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Environmental Assessment

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Montezuma Mines Inc.

South Sleeper Exploration Project

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Humboldt River Field Office, Nevada

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BLM/NV/WN/EA/14-29+1792

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LIST OF ACRONYMS

amsl	above mean sea level
APE	Area of Potential Effeccts
ARPA	Archaeological Resources Protection Act
ATR	automated traffic recorder
AUM	animal unit months
BAPC	Bureau of Air Pollution Control
BLM	Bureau of Land Management
BMP	best management practices
CESA	Cumulative Effects Study Area
CFR	Code of Federal Regulations
Project Area	South Sleeper Exploration Project Area encompassing 3,459 acres
CO	carbon monoxide
CO_2	carbon dioxide
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act of 1976
GHG	Greenhouse Gases
GPM	gallons per minute
HAPs	hazardous air pollutants
HE	Habitat Evaluation
IM	Instruction Memorandum
MBTA	Migratory Bird Treaty Act
MMI	Montezuma Mining Inc.
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
NESHAPS	National Emissions Standards for Air Pollutants
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NO_x	Nitrous Oxide
NO_2	nitrogen dioxide
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
NTT	Greater Sage-grouse National Technical Team
OHV	off-highway-vehicle
PGH	Preliminary General Habitat
$PM_{2.5}$	2.5 microns in aerodynamic diameter
PM_{10}	10 microns in aerodynamic diameter
PMU	Population Management Unit
ppb	parts per billion
PPH	Preliminary Priority Habitat
ppm	parts per million
RFFA	reasonably foreseeable future actions
RC	reverse circulation
ROW	right-of-way
SAD	surface area disturbance
SO_2	sulfur dioxide
SR	State Route

T39N, R34E	Township 39 North, Range 34 East
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Introduction

1.1 Identifying Information

1.1.1 Title, EA Number, and Project Type

Title: Montezuma Mines Inc. South Sleeper Exploration Project

NEPA Number: DOI-BLM-NV-W010-2014-0029-EA

Type of Project: Locatable Minerals Exploration Project

1.1.2 Location of the Proposed Action

The proposed South Sleeper Exploration Plan of Operations (Plan) Project Area is approximately 30 miles north-northwest of Winnemucca in Humboldt County, Nevada and immediately south of the existing Sleeper Mine. The Project Area for the proposed Plan includes all or parts of Township 39 North, Range 34 East, sections 1 and 12; Township 40 North, Range 35 East, sections 31 through 35; and Township 39 North, Range 35 East, sections 4 through 9. The general location of the Project Area is shown on Figure 1.

The approximately 3,459 acre Plan boundary is located on public lands administered by the Bureau of Land Management Winnemucca District, Humboldt River Field Office (BLM). The Project Area is currently accessed via Sod House Road from SR 140. 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, *Montezuma Mines Inc. Plan of Operations South Sleeper Exploration Project* (Enviroscientists 2014), BLM casefile number NVN-092492.

1.1.5 Applicant

Start-up and development of the South Sleeper Exploration Plan as described under this EA is proposed by Montezuma Mines Inc. (MMI).

1.2 Overview

1.2.1 Site History

The Project Area has historically been used for livestock grazing, with no infrastructure currently existing on-site. A number of unimproved roads exist on-site as shown on Figures 2 and 3.

Recent mineral-related exploration activities have also occurred within the Project Area. MMI has conducted exploration activities under a series of Notices. MMI initially proposed to conduct approximately 4.25 acres of disturbance under BLM casefile number NVN-90383, which expired, but was replaced by a NVN-92758. This new notice covered the disturbances created and proposed under the expired notice.

There have been a number of Notice-level exploration projects near the project area, and the Sleeper Mine and Explorations Projects are adjacent to the proposed Plan boundary.

1.3 Purpose and Need for Action

The BLM's purpose for the Federal Action is to provide MMI the opportunity to conduct mineral exploration activities on public lands within the Project Area and to evaluate and characterize the mineral potential as provided under the General Mining Law of 1872 as amended.

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 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 proposed 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

Internal and external scoping was conducted in order to determine possible issues or concerns related to this project. The BLM staff defined issues and made an initial determination of what may be needed to be analyzed in this EA (see Chapter 3, Description of the Affected Environment), data needs, possible alternatives, and public outreach needs.

This internal scoping was followed by external scoping where other agencies, organizations, tribes, local governments, and the public were provided the opportunity to provide feedback regarding issues, concerns, data needs, and such things as potential alternatives. This public scoping assists the BLM in identifying any new issues, coordination needs, possible alternatives, and any other concerns that may exist.

A letter and map were sent to potentially interested members of the public on July 2, 2014. The scoping letter and map were also posted to the web. Comments were accepted for a 30 day period.

The BLM received comments from the Nevada Department of Wildlife (NDOW), Nevada State Land Use Planning Agency, and Nevada Division of Water Resources (NDWR). Through internal and external scoping, the following issues were identified with regard to the Proposed Action:

- What potential effects on air quality (i.e., dust and vehicle emissions) could occur as a result of the Proposed Action?
- How could existing cultural resources, including archaeological sites, be affected by implementation of the Proposed Action?
- How would lighting be managed to minimize light pollution, and would measures be taken to blend structures into the surroundings?
- How could the Proposed Action affect soils?
- How would the Proposed Action affect water quality and quantity, as well as water availability for wildlife and livestock?
- How may migratory birds be affected by implementation of the Proposed Action?
- What potential effects could occur to traditional Native American religious concerns and lifestyles, including potential effects on surface water resources of importance?
- What potential impacts could occur to wildlife resources and special status species such as the Greater sage-grouse?
- Would the proposed facility be required to get a permitted public drinking water system?

In reviewing the following issues that are listed above, it was determined that detailed analysis would not be required for these topics given the rationale provided below:

- How would lighting be managed to minimize light pollution, and would measures be taken to blend structures into the surroundings?

Operations are planned to be conducted during daylight hours, with the exception of core drilling operations which would be conducted 24 hours per day. Impacts would be minimal from the two light plants proposed for use during core drilling operations. Furthermore, the environmental protection measures incorporated into the Proposed Action such as using directional lighting and shielding lights would minimize light pollution. There are no structures proposed to be built for this project.

- How would the Proposed Action affect existing soil conditions?

  The proposed exploration project would keep surface disturbance to a minimum by only clearing vegetation and soil when necessary. Growth medium would be stockpiled and maintained for use during reclamation.

- How would the Proposed Action affect water quality and quantity, as well as water availability for wildlife and livestock?

  Due to the limited water consumption in association with the extraction/monitoring wells proposed, the proposed project is not anticipated to have any effect on water quality or quantity, and would not impact any water sources for wildlife or livestock. Water for the drilling activities would be obtained from the Sleeper Mine or from Winnemucca, not from the Project Area.

- What potential effects could occur to traditional Native American religious concerns and lifestyles, including potential effects on surface water resources of importance?

  No concerns were raised during Tribal consultation on the project (See Chapter 6.1). There are no surface water resources in the Project Area.

- What potential impacts could occur to wildlife resources and special status species such as the Greater sage-grouse?

  Wildlife and special status species are discussed in chapters 3.9 and 3.11 of this document. There is no potential Greater sage-grouse habitat in the Project Area, or any leks within four miles of the Project area. The nearest lek is over five and a half miles away from the Project Area. The status of the lek, according to NDOW, is historic, and is on the other side of the Slumbering Hills (east flank).

- Would the proposed facility be required to get a permitted public drinking water system?

  The Proposed Action is an exploration project and no facilities are proposed for construction. A public drinking water system is not required for this project.

2.0 Proposed Action and Alternatives

2.1 Description of the Proposed Action

2.1.1 Proposed Action Summary

MMI is proposing to expand their Notice-level (NVN-092758) exploration to a total of 100 acres of disturbance within the 3,459-acre Project Area boundary. They currently are acknowledged to disturb 4.25 acres under their Notice, and propose to conduct 44.94 acres of disturbance under phase I, and up to 50.81 acres under subsequent phases. The exact locations of each type of proposed disturbance in the Plan may change; however all cultural or sensitive resources would be avoided. Any changes to proposed drill locations or access roads would be reviewed by a BLM Archeologist before construction.

The Proposed Action consists of the following exploration related activities:

- Construction of drill sites;
- Construction of roads;
- Installation of geotechnical auger holes;
- Installation of geologic test pits/trenching;
- Installation of water extraction/monitoring wells; and
- Installation of a meteorological station.

Table 2-1: Disturbance within the Project Area (acres)

Component	Existing Disturbance (acres)	Proposed Phase I Disturbance (Acres)	Proposed Subsequent Phase Disturbance (Acres)	Proposed total Disturbance (Acres)
Drill sites with sumps	0.85	25.23	24.86	50.94
Roads	3.40	19.71	21.20	44.31
Geotechnical auger holes			1.00	1.00
Geologic test pits/trenching			2.50	2.50
Water extraction/monitoring wells			1.00	1.00
Meteorological station			0.25	0.25
TOTAL ACRES	4.25	44.94	50.81	100

2.1.2 Operation Time Frame

The life expectancy of the project would be a total of 20 years. This includes approximately 10 years of exploration, with up to 10 years of closure, reclamation, and monitoring periods.

2.1.3 Work Force

The estimated number of people employed during the exploration activities would be up to seven including one MMI geologist and three drill operators on up to two contracted drills. MMI anticipates that most employees and contractors would reside in Winnemucca. The number of employees on-site during exploration activities would vary, depending on the number of drills operating at any one time.

2.1.4 Drill Sites with Sumps

Drill sites with sumps would measure approximately 35 feet wide by 80 feet long. Sumps would be constructed within the footprint of the drill sites to contain drill cuttings (bits of broken rock) and manage drilling fluids (water or water mixed with non-hazardous drilling additives). Each sump would be constructed approximately 10 feet wide by 20 feet long by 6.75 feet deep. Up to two sumps may be constructed on each drill site. Given the relatively flat topography of the project area, construction of the drill sites should consist primarily of leveling and smoothing of the land surface.

Daily water requirements would depend on the type of drill and the number of drills active at any time. A Reverse Circulation (RC) drill requires approximately 3,000 gallons per 12 hour shift, while a core drill uses approximately 5,000 gallons of water per 12 hour shift. The Project could potentially have as many as one RC and one core rig. RC rigs work only one shift per day, whereas the core rig runs two shifts; therefore, the daily drill water requirement could be as much as 13,000 gallons per day. In addition, depending on conditions, water may be required to control dust on the roads. This could be as much as 50,000 gallons per day depending on the location of the drills. MMI is currently obtaining water from the town of Winnemucca and/or Paramount Gold & Silver at the Sleeper Mine site. MMI would continue to obtain water from these sources for the proposed project.

