality pollutant concentrations were illustrated in a table in the Phoenix Draft EIS. This table is provided here to provide the reader with these results.

Table 4-6: Phoenix EIS Modeled Cumulative Air Pollutant Concentrations – Highest of All Source Groups

Criteria Pollutant	Averaging Period	NAAQS ($\mu\text{g}/\text{m}^3$)	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total ($\mu\text{g}/\text{m}^3$)	Total as a percent of NAAQS (percent)
PM ₁₀	24-Hour	150	41.68	19.628	61.31	40.9
PM _{2.5}	24-Hour	35	15.83	6.726	22.56	64.5
	Annual	15	3.65	2.36	6.01	40.1
NO _x	24-Hour	188	107.96	15.094	123.05	65.5
	Annual	100	7.12	1.887	9.00	9.0

Source: Phoenix EIS, 2012

Although the Marigold Mine, located approximately six miles southeast of the Proposed Action, did not contribute to cumulative air quality impacts as evidenced by the Phoenix EIS, the Marigold FSEIS 2003 and the *Environmental Assessment, Target 3 Project, Marigold Mining Company*, DOI-BLM-NV-W010–2013–0018–EA, Decision Record and Finding of No Significant Impact (DR and FONSI) signed October 31, 2013 (Marigold EA), it is discussed here to disclose the modeling results for the Marigold Mine. The following information is extracted from the Marigold EA:

The table below is a summary of the impacts that were assessed in the Marigold FSEIS for each NAAQS averaging period with the background concentrations included. In addition, the table also includes the net change in Marigold Mine emissions. The NAAQS have been updated since the modeling exercise was completed, but impacts from similarly modeled constituents show relatively low impacts with regards to the current NAAQS.

Table 4-7: Model-Predicted Maximum Impacts and the Marigold EA Emissions

Pollutant	Averaging Period	Class II Increment ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	NEVADA AAQS ($\mu\text{g}/\text{m}^3$)	Modeled Impact	Emissions Difference (ton/year)
Nitrogen Oxide	Annual	25	100	100	0.90	-168.3
	1-hr	NS	188	NS	NM	-168.3
Sulfur Dioxide	Annual	20	NS	80	0.00	+0.7
	24-hr	91	NS	365	0.00	+0.7
	3-hr	512	1300	1300	0.00	+0.7
	1-hr	NS	196	NS	NM	+0.7
Carbon Monoxide	8-hr	NS	10,500	10,500 ¹	59.8	-718.2
	1-hr	NS	40,500	40,500	175.2	-718.2
PM ₁₀	Annual	17	NS	50	12.5	-31.9
	24-Hr	30	150	150	53.3	-31.9
PM _{2.5}	Annual	4	15	NA	NM	-30.5
	24-Hr	9	35	NA	NM	-30.5
Lead	Quarterly	NS	1.5	1.5	NM	NM

NM = Not Modeled

NS = No Standard

GHG emissions associated with the Marigold EA were from the consumption of fuel from the haul trucks and loaders. Explicit emissions were calculated for emissions of GHGs from existing Marigold Mine equipment and new equipment associated with the Marigold EA. The results are included in the table below.

Table 4-8: Direct Marigold EA Project GHG Emissions (tons/year)

Source Category	CO _{2e}
Current	62,917.5
Proposed Action	71,526.2
Net Change	+8,608.8

Sources of HAPs for the Marigold EA included hydrocarbon combustion from the haul trucks and loaders. Emissions of HAPs for the Marigold EA were calculated using AP-42 emissions factors. The total changes in HAP emissions for the Marigold EA are summarized in the table below.

Table 4-9: Marigold EA Net Change in HAP Emissions (tons/year)

Pollutant	Emissions
Benzene	0.0408
Toluene	0.0148
Xylenes	0.0102
Formaldehyde	0.00415
Acetaldehyde	0.00133
Acrolein	0.000415
Naphthalene	0.00684
Total Net Change in HAPs	0.0785

Impacts From RFFAs

Refer to Impacts from Past and Present Actions above for activities that would continue to operate during the life of the Proposed Action. There are no pending projects that would impact the Air Quality CESA.