Drill fluids would be managed with the use of sumps at each drill site. Best management practices (BMPs) for sediment control would be utilized during construction, operation, and reclamation to minimize sedimentation from disturbed areas. Proposed construction and drilling activities would avoid springs and seeps, if present. In order to facilitate drainage and prevent erosion, all bladed roads would have water bars and/or rolling dips constructed, as needed, at BLM-recommended spacing.

Sediment control structures may include, but not be limited to, fabric or certified weed-free straw bale filter fences, siltation or filter berms, mud pits, and downgradient drainage channels in order to prevent unnecessary or undue degradation to the environment. Sediment traps, constructed as necessary, within the drill pad disturbance, would be used to contain drill cuttings.

2.1.5 Roads

Exploration roads that require earth-moving would be located and constructed using standard construction practices for temporary mineral exploration roads to minimize surface disturbance, erosion, and visual contrast, as well as to facilitate reclamation. MMI proposes to construct approximately 58,000 feet of exploration roads under Phase I. The standard running width would be approximately 14 feet. Given the relatively level profile of the project area, construction of roads should consist primarily of leveling and smoothing of the land surface.

If necessary, balanced cut and fill construction practices would be used to the extent possible to minimize exposed cut slopes. Road construction is not anticipated to result in quantities of growth media removal and therefore, displaced material would be pushed to the side of bladed running surfaces and stockpiled as the fill slope. The downslope side of the cut and fill would be at the angle of repose.

Road construction within drainages would be avoided where possible. When drainages must be crossed by a road, guidelines established by BLM, the Nevada Division of Environmental Protection (NDEP) and Nevada Division of Conservation Districts through the State Environmental Commission (1994) would be followed to minimize surface disturbance and erosion potential. Rocky outcrops and areas of shallow soils on bedrock would be avoided. Routine road maintenance could be required and would consist of smoothing ruts, grading and re-establishing waterbars and/or rolling dips when necessary. Road construction would be completed with a Cat D7 dozer, or equivalent equipment.

2.1.6 Geotechnical Auger Holes

During subsequent phases, geotechnical auger holes may be drilled. Auger holes would be installed on existing drill sites with no additional disturbances anticipated.

2.1.7 Geological Test Pits/Trenching

During subsequent phases, geotechnical test pits or trenches may be installed to study near surface geology or soils. Geological mapping, geotechnical sampling and collection of bulk samples may occur at the test pits/trenches.

2.1.8 Water Extraction/Monitoring Wells

During subsequent phases, groundwater monitoring wells may be installed to monitor water levels and water quality. Water extraction/monitor wells would be installed on existing drill sites when possible with no additional disturbances anticipated.

2.1.9 Meteorological Station

During subsequent phases, a meteorological station may be installed to collect baseline weather variables. The eventual need for a meteorological station would be based on whether the exploration project would evolve into a production project.

2.1.10 Exploration Equipment

Generally, seven personnel would be on site during Project activities, including one MMI geologist and three contract drill operators per drill rig. Exploration drilling equipment could include a track- or truck-mounted RC drill rig and/or a core rig (during Phase I, two drill rigs may be on site at any time), four-wheel drive pickup trucks, backhoe, and a combination water truck/pipe truck for drill support. Under subsequent phases, baseline collection equipment would include small auger drills for geotechnical auger holes and a backhoe and/or an excavator for geological test pits/trenches.

All portable equipment, including drill rigs, support vehicles, and drilling supplies, would be removed from the Project Area during extended periods of non-operation. All heavy equipment (e.g., drills, water truck, dozers, and excavators) would be washed and inspected before entering BLM-administered lands. Inspection and cleaning would concentrate on the undercarriage, with special emphasis on axles, frame, cross-members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Table 2-2 lists the general equipment types that may be used for the Proposed Action.

Table 2-2: Equipment

Equipment List[1]	Number Needed for Proposed Project
4x4 Pickup Truck	2
Service Truck	2
Water/pipe Truck	2
Backhoe	1
Dozer	1
Excavator	1
Truck mounted drill	2
Core Drill Rigs (HQ)	2
Light Plants	2

[1] Quantity and type of equipment determined by contractor.

2.1.11 Hazardous Materials, Equipment Fueling and Maintenance Activities

Hazardous materials utilized at the Project Area would include diesel fuel, oil, gasoline, and other vehicular fluids. Approximately 500 gallons of diesel fuel would be stored in fuel delivery systems on vehicles and drill rigs. Approximately 100 gallons of gasoline would be stored in fuel delivery systems for light vehicles. Approximately 100 pounds of lubricating grease would be stored on the drill rigs or transported by drill trucks. All containers of hazardous substances

would be labeled and handled in accordance with Nevada Department of Transportation (NDOT) and Mine Safety and Health Administration (MSHA). In the event that a reportable quantity of hazardous or regulated materials, such as diesel fuel, is spilled, measures would be taken to control the spill, and the NDEP, the BLM, and the Emergency Response Hotline would be notified, as required. If any oil, hazardous material, or chemicals are spilled during operations, they would be cleaned up in a timely manner, according to Appendix D – Spill Contingency Plan of MMI's Plan of Operations. After clean up, the oil, toxic fluids, or chemicals, and any contaminated material would be removed from the site and disposed of at an approved disposal facility.

Fuel would be delivered to the site via contractor's service trucks. The service trucks would be used to directly fuel on-site equipment. Drivers off-loading fuel would be certified and trained. MMI would not store petroleum and equipment maintenance products on-site. Typical equipment maintenance products used in small quantities by the contract mining company include automatic transmission fluid, engine oil, hydraulic fluid, gear oil, and antifreeze. Typical quantities of engine, hydraulic, and transmission fluids on the service truck should not exceed 150 gallons. Quantities stored on the contract service vehicle may vary slightly depending on the contractor. A service truck would typically hold approximately 1,000 gallons of fuel. Smaller quantities of petroleum and equipment maintenance products (e.g. antifreeze) would be kept in proper containment and located on the contractor's service vehicle.

Non-hazardous solid wastes, used lubricants, solvents, oil, or coolant would be hauled off-site by the contractor, on a regular basis, and either recycled or disposed of per local, state, and federal regulations. Portable toilets would be located on-site and would be serviced regularly by a contractor. Portable toilets would be removed from the site when not in use.

2.1.12 Schedule and hours of Operation

Once MMI has received the required authorizations and permits, exploration operations would begin at the site. Most activities would take place during day light hours. However, a core drill would be active 24-hours a day, running in two 12-hour shifts.

2.1.13 Transportation

Employees would most likely commute to the site from Winnemucca using U.S. Highway 95 to SR 140 and Sod House Road. Operators on a drill crew would travel together and a MMI geologist would travel in a separate vehicle. Parking for vehicles (employee, contractor and visitor) would be on a drill pad or immediately adjacent to the area where work is being performed.

Drilling supplies would be transported with the drilling crews to the site. Service vehicles and possibly additional supplies may access the site using the same route as the crew.

2.1.14 Occupancy

Pursuant to 43 CFR 3715.2, MMI would be engaged in reasonably incident activities and substantially regular work. Site activities would be on-the-ground and observable, utilizing appropriate and operable equipment. Equipment storage and public safety, in accordance with 43 CFR 3715.2-1, are discussed under the Safety and Fire Protection sub-sections of this chapter.

Surface occupancy activities under this Plan, including those activities covered under 43 CFR 3710 Subpart 3715.0-5, may include the following:

- The development of ground water monitoring wells, which would each have surface features including casing, well head cover, and protection posts as needed;
- The development of ground water piezometers, which would each have surface features including casing; electrical connections; and protection posts as needed;
- The development of ground water production wells, which would each have surface features including casing; well head covers; electrical connections; and protection posts as needed.

The development of a monitoring well system and exploration for potential water supplies would be implemented under subsequent phases of the Project.

2.1.15 Lighting

MMI proposes to conduct most activities during day time hours; however, it is possible that some night time activities would occur, such as during core drilling that requires two shifts. MMI and their contractors may use mobile, diesel-powered light plants at night to allow exploration operations to be performed safely and efficiently and to comply with MSHA illumination requirements. Areas where active exploration is taking place would be lit using light plants. Light plants would be temporary and mobile; up to two light plants may be used at a given time. Light plants would either be removed when not in use or stored with their mast down to reduce perching potential from birds.

2.1.16 Safety and Fire Protection

MMI and their contractors would operate in conformance with all MSHA safety regulations (30 CFR Parts 46, 47, 48, 56, 58, and 62).

The following requirements would be used to prevent fires:

- Employees would be trained in the use of hand-held fire extinguishers;
- Personnel would be allowed to smoke only in designated areas and would be required to follow applicable BLM guidelines regarding smoking;
- All vehicles would carry at a minimum a shovel and five gallons of water (preferably in a backpack pump), in addition to a conventional fire extinguisher;

- Adequate firefighting equipment (a shovel, a pulaski, standard fire extinguisher(s), and an ample water supply) would be kept readily available at each active drill site;
- Vehicle catalytic converters would be inspected often and cleaned of all flammable debris;
- All cutting/welding torch use, electric-arc welding, and grinding operations would be conducted in an area free, or mostly free, from vegetation. An ample water supply and shovel would be on hand to extinguish any fires created from sparks. At least one person in addition to the cutter/welder/grinder would be at the work site to promptly detect fires created by sparks;
- MMI would keep informed of any fire restrictions or closures issued by the BLM Winnemucca District Office. Notices would be publicized in the local media, and posted at various sites throughout the district. The BLM does not individually contact operators.
- Any wildland fire observed would be reported immediately to the BLM Central Nevada Interagency Dispatch Center at (775) 623-3444.

Project vehicles would adhere to speed limits to avoid wildlife and livestock collisions as well as to maintain highway safety.

2.1.17 Environmental Protection Measures

MMI has committed to the following environmental protection measures in their Plan of Operations:

Water Quality

All drill holes would be plugged in accordance with NRS 534, NAC 534.4369, and NAC 534.4371 with the exception of drill holes pre-collared with reverse circulation drill rig and completed with a core rig, which would be plugged prior to the core rig moving from the drill site. If any drill hole produces artesian flow, the drill hole would be contained pursuant to NRS 534.060 and NAC 534.378 and would be sealed by the method described in Subsection 2 of NAC 534.4371.

- Storm water BMPs would be used at construction sites to minimize storm water erosion.
- Drill cuttings would be contained on site and fluids managed utilizing appropriate control measures such as sumps and would be reclaimed by the end of the drill program.
- MMI would follow the Spill Prevention Plan included in the Plan of Operations.
- Only nontoxic fluids would be used in the drilling process.

Cultural and Paleontological Resources

- Pursuant to 43 CFR 10.4(g), MMI would notify the BLM authorized officer, by telephone, and with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2). Further pursuant to 43 CFR 10.4 (c) and (d) and 3809.420(b)(8)(iii), the operator would immediately stop all activities in the vicinity of the discovery, make a reasonable effort to protect the discovered objects, and not commence again until notified to proceed by the BLM authorized officer.
- MMI would avoid all National Register of Historic Places (NRHP) eligible sites and/or contributing elements of eligible cultural sites by a buffer zone of 30 meters (approximately 98 feet). Prior to MMI initiating activities under each phase, the BLM would review the work plan for each phase to ensure the protection of all NRHP-eligible sites and/or contributing elements of eligible sites. If deemed necessary by the BLM, MMI would place a qualified archaeologist on site during surface disturbing activities near known cultural resources to inspect the area prior to disturbance to ensure eligible cultural sites are avoided.
- MMI would inform all field personnel of the Archaeological Resources Protection Act of 1979 and the Native American Graves Protection and Repatriation Act (P.L. 101-601) NAGPRA) responsibilities and their associated penalties.
- Any cultural resource discovered by MMI, 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. The permit holder 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 are necessary to allow activities to proceed. The holder is responsible for the cost of evaluation and mitigation. Operations may resume only upon written authorization to proceed from the authorized officer.
- Pursuant to 43 CFR 3809.420(b)(8)(ii), MMI would notify the BLM authorized officer, by telephone, and with written confirmation, immediately upon the discovery of paleontological resources that are discovered as the result of surface disturbing activities, the item(s) or condition(s) would be left intact and immediately brought to the attention of the BLM. Further pursuant to 43 CFR 10.4 (c) and (d), the operator would immediately stop all activities in the vicinity of the discovery and not commence again for 30 days of when notified to proceed by the BLM authorized officer. If significant paleontological resources are found, avoidance, recordation, and data recovery would be required.

Migratory Birds

- In order to avoid potential impacts to breeding migratory birds, (including western burrowing owls), a nest survey would be conducted by a qualified biologist within potential breeding habitat prior to any surface disturbance associated with exploration activities during the avian breeding season (March 1 through August 31). Pre-disturbance surveys would be required to be conducted no more than ten days and no less than three days prior to initiation of disturbance. If the disturbance for the specific location does not occur within ten days of the survey, another survey would be conducted. If active nests are located, or if other evidence of nesting (i.e., mated pairs, territorial defense, carrying nest material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) would be delineated after consultation with the BLM biologist and the buffer area avoided to prevent destruction or disturbance to nests or birds until they are no longer actively breeding or rearing young, or until the young have fledged. The site characteristics to be used to determine the size of the buffer area are as follows: a) topographic screening; b) distance from disturbance to nest; c) the size and quality of foraging habitat surrounding the nest; d) sensitivity of the species to nest disturbances; and e) the protection status of the species.

Wildlife

- All trenches, sumps, and other small excavations that pose a hazard or nuisance to the public, wildlife, or livestock would be adequately fenced to preclude access or constructed with a sloped end for easy egress. Temporary fencing would be inspected and maintained as necessary.

Public Safety and Access

- Public safety would be maintained throughout the life of the Project. All equipment and other facilities would be maintained in a safe and orderly manner.
- Drill sites, sumps, and excavations would be reclaimed as soon as practicable after completion of sampling and logging.
- Any survey monuments, witness corners, or reference monuments would be protected and avoided, if possible.
- Pursuant to 43 CFR 8365.1-1(b)(3) and 43 CFR 3809.420(b)(5) and (6), no sewage, petroleum products, or refuse would be dumped on public lands.
- All regulated wastes would be removed from the Project Area and disposed of in a state, federal, or local designated area.

- All applicable state and federal fire laws and regulations would be complied with and all reasonable measures would be taken to prevent and suppress fires in the Project Area.
- Final reclamation of constructed roads, sumps, and drill sites would consist of, if required, fully recontouring disturbed areas to their original grade, and reseeding in the fall season immediately following completion of exploration activities.
- Final reclamation of overland travel routes would include ripping compacted ground and reseeding in the fall or optimal revegetation potential.
- In the event that any existing roads are severely damaged as a result of MMI activities, MMI would return the roads to their original condition.

Vegetation

- Reseeding would be consistent with all BLM recommendations for seed mix constituents, application rate, and seeding methods.

Air Quality

- Emissions of fugitive dust from disturbed surfaces would be minimized by the application of water from a water truck as a method of dust control. A Surface Area Disturbance (SAD) Permit would be required because the proposed surface disturbance exceeds five acres. A Dust Control Plan would be included in the SAD Permit because the proposed surface disturbance exceeds 20 acres.

2.2 Site Reclamation

Major land uses occurring in the Project Area include continued mineral exploration, livestock grazing, wildlife habitat, and dispersed recreation. The reclamation plan for the project area is designed to reestablish current land uses by employing reclamation techniques including:

- Reclamation concurrent with mining activities when practical and safe; and
- Application of seed mixtures.

Reclamation of disturbed areas resulting from the Proposed Action would be completed in accordance with the BLM and NDEP regulations including *Guidelines for Successful Revegetaton for the Nevada Division of Environmental Protection* (NDEP 1998).

MMI would provide the BLM and NDEP Bureau of Mining Regulation and Reclamation with annual documentation of surface disturbance locations for exploration activities and any completed concurrent reclamation as required by Nevada Revised Statutes (NRS) 519A and Nevada Administrative Code (NAC) 519A.235 on or before April 15th of the following year.

As determined by the BLM, roads on public lands suitable for public access or which continue to provide public access may not be reclaimed at closure pending BLM guidance.

Concurrent reclamation would be carried out at the same time as continuing activities in other areas to the extent practicable and safe. This reclamation would be implemented in areas that would not be re-disturbed and are no longer needed for additional exploration. Concurrent reclamation is anticipated to begin as soon as Project activities allow. Concurrent reclamation procedures are similar to final reclamation procedures.

Roads and exploration areas to be reclaimed would be ripped to reduce compaction. Roads with cut or fill (if established) would be graded to blend into the surrounding topography and to generally reestablish the existing drainage patterns. This would be accomplished by a dozer on slopes flatter than 2.5H:1V, or excavators on slopes steeper than 2.5H:1V. Erosion control features would be implemented as appropriate. Reclaimed roads that could experience continued unauthorized use after reclamation would be blocked with earth or rock berms to eliminate vehicle access.

Table 2-3: Reclamation Seed Mix

Species		Application Rate (lbs PLS[1]/acre)
Common Name	**Scientific Name**	
Fourwing saltbush	*Atriplex canescens*	3
Shadscale saltbrush	*Atriplex confertifolia*	3
Forage Kochia	*Bassia prostrata*	0.5
Crested wheatgrass	*Agropyron cristatum*	2.5
Indian ricegrass	*Oryzopsis hymenoides*	1
	Total	**10**

[1] Pure live seed.

2.2.1 Reclamation Schedule

The estimated schedule of Project-related disturbance and reclamation is shown on Table 4. Reclamation activities would be timed to take advantage of optimal climatic conditions. Final establishment of grades, drainage, and sediment controls would occur over the late spring and summer months. Seedbed preparation would occur in late summer or early fall immediately prior to seeding. Seeding would occur between the BLM-recommended dates of October 1 and March 15 of each year. If seeding is not completed prior to the onset of winter, surface erosion

protection would be provided as needed and early spring seeding would occur at the earliest possible time.

The post-exploration and post-reclamation topography would be essentially the same as the pre-exploration topography because only limited amounts of linear surface disturbance are planned.

Exploration activities are expected to occur over approximately ten years, followed by up to ten years of reclamation and monitoring. The actual exploration activities for subsequent phases are unknown as they are dependent on results from each previous phase. Reclamation work would be conducted concurrently as practicable and feasible for the Project. MMI would conduct concurrent reclamation of disturbed areas once it is determined that the disturbance is no longer required for Project activities. Revegetation monitoring, would be completed no later than two years after the completion of activities under this Project; however, revegetation may take longer and would not be released until revegetation success has been achieved.

Table 2-4 outlines the anticipated reclamation schedule, which would be followed to achieve the reclamation goals set forth above. Revegetation activities are limited by the time of year during which they could be effectively implemented. Site conditions and/or yearly climatic variations could require that this schedule be modified to achieve revegetation success. Additional reclamation activities include the abandonment of the water well and the removal of all equipment, supplies, and materials brought onto public land at the end of the Project life.

Table 2-4: Anticipated Exploration Reclamation Schedule

TECHNIQUES	**Quarter**				
	1st **Jan.-Mar.**	**2nd** **April-June**	**3rd** **July-Sept.**	**4th** **Oct.-Dec.**	**Year(s)**
Regrading					Within 2 years of Project completion
Seeding					Within 2 years of Project completion
Monitoring					3 years beyond regrading and reseeding

The estimated time to complete reclamation assumes average precipitation occurs during the years following reseeding. Periods of drought could delay revegetation, while excessive precipitation could increase the potential for erosion. With the exception of monitoring, reclamation activities are expected to be completed within one year or less.

2.3 Required Permits

Anticipated permits and authorizations for the Project are presented in Table 2-5.

Table 2-5: Major Permits and Authorizations Required

Permit/Approval	Regulating Agency	Permit Purpose
Federal Permits Approvals, and Authorizations		
Plan of Operations	Bureau of Land Management	Details project and operations to prevent unnecessary or undue degradation on public land (43 CFR 3809). Approval requires financial assurance.
Pesticide Use Permit	Bureau of Land Management	Authorization to treat noxious weeds on public BLM lands.
Notification of Commencement of Operations	Mine Safety and Health Administration	Mine safety issues, training plan, mine registration
State Permits		
Air Quality Operating Permit and Surface Area Disturbance	NDEP/Bureau of Air Pollution Control	Regulates Project sources of air emissions and surface disturbance
Reclamation Permit	NDEP/Bureau of Mining Regulation and Reclamation	Reclamation of surface disturbance due to mining includes financial assurance requirements.
Industrial Stormwater Discharge Permit (non-metals)	NDEP/Bureau of Water Pollution Control	Management of site stormwater
Permit to Appropriate Water	NV Division of Water Resources	Water appropriation, change in manner of use, change in point of diversion

2.4 No Action Alternative

Under the No Action Alternative activities covering the MMI exploration activities acknowledged under the MMI Notice (BLM casefile number NVN-085255) would continue to occur. These activities include up to five acres of exploration drilling, road building, cross county travel, and applicable reclamation. Up to two drill rigs could be used at a time, with associated support equipment and vehicles.

2.4.1 Alternatives Considered But Not Analyzed in Detail

During an October 7, 2014, meeting between BLM and MMI, potential alternatives to the proposed action were discussed. There are no unresolved conflicts concerning resource values that need to be addressed through an alternative.