Cumulative Impacts

Proposed Action

Cumulative impacts to air quality within the Air Quality CESA would result from the past and present actions and RFFAs when combined with the Proposed Action. The incremental contribution of the Proposed Action's particulate and combustion emissions and fugitive dust would be relatively small, and the cumulative emissions are generally dispersed. Stationary sources are regulated by the BAPC under individual permits to ensure compliance with the air quality standards. Considering the relatively low emissions from the Proposed Action and other sources in the Air Quality CESA, as well as their relative locations, the Brooks project would not substantially contribute to cumulative impacts to air quality in the CESA.

No Action Alternative

No cumulative impacts would result from the No Action Alternative.

4.2.3.2 Raptor CESA

Relevant CESA

The Raptor CESA is a 10-mile radius around the Project Area which includes approximately 245,540 acres.

Impacts From Past and Present Actions

Past and present actions that are likely to have impacts to raptors include mineral exploration and development, wildland fires, transportation networks, utilities, dispersed recreation, and livestock grazing as described in Section 4.2.1.

Surface disturbance from these past and present activities in the Raptor CESA affect prey populations that raptors forage on and the surface disturbing activities contribute to an approximate total 50,777 acres of raptor foraging habitat loss or 20.679 percent of the Raptor CESA boundary. It is reasonable to assume that some areas from past surface disturbing activities have been reclaimed and some areas have become naturally stabilized, and/or naturally revegetated over time. However, present activities, such as the Interstate-80, are a permanent feature of the Raptor CESA and the foraging habitat has been lost permanently. Some activities have provided habitat features for raptors, such as utility ROWs powerpoles and telegraph poles providing raptor nesting habitat and perching opportunities within the Raptor CESA. Noise and human presence from the past and present activities in the Raptor CESA affect raptor behavior and their stress levels (Kempnaers et. al. 2010 and Schroeder, Nakagawa, Cleasby, and Burke 2012). Although several species of raptors can adapt somewhat to human disturbances, it is possible that utilization of the nesting and foraging resources adjacent to activities creating noise and having humans present in the Raptor CESA, such as Interstate-80 and existing mining activities, could be prohibitive to raptor species typically found in the Raptor CESA.

Impacts From RFFAs

Potential impacts to raptors from mining, mineral exploration, livestock grazing, transportation networks, ROWs, dispersed recreation, or loss of habitat associated with potential wildland fires could occur. The potential impacts to raptors from the RFFAs are expected to be similar to the impacts from the past and present actions, described above.

Cumulative Impacts

Proposed Action

The Proposed Action would impact approximately 230 acres of raptor foraging habitat. When added to the past, present, and RFFA disturbance acres, the cumulative total is 51,007 acres within a total CESA measuring 245,540 acres (representing 20.773 percent of the total CESA). Based on the above analysis and findings, incremental cumulative impacts to raptors as a result of the Proposed Action would represent an incremental disturbance of 0.094 percent within the Raptor CESA.

No Action Alternative

The No Action Alternative would allow five acres of exploration-related surface disturbance under the Brooks project notice. When added to the past, present, and RFFA disturbance acres, the cumulative total is 50,782 acres within a total CESA measuring 245,540 acres (representing 20.681 percent of the total CESA). Based on the above analysis and findings, incremental cumulative impacts to raptors as a result of the No Action Alternative would represent an incremental disturbance of 0.002 percent within the Raptor CESA.

4.2.3.3 Nonvolant Wildlife CESA

Relevant CESA

The Nonvolant Wildlife CESA includes the portion of the hydrologic unit watershed that is south-southwest of Interstate-80 because nonvolant wildlife species are not expected to travel across Interstate-80. The Nonvolant Wildlife CESA includes approximately 92,506 acres

Impacts From Past and Present Actions

Past and present actions that are likely to have impacts to nonvolant wildlife species include mineral exploration and development, wildland fires, transportation networks, utilities, dispersed recreation, and livestock grazing, as described in Section 4.2.1.