2.5 Land Use Conformance Statement

The Proposed Action is in conformance with the Winnemucca District Planning Area Resource Management Plan and Record of Decision (May 21, 2015), as amended by the Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region Including the Greater-Sage Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (September 21, 2015).This Proposed Action is specifically provided for in the following Goal and Objectives for Mineral Resources: Leasable, Locatable, and Saleable:

> Goal: Make federal mineral resources available to meet domestic needs. Encourage responsible development of economically sound and stable domestic minerals and energy production, while assuring appropriate return to the public. Ensure long-term health and diversity of the public lands by minimizing impacts on other resources, returning lands disturbed to productive uses, and preventing unnecessary or undue degradation.
>
> Objective MR 1: Return lands disturbed by mineral operations that are stable, safe, productive, and visually compatible and ensure quality of the environment in accordance with FLPMA and other applicable laws, regulations, and policy. Prevent undue or unnecessary degradation of public lands. An exception, in whole or in part, may be granted if, at the time of closure, a viable plan exists for a productive continued economic use of the site (see Sustainable Development Goals and Objectives).
>
> Objective MR 8: Allow appropriate occupancy (meeting the requirements of 43 CFR 3715 or other applicable regulations) on mineral development sites, while protecting resources and maintaining public access.
>
> Objective MR 9: Manage locatable mineral operations to provide for the mineral needs of the nation, while assuring compatibility with and protection of other resources and uses.

2.6 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 National Environmental Policy Act;
- The Council on Environmental Quality's *Considering Cumulative Effects under NEPA* (1997);
- 43 CFR Part 46, Implementation of the National Environmental Policy Act (NEPA of 1969); Final Rule, effective November 14, 2008;

- BLM NEPA Handbook (H-1790 1), as updated (BLM 2008);
- 43 CFR §3809: Surface Management; and
- Humboldt County Regional Master Plan (Humboldt County 2013).

3.0 The Affected Environment

Introduction

Sod House Road is the main access road into the Project Area and is maintained by Sleeper Mine from SR140 to the mine. The area is currently used for livestock grazing, wildlife habitat, and mineral exploration. Recreational uses of the public land in the vicinity of the Project Area consist of dispersed activities such as hunting, biking, primitive camping, rock hounding, and off-road vehicle travel. One wildland fire occurred in the Project Area in 1999, and burned the eastern half of the Project Area. The Project Area is crosscut by a number of pre-existing roads as shown on Figure 2.

The mean annual precipitation at the Winnemucca Airport, located approximately 30 miles southeast of the Project, is 8.3 inches, and the mean annual snowfall is 16.5 inches. Most precipitation in central Nevada is from frontal storms mainly from the north and west during the winter months and convectional storms during the summer months. Frontal storms are generally low intensity, short duration events covering large areas. Convective storms are generally high-intensity thunderstorms, and are brief and have limited aerial extent.

The Desert Valley (Basin #31), is a designated ground water basin. Designated ground water basins are basins where permitted ground water rights approach or exceed the estimated average annual recharge and the water resources are being depleted or require additional administration. The Desert Valley Hydrographic Basin is designated for the entire basin, and the annual yield is estimated to be 9,000 acre-feet per year (acft/yr). Under such conditions, a state's water officials would so designate a ground water basin and, in the interest of public welfare, declare preferred uses (e.g., municipal and industrial, domestic, agriculture, etc.). For Nevada, the Nevada State Engineer, Division of Water Resources (NDWR), is authorized by NRS 534.120 and directed to designate a ground water basin and declare preferred uses within such designated basin.

Current uses for the Desert Valley Hydrographic Basin are limited to commercial, construction, industrial, irrigation, mining and milling, recreation, and stock water applications for environmental permits filed pursuant to NRS 533.437. The State Engineer has additional authority in the administration of the water resources within a designated ground water basin (NDWR 2008). Since the project does not propose to use water requiring any additional rights or allocations within this basin, there would be no impacts to water quantity (as indicated in table 3-1 below).

The geology of the project area is located within the Basin and Range Physiographic province. The area includes three main geologic units (listed from oldest to youngest):

- Volcanic bedrock, which underlies the alluvium throughout most of the area of Desert Valley.
- Older alluvium, representing basin-fill sediments derived from the Jackson Mountains and the Slumbering Hills; and
- Younger alluvium, representing sediments associated with the Pleistocene Lake Lahontan (Telesto Solutions, Inc., 2003)

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. Table 3-1 - Supplemental Authority Elements Considered for Analysis outlines the elements that must be considered in all environmental analyses. Table 3-2 – Additional Resources Considered for Analysis presents additional important 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. ACECs are nominated during the resource management planning process per 43 CFR 1610.7-2.
Cultural Resources		✓		See chapters 3.2 and 4.1.2.
Environmental Justice	✓			Environmental Justice concerns were not identified in relation to the Project. Therefore, this element is not addressed further in this EA. The closest minority community is the Fort McDermitt Paiute and Shoshone Indian Reservation. The tribe's concerns are addressed in the Native American Religious Concerns in Chapter 3.5.
Farm Lands (Prime or Unique)	✓			Resource is not present.
Floodplains	✓			Resource is not present.
Invasive, Non-Native Species			✓	See chapters 3.3 and 4.1.3.
Migratory Birds			✓	See chapters 3.4, 4.1.4, and 4.2.3.2.

Supplemental Authority Element	Not Present	Present/Not Affected	Present/May Be Affected	Rationale
Native American Religious Concerns		✓		See chapters 3.5 and 6.1.
Threatened, Endangered Species -	✓			See chapter 3.6.
Wastes, Hazardous and Solid		✓		This resource has been determined as present and unaffected by resource specialist.
Water Quality (Surface/Ground)		✓		This resource has been determined as present and unaffected by resource specialist.
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		✓		This resource has been determined as present and unaffected by resource specialist.
Lands With Wilderness Characteristics	✓			The Project Area and its surroundings do not have the characteristics needed to be considered Lands with Wilderness Characteristics.
Paleontological Resources		✓		See chapter 3.7.
Rangeland Management		✓		The proposed Project Area is less than one (1.0%) percent of the total allotment acreage of both allotments. Because the Project Area is a small percentage of the total area of both allotments there is no need to reduce AUMs. This resource has been determined as present and unaffected by resource specialist.

Other Resources	Not Present	Present/Not Affected	Present/May Be Affected	Rationale
Recreation		✓		This resource has been determined as present and unaffected by resource specialist.
Lands and Realty		✓		This resource has been determined as present and unaffected by resource specialist.
Noise		✓		This resource has been determined as present and unaffected by resource specialist.
Soils			✓	See chapters 3.8 and 4.1.5.
Special Status Species			✓	See chapters 3.9, 4.1.6 and 4.2.3.3.
Vegetation			✓	See chapters 3.10 and 4.1.7.
Visual Resources		✓		This resource has been determined as present and unaffected by resource specialist.
Water Quantity		✓		
Wild Horses and Burros	✓			There are no wild horses, wild burros, or Herd Management Areas for either animal within the Project Area.
Wildlife			✓	See chapters 3.11, 4.1.8, and 4.2.3.3.

Supplemental Authorities

3.1 Air Quality

3.1.1 Regulatory Framework

The U.S. Environmental Protection Agency (EPA) Office of Air Quality Planning and Standards and the NDEP have set National Ambient Air Quality Standards (NAAQS) and Nevada ambient air quality standards for the following criteria pollutants: nitrogen dioxide, sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter smaller than 10 microns in aerodynamic diameter (PM_{10}), particulate matter smaller than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), ozone, and lead. In addition to the above-listed criteria pollutants, NDEP has established an ambient air quality standard of 0.08 parts per million or 112 micrograms per cubic meter for hydrogen sulfide. The minimum ambient air quality standards for Nevada are provided in NAC 445B.22097, as are the national standards. Table 3-3 presents a summary of the criteria pollutants for Nevada. Attainment is achieved when the existing background concentrations for criteria air pollutants are less than the minimum allowable ambient concentrations defined in the NAAQS. The attainment status, with respect to the NAAQS, of the airshed in which the Proposed Action is located precludes the requirement for an air quality conformity analysis.

Table 3-3: Summary of Criteria Pollutants

Pollutant		Averaging Time	Level[1]
Carbon Monoxide (CO)		8-hour	9 ppm
		1-hour	35 ppm
Lead		Rolling 3 month average	0.15 μg/m^3
Nitrogen Dioxide (NO_2)		1-hour	100 ppb
		Annual	53 ppb
Ozone (O_3)		8-hour	0.075 ppm
Particle Pollution	$PM_{2.5}$	Annual	12 μg/m^3
		Annual	15 μg/m^3
		24-hour	35 μg/m^3
	PM_{10}	24-hour	150 μg/m^3
Sulfur Dioxide (SO_2)		1-hour	75 ppb
		3-hour	0.5 ppm
Hydrogen Sulfide (H_2S)		1-hour	0.08 ppm

Source: EPA 2013a

[1] Levels include: parts per million (ppm); micrograms per cubic meter (μg/m^3); and parts per billion (ppb).

Major sources are defined as sources that emit 100 tons per year of any criteria pollutant, 10 tons per year of any of the toxic air pollutants, or 25 tons per year of a mixture of air toxics. Hazardous air pollutants (HAPs) are defined by the Clean Air Act Amendments of 1990. These pollutants are known or suspected to cause serious health effects. The EPA and BAPC regulate 187 HAPs from specific sources under the National Emissions Standards for Air Pollutants (NESHAPs) program.

Greenhouse gases as defined by the EPA include carbon dioxide (CO_2), methane (CH_4), 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 in the Black Rock Desert Region (Hydrographic Basin 2), Desert Valley hydrographic area. Desert Valley hydrographic area includes 673,280 acres. In the state of Nevada, air sheds correspond to hydrographic areas; therefore, the Desert Valley is the analysis area for air quality. Figure 4 presents the boundaries of the air shed used in this analysis.

3.1.3 Existing Environment

The Project Area is located in a rural area with minimal industrial sources or potential contribution of emissions to the air shed from vehicle traffic. The Desert Valley area is in attainment for all NAAQS and Nevada air quality standards. In addition, the area is not a maintenance area for criteria pollutants.

The Project is located in the north-central portion of the Great Basin, situated in the Basin and Range physiographic province on the west slope of the Slumbering Hills, in Humboldt County, Nevada. Elevations in the Project Area range from approximately 4,137 feet to 4,533 feet above mean sea level (amsl) with an average elevation of approximately 4,335 feet amsl.

The terrain within the Project Area slopes upward toward the east as it approaches the Slumbering Hills. The climate and vegetation in the Project Area are typical of the desert environment of the northern Basin and Range Province. The climate is arid with wide fluctuations in seasonal temperatures. Temperatures in the winter are cool with periods of cold weather and an average snowfall of 22.6 inches per year. Summer conditions are typically hot and dry. Average precipitation is approximately 10.49 inches per year, with monthly average precipitation ranging between 0.27 inch in July and 1.29 inches in May. The average maximum and minimum annual temperatures are 64.7 and 33.3 degrees Fahrenheit, respectively (WRCC 2014).

3.2 Cultural Resources

3.2.1 Regulatory Framework

The NHPA 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. 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.

3.2.2 Assessment Area

The direct impacts cultural Area of Potential Effects (APE) for the undertaking is Project Area. The indirect impacts APE for the project are the Project Area plus the area one mile around the Project Area.

3.2.3 Existing Environment

The entire Project Area has been inventoried for cultural resources. The survey of the Project Area was documented in CrNV-02-3235, the inventory report for the project. There were several surveys within one mile of the Project Area that produced prehistoric and historic sites, none of which have been determined eligible for the National Register, but several remain unevaluated.

3.2.4 Survey Results

The survey of the South Sleeper APE resulted in the recording of 27 sites. Five of these sites, all prehistoric resources, CrNV-02-12458, CrNV-02-12462, CrNV-02-12467, CrNV-02-12476, and CrNV-02-12480 have been determined to be eligible for listing in the National Register of Historic Places. All other sites within the Project Area have been determined to be not eligible for the National Register.

3.3 Invasive, Non-Native Species

3.3.1 Regulatory Framework

An “invasive species” is defined as a species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112). Invasive, non-native species include plants designated as “noxious” by federal or state law. Within Nevada, noxious weeds are defined in the NRS 555.005 as “any species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate”. The Nevada Department of Agriculture’s Noxious Weed Web site provides a list of all noxious weeds listed for the State of Nevada as of 2014 (State of Nevada Department of Agriculture 2014).

3.3.2 Assessment Area

The assessment area for invasive, non-native species is the Project Area.

3.3.3 Existing Environment

A survey for noxious weeds was conducted in conjunction with a vegetation community assessment. The noxious weed survey focused on invasive, nonnative species managed under the

Nevada Revised Statutes Chapter 555, and included on the 2012 Nevada Noxious Weed List maintained by the Nevada Department of Agriculture. The survey was performed on July 14 through July 17, 2014, by Enviroscientists, Inc. (Enviroscientists 2014).

3.3.4 Survey Results

One noxious weed species listed on the 2012 Nevada Noxious Weed List was observed within the Project Area: perennial pepperweed (*Lepidium latifolium*). The perennial pepperweed was recorded as a single occurrence within and alongside a dirt road within the Project Area.

Other invasive and nonnative plant species observed within the Project Area but are not classified as noxious weeds in the State of Nevada include: cheatgrass (*Bromus tectorum*); clasping pepperweed (*Lepidium perfoliatum*); crossflower (*Chorispora tenella*); curveseed butterwort (*Ceratocephala testiculata*); prickly Russian thistle (*Salsola tragus*); redstem stork's bill (*Erodium cicutarium*); saltlover (*Halogeton glomeratus*); and tall tumble mustard (*Sisymbrium altissimum*). The following three invasive and nonnative plants were present throughout the Project Area: cheatgrass; clasping pepperweed; and saltlover. Crossflower, curveseed butterwort, prickly Russian thistle, redstem stork's bill, and tall tumble mustard were concentrated in the central and eastern portions of the Project Area.

3.4 Migratory Birds

3.4.1 Regulatory Framework

Migratory birds are protected and managed under the MBTA of 1918, as amended (16 United States Code §703 et. seq.), and Executive Order 13186. The MBTA prohibits the killing or taking of migratory birds without a permit and extends protection to nests of migratory birds if the nest contains nesting birds or their eggs. Executive Order 13186 directs federal agencies to promote the conservation of migratory bird populations. Additional direction comes from the BLM Instruction Memorandum (IM) 2008-050 (Migratory Bird Treaty Act – Interim Management Guidance), dated December 18, 2007 (BLM 2007).

3.4.2 Assessment Area

The assessment area for migratory birds includes the Project Area as shown on Figure 2.

3.4.3 Existing Environment

Vegetation within the assessment area is primarily comprised of Inter-Mountain Basins Greasewood Flat (1,343 acres), Inter-Mountain Basins Mixed Salt Desert Scrub (833 acres), Inter-Mountain Basins Playa (2 acres), Invasive Annual Grassland (783 acres), Invasive Annual and Biennial Forbland (491 acres), and Barren Lands (7 acres) plant communities and can support a variety of migratory birds. A representative, but not exclusive list of migratory birds which may utilize these habitats can be found in Table 3-4.

Table 3-4: Migratory Birds Which May Utilize Project Area

Common Name	Scientific Name
American Crow	*Corvus brachyyrhynchos*
Black-billed magpie	*Pica hudsonia*
Brewer's Blackbird	*Euphagus cyanocephalus*
Brown-headed cowbird	*Molothrus ater*
Common Nighthawk	*Chordeiles minor*
Common Poorwill	*Phalaenoptilus nuttallii*
Common Raven	*Corvus corax*
Horned Lark	*Eremophilia alpestris*
House finch	*Carpodacus mexicanus*
Killdeer	*Charadrius wilsonia*
Lark Sparrow	*Chondestes grammacus*
Mourning Dove	*Zenaida macroura*
Northern mockingbird	*Mimus polyglottos*
Prairie Falcon[1]	*Falco mexicanus*
Red-tailed hawk[1]	*Buteo jamaicensis*
Sage Sparrow	*Amphispiza belli*
Say's Phoebe	*Sayornis saya*
Turkey Vulture	*Cathartes aura*
Western Meadowlark	*Sturnella neglecta*

[1] Special status species, also addressed in Chapter 3.9.
Sources: Enviroscientists 2014

The Brewer's Sparrow, Sage Thrasher, Loggerhead Shrike, Golden Eagle, and Swainson's Hawk are BLM sensitive species. Additional discussion of these BLM sensitive species is provided below in Chapter 3.9. A separate discussion on raptors is also included in Chapter 3.9.

3.4.4 Survey Results

On July 23, 2014, a raptor survey was conducted within the Slumbering Hills located to the east of the Project Area by Enviroscientists' wildlife biologists. The objective of this raptor survey was to identify suitable raptor nesting habitat and raptor nests near the Project. Data recorded during the raptor survey are discussed further in Chapter 3.9.

Field surveys for migratory birds were conducted on July 14 through July 17, 2014, within the Project boundary shown on Figure 2 (Enviroscientists 2014). Migratory birds observed within the Project Area or the assessment area during field surveys included loggerhead shrike (*Lanius ludovicianus*), Sage thrasher (*Oreoscoptes montanus*), and Western burrowing owl (*Athene cunicularia hypugaea*).

The following migratory bird nests were observed during field surveys or were identified during agency consultation (Enviroscientists 2014):

- One Nevada BLM sensitive species, golden eagle, was observed within the Raptor Survey Area.
- Four occupied western burrowing owl burrows were recorded in the Inter-Mountain Basins Greasewood Flat vegetation community within the northwestern portion of the Project Area.

3.5 Native American Religious Concerns

3.5.1 Regulatory Framework

Numerous laws and regulations require the BLM to consider Native American Religious Concerns. These include the NHPA, the American Indian Religious Freedom Act of 1978, Executive Order 13007 (Indian Sacred Sites), Executive Order 13175 (Consultation and Coordination with Tribal Governments), the Native American Graves Protection and Repatriation Act, the ARPA, as well as NEPA and the FLPMA. Secretarial Order No. 3317, issued in December 2011, updates, expands and clarifies the Department of Interior's policy on consultation with Native American tribes. The BLM also utilizes H-8120-1(General Procedural Guidance for Native American Consultation) and National Register Bulletin 38 (Guidelines for Evaluating and Documenting Traditional Cultural Properties).

3.5.2 Assessment Area

The assessment area for Native American Religious Concerns is the Project Area, which is located in the traditional area of the Northern Paiute Sawawaktödö tuviwarai Band (also known as the Sawakudökwa tuviwarai or the Sagebrush Mountain Dwellers). Consultation with the Fort McDermitt Paiute and Shoshone Tribe and the Winnemucca Indian Colony is outlined in Section 3.5.3 and Section 6.1 of this document. No ceoncerns have been expressed to date on the project.

3.5.3 Existing Environment

The goal of consultation is for the BLM to identify specific traditional/cultural/spiritual sites, activities, and resources important to Native Americans, and limit, reduce, or possibly eliminate any negative impacts. Letters requesting consultation on the Proposed Action were sent to the Fort McDermitt Paiute and Shoshone Tribe and the Winnemucca Indian Colony on July 1, 2014. No responses have been received. Also see Section 6.1 of this document.

3.6 Threatened, Endangered Species

3.6.1 Regulatory Framework

In accordance with the Endangered Species Act (ESA), as amended, the BLM in coordination with the United States Fish and Wildlife Service (USFWS) must ensure that any action that they authorize, fund, or carry out would not adversely affect a federally listed threatened or endangered species. In addition, as stated in Special Status Species Management Policy 6840 (6840 Policy) (Rel. 6-125), it also is the BLM's policy "to conserve and/or recover ESA-listed species and the ecosystems on which they depend, so that ESA provisions are no longer needed for these species, and to initiate proactive conservation measures that reduce or eliminate threats to BLM sensitive species to minimize the likelihood of and need for listing of these species under the ESA."

The following laws, regulations, guidelines, and/or procedures are applicable to management of the common wildlife resources potentially affected by the Project. The BLM RMP provides management standards for wildlife habitat and wildlife. BLM field offices monitor habitat condition, and NDOW monitors wildlife populations. The BLM manages public land to supply forage, cover, and water for all wildlife species. Trend studies (BLM Manual Supplement-NSO-6630) allow the BLM to adjust and manage habitat toward a desired condition for multiple uses, including for wildlife.

NRS 501.181 directs NDOW and the Wildlife Commission in the protection, propagation, restoration, transplanting, introduction, and management of wildlife in the state.

NAC 504.520 requires NDOW's approval for any activity that may obstruct, damage, diminish, destroy, change, modify or vary the natural shape and form of a stream system or its banks by any type of construction or other activity that is detrimental to the wildlife habitat. Such activity includes channelization, thermal pollution, and diversion.

3.6.2 Assessment Area

The assessment area for threatened or endangered species includes the Project Area plus a 4-mile radius as shown on Figure 5 labeled as the "Wildlife Assessment Area". This area was included to take into account potential raptor habitat in the proximal Slumbering Hills.