Surface disturbance from these past and present activities in the Nonvolant Wildlife CESA have affected habitat for nonvolant wildlife species by reducing foraging habitat, reducing cover habitat, increasing risk of predation and increasing displacement due to activity noise and human presence. Surface disturbance from these past and present activities in the Nonvolant Wildlife CESA have reduced habitat for special status plants. Surface disturbing activities contribute to an approximate total of 15,498 acres of nonvolant wildlife and special status plant habitat loss or 16.754 percent of the Nonvolant Wildlife CESA. It is reasonable to assume that some areas from past surface disturbing activities have been reclaimed and some areas have become naturally stabilized, and/or naturally revegetated over time. However, present activities, such as Interstate-80, are a permanent feature of the Nonvolant Wildlife CESA and the habitat has been lost permanently. Noise and human presence from the past and present activities in the Nonvolant Wildlife CESA affect nonvolant wildlife behavior and their stress levels. Although wildlife can adapt somewhat to human disturbances, it is possible that utilization of the habitat adjacent to activities creating noise and having humans present in the Nonvolant Wildlife CESA, such as Interstate-80 and existing mining activities, could be prohibitive to wildlife typically found in the Nonvolant Wildlife CESA.

Impacts From RFFAs

Potential impacts to nonvolant wildlife and special status plants from mining, mineral exploration, livestock grazing, transportation networks, utilities, dispersed recreation, or loss of habitat associated with potential wildland fires could occur. The potential impacts to nonvolant wildlife and special status plants from the RFFAs are expected to be similar to the impacts from the past and present actions, described above.

Cumulative Impacts

Proposed Action

The Proposed Action would impact approximately 230 acres of habitat. When added to the past, present, and RFFA disturbance acres, the cumulative total is 15,728 acres within a total CESA measuring 92,506 acres (representing 17.002 percent of the total CESA). Based on the above analysis and findings, incremental cumulative impacts to nonvolant wildlife and special status plants as a result of the Proposed Action would represent an incremental disturbance of 0.249 percent within the CESA.

No Action Alternative

Under the No Action Alternative five acres of exploration-related surface disturbance would occur from the Brooks project notice. When added to the past, present, and RFFA disturbance acres, the cumulative total is 15,503 acres within a total CESA measuring 92,506 acres (representing 16.758 percent of the total CESA). Based on the above analysis and findings, incremental cumulative impacts to nonvolant wildlife and special status plants as a result of the No Action Alternative would represent an incremental disturbance of 0.004 percent within the CESA.

4.2.3.4 Volant Wildlife CESA

Relevant CESA

The Volant Wildlife CESA is based on the entire hydrologic unit watershed boundary that includes the Proposed Action. The Volant Wildlife CESA contains approximately 214,618 acres.

Impacts From Past and Present Actions

Past and present actions that are likely to have impacts to volant wildlife species include mineral exploration and development, wildland fires, transportation networks, utilities, dispersed recreation, and livestock grazing, as described in Section 4.2.1.

Surface disturbance from these past and present activities in the Volant Wildlife CESA have affected habitat for volant wildlife species by reducing foraging habitat, reducing nesting habitat,

reducing hibernating habitat, increasing risk of predation and increasing displacement due to activity noise and human presence. Surface disturbing activities contribute to an approximate total of 18,235 acres of volant wildlife habitat loss or 8.5 percent of the Volant Wildlife CESA. It is reasonable to assume that some areas from past surface disturbing activities have been reclaimed and some areas have become naturally stabilized, and/or naturally revegetated over time. However, present activities, such as Interstate-80, are a permanent feature of the Volant Wildlife CESA and the habitat has been lost permanently. Noise and human presence from the past and present activities in the Volant Wildlife CESA affect nonvolant wildlife behavior and their stress levels. Although wildlife can adapt somewhat to human disturbances, it is possible that utilization of the habitat adjacent to activities creating noise and having humans present in the Volant Wildlife CESA, such as Interstate-80 and existing mining activities, could be prohibitive to wildlife typically found in the Volant Wildlife CESA.

Impacts From RFFAs

Potential impacts to volant wildlife from mining, mineral exploration, livestock grazing, transportation networks, utilities, dispersed recreation, or loss of habitat associated with potential wildland fires could occur. The potential impacts to volant wildlife from the RFFAs are expected to be similar to the impacts from the past and present actions, described above.

Cumulative Impacts

Proposed Action

The Proposed Action would impact approximately 230 acres of habitat. When added to the past, present, and RFFA disturbance acres, the cumulative total is 18,465 acres within a total CESA measuring 214,618 acres (representing 8.6 percent of the total CESA). Based on the above analysis and findings, incremental cumulative impacts to volant wildlife as a result of the Proposed Action would represent an incremental disturbance of 0.108 percent within the CESA.