3.6.3 Existing Environment

A species list of threatened, endangered, and candidate species was requested from the United States Fish and Wildlife Service (USFWS) for the proposed project area, per their online version (1-15-2015; http://ecos.fws.gov/ipac/). Candidate species are plants and animals for which the U.S. Fish and Wildlife Service (USFWS) has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority

listing activities. The USFWS responded on January 15, 2015 with an electronic version of an official species list. Table 3-5 shows a list of proposed and candidate species which may occur within the Project Area:

Table 3-5: USFWS list of Threatened, Endangered, or Candidate species (that may occur in the project area)

Common Name	Scientific Name	Status
Lahontan cutthroat trout	*Oncorhynchus clarkii henshawi*	Threatened
Whitebark pine	*Pinus albicaulis*	Candidate
Columbia spotted frog	*Rana luteivertris*	Candidate

Although Lahontan cutthroat trout, whitebark pine, and Columbia spotted frog were suggested by USFWS as potentially present in the project area, these species have never been found or documented within the project area. The habitat for these species is not present in the project area. Therefore, the three species have been dismissed from further analysis as they do not likely occur in the project area.

Additional Affected Resources

3.7 Paleontological Resources

A detailed study was conducted using Information Memorandum (IM) No. 2008-009 and IM No. 2009-011. Together, these two IMs, with the Potential Fossil Yield Classification (PFYC) system, provide guidance for the assessment of potential impacts to paleontological resources, field survey and monitoring procedures, and recommended mitigation measures that protect paleontological resources impacted by federal actions. The Project Area contains a number of geologic formations that range from very low (PFYC 1) to moderate (PFYC 3) for the potential for significant paleontological resources.

The following is a description of the two Classifications in the Project Area:

- Class 1 - Very Low. Geologic units that are not likely to contain recognizable fossil remains include units that are igneous or metamorphic (excluding reworked volcanic ash units)

and units that are Precambrian in age or older. Less than a quarter of the Project Area falls into this classification.

- Class 3 - Moderate or Unknown. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential. Over 75% of the Project Area is comprised of this classification.
  - Often marine in origin with sporadic known occurrences of vertebrate fossils.
  - Vertebrate fossils and scientifically significant invertebrate or plant fossils known to occur intermittently; predictability known to be low.

  (or)

  - Poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance.

There are no known paleontological sites in or near the Project Area; therefore this resource has been eliminated from further analysis in this document.

3.8 Soils

3.8.1 Regulatory Framework

BLM regulations for surface management of public lands mined under the General Mining Law of 1872 (30 USC §22 et seq.) are provided in 43 CFR 3809. Specifically, 43 CFR 3809.1-3(d) requires mining-related activities to minimize impacts to soil resources. Guidance for reclamation is provided in BLM Handbook H-3042-1 (1992).

NAC 445A.350 - NAC 445A.447 (Mining Facilities) and NAC 519A.010 - NAC 519A.415 (Regulation of Mining Operations) were developed to implement the requirements of the NRS 445A.300 - NRS 445A.730 (Water Pollution Control) and NRS 519A.010 - NRS 519A.290 (Reclamation of Land Subject to Mining Operations). The purpose of these statutes are in part to ensure that the lands disturbed by mining operations are reclaimed to safe and stable conditions, which includes soil conservation through erosion control.

3.8.2 Assessment Area

The assessment area for soils is the Project Area.

3.8.3 Existing Environment

Soils in the Project Area have been mapped by the NRCS (NRCS 2002). According to the NRCS, the following chart represents the soil map units and their dominance represented by percentages within the assessment area:

Table 3-6 – Soil types within the project area

Humboldt County, Nevada, East Part (NV777)			
Map Unit Symbol	**Map Unit Name**	**Approximate Acres**	**Percent of Project Area**
203	Davey-Goldrun association	191	5.5%
204	Davey-Blackhawk association	366	10.6%
233	Dun Glen very fine sandy loam, 0 to 2 percent slopes 1 /	1	0.1%
615	Weso fine sandy loam, 0 to 2 percent slopes 1/	994	28.7%
655	Soughe-Hoot association	14	0.4%
1594	Boton complex	960	27.7%
1622	Weso-Davey-Broyles association	933	27.0%
Totals for Project Area		**3,459**	**100.0%**

Soil associations typically consist of up to three major soils and some minor soils or miscellaneous areas. Foothills and hills generally have a water erosion hazard of severe, and wind erosion hazard of low. Piedmonts generally have a water erosion hazard of low and wind erosion of moderate. Sand sheets and dunes generally have a water erosion hazard of low, and wind erosion of severe.

Biological soil crusts (BSC) are present in the project area(s). Biological soil crusts make the soil more fertile. Most of the organisms associated with the biological soil crust are photosynthetic, particularly during cold, wet seasons when most plants are dormant. This means that the biological soil crust increases the length of the time during which organic carbon is added to topsoil. In addition, some cyanobacteria and lichens fix atmospheric nitrogen, even during the winter. Biological soil crusts can make other nutrients more available for use by grasses, forbs, and shrubs, as nutrients adhere to BSCs produced sticky substances, and are prevented from leaching.

A review of the Project Area was conducted using a predictive BSC Potential GIS Model developed by a former district soil scientist and district GIS specialist. This model uses soil parameters contained in NRCS Soil Surveys for these areas and predictive factors described in Biological Soil Crusts: Ecology and Management, 2001, to rank areas for low, moderate and high ranking for BSC potential. BSC potential ranking by percentages runs approximately, 59% High, 26% moderate and 15% low according to the mapping model. Of course recent disturbances, within 10 to 15 years or less from present, may have reduced or removed BSCs in some areas. After this period, typically in Northern Nevada, BSCs would have re-established from natural spore drift form surrounding undamaged areas.

3.9 Special Status Species

3.9.1 Regulatory Framework

Special status species include species listed or proposed for listing under the ESA as threatened or endangered, proposed species, candidate species, and species included on the BLM's sensitive species list for Nevada (NV-2003-097). Candidate species are those species or subspecies (i.e., taxa) that may warrant listing as threatened or endangered; there is sufficient information on biological vulnerability and threat(s) to support a rule to list these species as threatened or endangered, but the issuance of a proposed rule to list is precluded by higher listing priorities. Proposed species are taxa for which a proposal to list the species as threatened or endangered has been published in the Federal Register.

Sensitive species are taxa that are not already included as BLM special status species under (1) federally listed, proposed, or candidate species or (2) State of Nevada listed species. The BLM policy in the BLM manual 6840.06 states, "Actions authorized by the BLM shall further the conservation and/or recovery of federally listed species and conservation of Bureau sensitive species. Bureau sensitive species would be managed consistent with species and habitat management objective in land use and implementation plans to promote their conservation and to minimize the likelihood and need for listing under the Endangered Species Act of 1971, as amended under the ESA."

The BLM affords these species the same level of protection as federal candidate species. The BLM's policy for sensitive species is to avoid authorizing actions that would contribute to listing a species as threatened or endangered.

Raptor species are protected by state and federal laws. In addition, Bald Eagle, Western Burrowing Owl, California Spotted Owl, Ferruginous Hawk, Flammulated Owl, Golden Eagle, Northern Goshawk, Peregrine Falcon, Prairie Falcon, and Short-eared Owl are NDOW species of special concern and are target species for conservation as outlined by the Nevada Wildlife Action Plan (NDOW 2013a).

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-688d). The Bald and Golden Eagle Protection Act prohibits the taking or possession of and commerce in Bald and Golden Eagles, parts, feathers, nests, or eggs with limited exceptions. The definition of "take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. "Disturb" means to agitate or bother a Bald or Golden Eagle to a degree that causes, or is likely to cause, based on the best scientific information available:

- Injury to an eagle;
- A decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or

- Nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior.

This definition also covers impacts that may result due to human activities to or around a nesting site during times when eagles are not present, if when the eagles return, the alterations or activities interrupt their normal breeding, feeding, sheltering, or cause death, or nest abandonment (USFWS 2010).

3.9.2 Assessment Area

The assessment area for special status species includes the Project Area with a 4-mile radius as shown on Figure 5. This area encompasses approximately 43,234 acres and is labeled the "Wildlife Assessment Area".

3.9.3 Existing Environment

3.9.3.1 Special Status Plant Species

The Nevada Natural Heritage Program (NNHP) did not identify known occurrences of special status plant species in the Project Area (NNHP 2013). However, the NNHP did note that habitat may be available for the sand cholla (*Grusonia* pulchella). The USFWS identified no known occurrences or potential habitat within the Project Area for any special status plant species (USFWS 2014).

The special status plant species survey followed the protocols established within the *Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species* provided by the BLM. Landscapes within the Project Area that were determined to have potential habitat for the BLM sensitive plant species sand cholla were also surveyed with 100 percent visual coverage by walking transects spaced approximately 100 feet apart. If visual coverage within these landscapes could be achieved with greater distances between transects or if the distance between transects required a reduction due to visual interference, then such actions were assessed and adopted within the field.

The additional five BLM sensitive plant species below were identified in the Habitat Evaluation (HE) (Enviroscientists 2014) as having potential to occur in the Project Area and were also specifically included in the survey:

Cordelia beardtongue (*Penstemon floribundus*)

Davis peppercress (*Lepidium davisii*)

Oryctes (*Oryctes nevadensis*)

Nevada dune beardtongue (*Penstemon arenarius*)

Tonopah milkvetch (*Astragalus pseudiodanthus*)

As requested by the BLM, saltgrass and herbaceous species within the Asteraceae family (commonly referred to as the composite or sunflower family) were also surveyed for and mapped within the Project Area, as these plant species are commonly associated with habitats used by the bleached sandhill skipper, which is a Nevada BLM sensitive insect species (BLM 2014b).

3.9.3.2 Survey Results

No special status plant species were identified within the Project Area during the botanical surveys. The NNHP reported that there are no at risk taxa recorded within the Project Area; however, habitat may be available for sand cholla, a BLM sensitive species (Enviroscientists 2014, Appendix E). Environmental disturbance may play a role in explaining why sand cholla was not observed within the Project Area. The sand cholla potential habitat within the eastern portion of the Project Area was burned by a wildfire in 1999 (GeoMac 2011) and has also undergone grazing by cattle. The majority of the landscape within the eastern portion of the Project Area is dominated by the invasive, annual grass species cheatgrass.

During the botanical surveys, saltgrass and five herbaceous species of the Asteraceae family were identified and recorded within the Project Area. The five herbaceous species of Asteraceae were: 1) brownplume wirelettuce (*Stephanomeria pauciflora*) (Appendix C, Photo Plate 1); 2) Douglas' dustymaiden (*Chaenactis douglasii*); 3) hoary tansyaster (*Machaeranthera canescens*) (Appendix C, Photo Plate 2); 4) small wirelettuce (*Stephanomeria exigua*) (Appendix C, Photo Plate 3); and 5) tufted Townsend daisy (*Townsendia scapigera*). These five species within the Asteraceae family were recorded within and/or alongside drainages in the eastern portion of the Project Area. Caterpillars (non-sensitive species) were observed on two hoary tansyaster individuals within the same occurrence that occurred along the southern edge of a large drainage in the eastern portion of the Project Area. Small wire lettuce was also observed within the Invasive Annual Grassland/Forbland and Inter-Mountain Basins Mixed Salt Desert Scrub vegetation communities in the east-central portion of the Project Area. Two saltgrass occurrences were identified within a successional sand dune community in the north-central portion of the Project Area.

Along with the saltgrass, money buckwheat (*Eriogonum nummulare*) was also recorded within the successional sand dune community in the central portion of the Project Area. Money buckwheat is a shrub species that is known to be used as a host plant by Rice's blue, a Nevada BLM sensitive insect species. For this reason, the locations of the money buckwheat occurrences were mapped.

3.9.3.3 Special Status Wildlife Species

The BLM's 2014 Winnemucca District sensitive species list was used to identify sensitive wildlife species potentially occurring in the Project Area. NDOW, NNHP, and USFWS were also queried to assist in the identification of special status species potentially occurring in the Project Area (NNHP 2011, NNHP 2013, USFWS 2011, NDOW 2011, and NDOW 2013a). Special status species with the potential to occur in the Project Area are listed in Table 3-7.

Table 3-7: Special Status Species with the Potential to Occur in the Project Area

Common Name	Scientific Name
big brown bat	*Eptesicus fuscus*
Brewer's Sparrow	*Spizella breweri*
California myotis	*Myotis californicus*
Golden Eagle	*Aquila chrysaetos*
Loggerhead Shrike	*Lanius ludovicianus*
Peregrine Falcon	*Falco peregrinus*
Sage Thrasher	*Oreoscoptes montanus*
Western Burrowing Owl	*Athene cunicularia*
western pipistrelle	*Parastrellus* (formerly *Pipistrellus*) *hesperus*
Yuma myotis	*Myotis yumanensis*

Three insect species, the bleached sandhill skipper (*Polites sabuleti sinemaculata*), Mattoni's blue (*Euphilotes pallescens mattonii*), and Rice's blue (*Euphilotes pallescens ricei*), appearing on the BLM's sensitive species list have the potential to occur in dune and deep sand habitats which occur nearby, but outside of the Project Area. These could have the potential to fly into the area. The bleached sandhill skipper (*Polites sabuleti sinemaculata*), has been found in saltgrass near Denio, Nevada.

Surveys were performed in July, 2014 for wildlife and no threatened or endangered species were observed in the Project Area (Enviroscientists 2014).

Raptors

The Project Area provides foraging habitat for a variety of raptor species. Due to the lack of trees or other features in the immediate Project Area, nesting habitat for some raptor species is limited. However, areas to the east and northeast of the Project Area provide cliffs, rocky outcrops, and other geological features that are conducive to nesting. A raptor survey was performed in accordance with the *South Sleeper Mine Exploration Project Raptor Survey Protocol* provided by the BLM (BLM 2014c) along with additional agency guidance (BLM 2014b, BLM 2014d). The Raptor Survey Area was defined by the BLM and included an area to the east of the Project

Area within the Slumbering Hills. The BLM approved the use of an all-terrain vehicle to be utilized during the raptor survey to increase efficiency. The objective of the raptor survey was to identify and survey potentially suitable raptor habitat within the Raptor Survey Area and record any raptors or raptor sign (e.g., nests, feathers, white wash, prey remains).

Two raptor species were directly observed within the Raptor Survey Area: the golden eagle (*Aquila chrysaetos*) and the red-tailed hawk (*Buteo jamaicensis*).

Two golden eagle nests, one occupied and one unoccupied, were observed approximately ten feet apart on the same cliff face of a rock outcrop approximately 150 feet above the ground. The lower of the two nests on the cliff face was assigned the status of occupied because of the presence of whitewash and the condition of the nest. In addition, a juvenile golden eagle was observed circling the rock outcrop. The other nest (immediately above) appeared disheveled and lacked recent decorations to the nest. To the northeast, two adult red-tailed hawks displaying defensive behaviors were observed near a stick nest within a pit wall in the Raptor Survey Area. A chick was observed adjacent to the nest and appeared to be on the verge of fledging as it was flapping its wings and moving along the cliff wall close to the nest. Due to the display, the occupied nest was classified as successfully fledging a red-tailed hawk chick during the 2014 season. A second red-tailed hawk sighting, a first-year juvenile, was recorded but it was located outside of the Raptor Survey Area and to the north of the Project Area.

Two locations of raptor sign, unknown species were observed within the Raptor Survey Area as whitewash on a south-facing cliff approximately 150 and 200 feet above the ground. However, no raptors or raptor nests were observed at this location. The raptor sign could also indicate that the areas are used as perches by raptors.

Potential raptor habitat within the Raptor Survey Area was generally limited to the three cliffs and the walls of an old pit. Although only one raptor nest was observed along the pit walls, these walls offer a large area of potential raptor nesting habitat. Aside from the pit walls and the three cliffs, the majority of the terrain within the Raptor Survey Area offered no potential raptor nesting habitat. There is no potential raptor nesting habitat within the Project Area.

Western Burrowing Owl

Field surveys for migratory birds were conducted on July 14 through July 17, 2014, within the Project boundary shown on Figure 2 (Enviroscientists 2014). During the surveys, four occupied western burrowing owl (*Athene cunicularia hypugaea*) burrows were recorded in the Inter-Mountain Basins Greasewood Flat vegetation community within the northwestern portion of the Project Area.

Special Status Passerines

The Project Area and surrounding area were determined to have potential habitat for the Loggerhead Shrike and Sage thrasher. Surveys were not performed for these species (Enviroscientists 2014).

Bats

The Project Area could provide foraging habitat and possibly temporary resting/roosting habitat for bats. In the Slumbering Hills, to the east and northeast boundaries of the Project Area, there are numerous outcrops, fissures, abandoned mine shafts and adits, and other rock features, which could potentially provide seasonal roosting, hibernation, or maternity colony habitat.

3.10 Vegetation

3.10.1 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.

Attachment B - 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.

3.10.2 Assessment Area

The assessment area for vegetation is the Project Area.

3.10.3 Existing Environment

The Project Area is located within the Intermountain Region, Great Basin Division, Lake Section floristic zone (Cronquist et. al. 1972). Portions of the Project Area have been affected by a wildland fire (Slumbering, 1999) which burned the Project Area and surrounding areas as shown on.

The vegetation communities associated with the Project Area have been categorized by approximate percentage as: Inter-Mountain Basins Greasewood Flat (34%), Inter-Mountain Basins Mixed Salt Desert Scrub (22%), Inter-Mountain Basins Big Sagebrush Shrubland (4%), Inter-Mountain Basins Playa (1%), Barren lands, Non-Specific (1%), Invasive Annual and Biennial Forbland (19%), and Invasive Annual Grassland (22%) SW REGap 2004. Of these vegetation communities, Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Mixed Salt Desert Scrub and Invasive Annual Grassland habitats dominate the assessment area for vegetation resources.

3.11 Wildlife

3.11.1 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 protects the quality of multiple resources and provides 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. Wildlife must also 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 an 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 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 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 503.010, 503.080, 503.110, and 503.140 lists the wildlife species currently placed in the state's various legal categories, including protected species, game species, and pest species.

3.11.2 Assessment Area

The assessment area for wildlife is the Project Area.

3.11.3 Existing Environment

The habitats within the assessment area can support limited wildlife species. No formal surveys for mammals, insects, and reptiles were conducted.

Mammals detected or mammals sign detected in the Project Area during a survey performed in November 2013, included black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), mountain cottontail (*Sylvilagus nuttallii*), grey fox (*Urocyon* cinereoargenteus), and a kit fox (*Vulpes macrotis*).

Birds observed in the vicinity of the Project Area, but not addressed in previous sections are Black-throated sparrow (*Amphispiza* bilineata), common raven (*Corvus* corax), and horned lark (*Eremophila* alpestris).

The NDOW identifies the entire Project Area as being within occupied pronghorn antelope year-round habitat.

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

Criteria Pollutants

The Proposed Action has the potential to disturb approximately 100 acres. Travel on access roads and drilling within the Project Area would create emissions which would have a potential impact on air quality. Fugitive dust, in the form of PM_{10} and $PM_{2.5}$, would be caused by the operation of the following equipment: drill rigs, excavators, bulldozers, road graders and support vehicles. Vehicle emissions, in the form of sulfur dioxide (SO2), nitrogen oxide (NOx), CO, and volatile organic compounds (VOCs), would occur anytime the internal combustion engines on the vehicles are operating.

All exploration activities with surface disturbance exceeding 20 acres are required to obtain a SAD permit from the BAPC. This permit includes a Dust Control Plan to control the emissions of fugitive dust at the Project. The BAPC's issuance of the SAD permit and requirement that the Project operate in compliance with the Dust Control Plan are intended to ensure that fugitive dust emissions are minimized to the maximum extent possible using BMPs. The Dust Control Plan stipulates that travel on roads within the Project Area would be conducted at prudent speeds. The Dust Control Plan includes watering roads to suppress dust to minimize the potential effects of fugitive dust on air quality.

Table 4-1: Summary of Total Estimated Fugitive and Combustion Emissions in Tons Per Year

Equipment	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	VOCs
Process Equipment Emissions	0.26	0.26	0.24	3.64	0.79	0.27
Fugitive Emissions (Dust and Tailpipe)	4.66	1.62	0.04	23.58	21.49	1.24
Total	**4.92**	**1.88**	**0.28**	**27.22**	**22.28**	**1.51**

Greenhouse Gases

Greenhouse Gases (GHGs) include carbon dioxide, methane, nitrogen oxide, and ozone. GHG emissions associated with the Proposed Action would be from the consumption of fuel from construction equipment, drill rigs, and support vehicles. The carbon dioxide emissions from the Proposed Action are estimated on table 4.1 above.

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

No Action Alternative

Notice-level mineral exploration activities in the Project Area would continue and impacts to air quality from the consumption of fuel from construction equipment, drill rigs, and support vehicles and through fugitive dust would occur.