No Action Alternative

Under the No Action Alternative five acres of exploration-related surface disturbance would result from the Brooks project notice. When added to the past, present, and RFFA disturbance acres, the cumulative total is 18,240 acres within a total CESA measuring 214,618 acres (representing 8.5 percent of the total CESA). Based on the above analysis and findings, incremental cumulative impacts to volant wildlife as a result of the No Action Alternative would represent disturbance to an incremental disturbance of 0.003 percent within the CESA.

5.0 Recommended Mitigation

The following mitigation measures are recommended to be conditions of any subsequent authorization:

Special Status Plants

A plant survey shall be conducted by a qualified botanist for Margaret rushy milkvetch in all potential habitat within the Project Area prior to ground disturbance in known potential habitat during correct time of year (May – June), due to the 2013 plant survey being conducted outside of the correct flowering time for species. Surveys must follow established BLM standards and protocols, and shall be approved by the BLM biologist prior to being implemented. If found, place 50 foot buffer around special status plants. If special status plant species are present and not avoidable, collect seeds from special status plants for seedling growth and planting and/or transplant special status plant species outside of disturbance areas. This mitigation is designed to maintain the viability of the population through seed collection, storage, germination, seedling planting, transplanting and monitoring, all through coordination with the BLM. A transplant location suitable for survival of the plant(s), with respect to growth requirements and land use objectives (e.g. areas where surface disturbance is unlikely), would be identified. If a transplant location is not determined prior to the completion of this analysis, the prospective transplant location would need to be evaluated under NEPA once it has been identified.

Sensitive Small Mammals

Seven to ten days prior to vegetation removing activities (including exploration), vegetation in proposed disturbance areas shall be mowed to a height of eight to twelve inches above ground to create less desirable habitat conditions and to encourage wildlife species, including the pygmy rabbit, dark kangaroo mouse, and Preble's shrew to vacate the disturbance areas. This may reduce the risk of mortality to pygmy rabbit, dark kangaroo mouse, and Preble's shrew. Areas where vegetation is naturally less than 12 inches may be excluded from this requirement with approval from the authorized officer, based on field verification from BLM staff. Mowing in potential special status plant habitat shall not occur prior to completion of special status plant surveys, as described in the special status plant mitigation.

If mowing occurs during the migratory bird breeding season (March 1 – August 31), a migratory bird survey (including burrowing owls) will be required prior to mowing as outlined in the Operational and Performance Standards and Environmental Protection Measures section in chapter 2.5.12. Mowing after the migratory bird clearance survey, and within seven to ten days prior to surface disturbance, will allow the applicant to conduct necessary bird clearance surveys and may also allow pygmy rabbit, dark kangaroo mouse, and Preble's shrew to relocate outside of the disturbance areas.

If mowing occurs outside of the migratory bird breeding season (September 1 – February 28), a burrowing owl clearance survey will be required, as described in the burrowing owl mitigation.

Western Burrowing Owl

In order to avoid potential impacts to burrowing owls, a burrowing owl survey shall be conducted by a qualified biologist prior to ground disturbance, any time of the year due to some burrowing owls being year-round residents that do not migrate. Surveys must be conducted no more than 10 days and no less than 3 days prior to initiation of disturbance. Surveys must follow established BLM standards and protocols, and should be approved by the BLM biologist prior to being implemented. If active burrows are located, the BLM biologist must be notified immediately and a buffer of 500 meters, or line of sight (lesser of the two), shall be placed around the burrowing owl's burrow until it vacates its burrow. If active burrows are located during the breeding season (March 1 – August 31), the active burrow shall not be disturbed until after the breeding season or the burrow is no longer active. If active burrows are located during the non-breeding season, a one-way door shall be installed in burrow openings to permanently exclude burrowing owls and close burrows after verifying burrows are empty based on site monitoring by a qualified biologist.

Do not harass or evict the burrowing owl out of the burrow, but wait until it vacates the burrow on its own and then implement the closing of the burrow openings. If a burrow needs to be permanently closed, create one passive relocation site/artificial burrow for every active burrow closed, in coordination with the BLM. Artificial burrows shall be located in the nearest suitable habitat within the Project Area, but outside of the disturbance area, to encourage the burrowing owls to use the artificial burrows. This would reduce the risk of burrowing owl mortality from the surface disturbing activities from the Proposed Action. If no active burrows are present in the area surveyed, implementation of the project should commence within 10 days of survey completion in order to avoid the need for a subsequent burrowing owl survey.

6.0 Tribes, Individuals, Organizations, or Agencies Consulted

6.1 Native American Consultation

On July 23, 2014, formal consultation letters were sent to the Battle Mountain Band Tribe and Fort McDermitt Tribe. Additionally, an email soliciting consultation was sent to the Battle Mountain Band Tribe on July 29, 2014. Through previous consultation (on August 15, 2013 and May 12, 2014) for other NEPA projects, the Battle Mountain Band Tribe has expressed that mining projects not affecting prehistoric cultural sites are generally not of concern. The Proposed Action would not affect any prehistoric cultural sites, and BLM did not receive a response from either tribe. Based on previous consultation and lack of prehistoric sites, no Native American religious concerns are expected. The Battle Mountain Band Tribe and Fort McDermitt Tribe will receive another opportunity to consult as a part of this preliminary EA process.

6.2 Agency Coordination and/or Consultation (Agencies)

Agency consultation was used for the preparation of supporting baseline reports and for the preparation of this EA. Agency consultation response references are listed below.

NDOW. 2014. Email to Daniel Atkinson (BLM) from Kenny Pirkle (NDOW). *Re: Brooks Info.* August 6, 2014.

NDOW. 2013. Letter to Jocelyn Rae Finch (ARCADIS) from Timothy M. Herrick (NDOW). *Re: Lone Tree Mine Expansion.* October 17, 2013.

NNHP. 2013. Letter to Jocelyn Rae Finch (ARCADIS) from Eric S. Miskow (NNHP). *Re: Data request received 25 September 2013.* September 30, 2013.

USFWS. 2013. Report: Natural Resources of Concern. *Project Name: Lone Tree Mine Expansion Project.* September 26, 2013.

6.3 Individuals and/or Organizations Consulted

Trails West and the Oregon-California Trails Association were notified of the Proposed Action related to the California NHT. Attempts to consult with the Oregon-California Trails Association on the visual assessment findings have met with no response to date.

6.4 Public Outreach/Involvement

A scoping process was conducted in order to determine the scope of this environmental analysis. Internal scoping that involved the BLM staff identified resources that may require analysis. The BLM staff then reviewed existing National Environmental Policy Act (NEPA) documents in the project vicinity and began preparing a Determination of NEPA Adequacy (DNA) for the

Proposed Action. On September 17, 2014, a draft version of the DNA was released for public review and input. Three individual comment letters were received. During and after the 30-day public review period, further internal coordination occurred within BLM. Ultimately, the decision was made to forgo the use of a DNA and prepare this EA. External scoping issues that were identified during the public review of the draft DNA have been considered in this EA.

This Preliminary EA will be made available for a 15-day public comment period through the BLM ePlanning NEPA Register.

7.0 List of Preparers

BLM

Name	Area of Responsibility
Daniel Atkinson	Project Lead and Geology
Jeanette Black	Hydrology
Robert Burton	Soils and Vegetation
Kathy Cadigan	Wildlife, Migratory Birds, and Special Status Species
Joey Carmosino	Recreation and Visual Resources
Debbie Dunham	Land Use Authorizations
Mark E. Hall	Native American Religious Concerns
Fred Holz	Hazardous Materials
Dave Jones	Air Quality
Craig Nicholls	Air Quality
Peggy McGuckian	Cultural Resources and Paleontological Resources
Derek Messmer	Fire Management and Fuels
Lynn Ricci	NEPA Compliance
Zwaantje Rorex	Wilderness, Wilderness Study Areas, and Lands with Wilderness Characteristics
Tyler Stewart	Rangeland Management
Julie Suhr Pierce	Social Values and Economics
Michael Whalen	Invasive, Non-Native Species

8.0 Cooperating Agencies

Early coordination with the Nevada Department of Wildlife regarding the Proposed Action indicated that there were no major wildlife concerns requiring their dedicated attention, and therefore cooperating agency status was declined. No other potential cooperating agencies were identified during scoping.

9.0 References

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10.0 Figures