4.1.2 Cultural Resources

Proposed Action

Under the Proposed Action, all sites eligible for the National Register would be avoided by construction activities. If unidentified cultural resources are encountered they would be avoided as described in Chapter 2.1.17. There are no sites listed on or determined eligible for the National Register of Historic Places in the indirect impact Area of Potential Effects (APE), but there are two historic sites that are unevaluated. One of these is Austin's Mill, a 1930s historic mill site (CrNV-21-7810) that contains no standing buildings. As there would be no disturbance of cultural resource sites in the direct impacts cultural APE, no impacts to cultural resources are anticipated and because the project is for mining exploration and visual disturbances are temporary, there would be no permanent visual impacts to any known historic sites that might be eligible for the National Register for values relating to their setting.

No Action Alternative

No impacts to cultural resources are anticipated under the No Action Alternative.

4.1.3 Invasive, Non-Native Species

MMI would implement the environmental protection measures described in Chapter 2.1.17 which includes monitoring for and control of species listed on the Nevada Designated Noxious Weeds List (NRS 555.010) according to the site *Noxious and Invasive Species Management Plan* described in Chapter 3.1 of the Plan of Operations. With implementation of these measures and reclamation of disturbances as described in Chapter 3 of the Plan, it is anticipated that the transportation of weed seeds to the site from implementation of the Proposed Action would be limited and that the establishment of weeds on disturbed areas would be minimized and controlled. Although noxious species may temporarily become established on disturbed areas,

the potential for establishment would be diminished through reclamation and an intensive weed control program.

Proposed Action

Land clearing and the removal of native established vegetation creates opportunities for the establishment of pioneering invasive, non-native, and noxious weed species if the seeds of those species are allowed to spread onto the disturbed land. The Proposed Action involves the removal of approximately 100 acres of undisturbed vegetation and has the potential to increase the spread of invasive, non-native species that are known to occur in disturbed open areas, along roadsides, and near a spring within the Project Area. Noxious weeds and additional invasive non-native species could also be introduced to disturbed areas within the Project Area by un-cleaned construction equipment brought to the Project Area from infested areas or by the use of seed mixtures or mulching materials containing weed seeds.

No Action Alternative

Existing roads would remain open to public travel, and exploration activities associated with notice-level exploration could increase the potential for the spread and establishment of noxious weeds, invasive, and non-native species (BLM 2010). Travel and exploration activities may create potential for vehicles to disperse noxious weeds and invasive, non-native species. Impacts from invasive and non-native species as a result of the No Action Alternative would be similar to the Proposed Action.

4.1.4 Migratory Birds

Proposed Action

The potential direct impacts from the Proposed Action to migratory birds could include the destruction of nests. Potential indirect impacts could occur to migratory birds as a result from the removal of vegetation and activities associated with the Proposed Action. Migratory birds that forage in the Project Area during the exploration activities would likely leave the immediate area and may result in a redistribution of individuals of habitat-use patterns during the life of the project. The environmental protection measures proposed in Section 2.1.2, and mitigation measures in Section 4.19 would mitigate most impacts to migratory birds. No long-term impacts are likely to occur as reclamation and re-establishment of vegetation would occur approximately two years after the project is completed.

No Action Alternative

Under the No Action Alternative, continued exploration-related surface disturbance could occur under the South Sleeper project notice. Therefore, up to five acres of migratory bird nesting and foraging habitat could be disturbed. Impacts to migratory birds as a result of the no action alternative would be similar to the proposed action, but would be limited to five acres.

Additional Affected Resources

4.1.5 Soils

In order to ensure erosion and soil loss are minimized, MMI has committed to the following environmental protection measures to prevent unnecessary and undue environmental degradation during construction, operation, and reclamation activities of the Proposed Action. The measures are derived from the general requirements established in 43 CFR 3809 and BMRR mining reclamation regulations, as well as other water, air quality, and environmental protection regulations. Protection measures include BMPs that prevent erosion and capture mobilized soil particles (sediment). Disturbances would be reclaimed as described under Chapter 2.2, Site Reclamation. The reclaimed areas would be planted with the seed mix presented in Table 2-3: Reclamation Seed Mix. Once established, the vegetation would hold surface soils intact and would decrease the likelihood of erosion. The accidental release of petroleum products and equipment maintenance products onto the ground surface could affect soil resources. Impacts to soils related to waste spills would be unlikely. MMI would implement environmental protection measures specified in Chapter 2.1.17 specific to waste spill prevention and cleanup.

Proposed Action

The Proposed Action would result in approximately 100 total acres of disturbance associated with the development of drill pads, roads, installation of geotechnical auger holes, geologic test pits/trenching, water extraction wells; and the installation of a meteorological station. Vegetation removal and ground disturbance would leave soils exposed to wind and water, two key components of erosion. Impacts to soils related to erosion would occur under the Proposed Action. These impacts would last until reclamation and revegetation are complete. Concurrent reclamation would be carried out at the same time as continuing activities in other areas to the extent practicable and safe. This reclamation would be implemented in areas that would not be re-disturbed and are no longer needed for additional exploration. Concurrent reclamation is anticipated to begin as soon as Project activities allow. Concurrent reclamation procedures are similar to final reclamation procedures

No Action Alternative

Under the No Action Alternative, activities covering the MMI exploration programs acknowledged under the MMI Notice (BLM casefile number N-085255) would continue to occur. Impacts to soils as a result of the no action alternative would be similar to the proposed action, but would be limited to five acres.

4.1.6 Special Status Species

Proposed Action

No sensitive plant species were detected within the Project Area during surveys, so no impacts to sensitive plants would be expected from the Proposed Action. There is no Greater sage-grouse Habitat within the project boundary.

Sensitive wildlife species and their habitat have been documented as occurring or potentially occurring within the Project Area and within the assessment area. The Proposed Action provides measures to avoid impacts to nesting migratory birds and raptors, so the destruction of active nests or disruption of breeding behavior of sensitive bird species would not be likely to occur as a result of the Proposed Action. Potential impacts to the foraging habitat could occur as a result of the exploration activities. The disturbance would be created incrementally and dispersed throughout the Project Area. The disturbed areas would be reclaimed and re-vegetated. Re-establishment of vegetation would be expected to start to take place within two years of the Project reclamation. No long-term impacts to sensitive raptor or bird species would be expected to occur and the Proposed Action would have minimal direct impacts on sensitive raptor and bird species.

Golden eagles are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, both of which prohibits take. Two golden eagle nests are located approximately 1.5 miles from the eastern boundary of the Project Area. The Proposed Action's removal of vegetation, increased vehicle traffic, and increased human presence would have minimal impacts on golden eagle foraging habitat located in the area as the proposed activities would take place in approximately three percent of the Project Area. In order to avoid impacts to individual golden eagles and their habitat, an eagle conservation plan would be prepared that would help reduce impacts to golden eagles and their habitat and provide measures to reduce the potential for a take.

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 2.1.17 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 could 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.

The Project Area lacks the necessary habitat for bat hibernacula or maternity colony roosting habitat with the closest habitat beginning approximately two miles away (Enviroscientists 2014). Foraging habitat could exist within the Project Area for the following species: Big Brown bat, California myotis, Yuma myotis, and Western pipistrelle. Potential temporary roosting habitat

could exist in the Project Area for the California myotis and Western pipistrelle. Potential impacts to the foraging habitat could occur as a result of the exploration activities. The disturbance would be created incrementally and would be dispersed throughout the Project Area. The disturbed areas would be reclaimed and re-vegetated, and vegetation would be expected to start taking place within two years of the Project reclamation. No long-term impacts would be expected to occur and the Proposed Action would have minimal direct impacts on sensitive bat species.

No Action Alternative

Under the No Action Alternative, exploration activities currently permitted through Notices would continue. Therefore, impacts to special status species could occur as a result of the No Action Alternative and would be similar, but proportionally less than the proposed action.

4.1.7 Vegetation

Proposed Action

Direct impacts to vegetation would result from land clearing and grubbing associated with drill pad and access road construction during the approximate ten years of exploration. Additionally, vegetation could be indirectly affected by soil compaction resulting from ground disturbing activities, and cleared areas could become susceptible to the establishment of invasive vegetation which could potentially out-compete native vegetation. Curretnly more than half of the project area is classified as invasive vegetation communities. The reclamation plan for the project area is designed to re-establish current land uses by employing reclamation techniques including, reclamation concurrent with exploration activities when practical and safe, and application of seed mixtures appropriate to disturbance areas as determined by BLM specialists. These seed mixures would consist of desired plant species, and would be designed to replace invasive species, if present.

Reclamation of disturbed areas resulting from the Proposed Action would be completed in accordance with the BLM and NDEP regulations including Guidelines for Successful Re-vegetation for the Nevada Division of Environmental Protection (NDEP 1998).

The post-reclamation vegetation community could be different than the pre-exploration community but is anticipated to better meet post-mining land use goals. Most impacts would last until re-vegetation efforts are successful.

No Action Alternative

Under the No Action Alternative, exploration activities currently permitted through Notices would continue. Impacts to vegetation would occur until successful revegetation of the existing disturbance associated with Notice level activities is completed.

4.1.8 Wildlife

Proposed Action

The direct impacts to wildlife would consist of temporary habitat loss and disturbance from project activity and noise. Approximately 100 acres of existing wildlife habitat, or about three percent of the Project Area, would be temporarily impacted by exploration activities over a ten-year period.

Small mammals and birds could be displaced by project related disturbance or habitat loss might perish due to increased competition of predation. The amount of losses, as a result of direct impacts, is minor compared to the populations of these species as a whole in the area. The larger, more mobile species would likely remain in the vicinity of the Project Area, but could increase their home range territory. The species could return to their original home range once the exploration activities have ceased. The construction of roads and drill pads, along with the operation of the drilling equipment, could disturb wildlife due to the presence of humans and creating noise and dust. Concurrent reclamation and re-establishment of vegetation would take place in areas no longer needed for exploration and within two years of the project completion.

The indirect impacts to wildlife would occur as a result of the temporary loss of vegetation due to the project related surface disturbance. Improvement of habitat could occur within the Project Area as the result of the surface disturbance being reclaimed and re-vegetated.

Any disturbance to mule deer or pronghorn antelope would likely be limited to visual agitation of individuals in or near the Project Area. Individual mule deer or pronghorn antelope foraging in the Project Area during exploration activities would most likely increase the size of their home range, resulting in a temporary spacial redistribution of individuals or habitat use patterns during the project, then return to their original home range after exploration activities cease. Occupied year-round pronghorn antelope distribution occurs within the Project Area, and occupied year-round mule deer distribution occurs to the east (within a mile) of the Project Area. The project proposes to impact approximately 100 acres, or approximately three percent of the Project Area, and additional mule deer and pronghorn antelope year-round range is available in the vicinity of the Project Area. Therefore no long-term impacts to mule deer or pronghorn antelope year-round range would be expected to occur, and the Proposed Action would have minimal direct impacts on mule deer and pronghorn antelope.

No Action Alternative

Under the No Action Alternative, exploration activities currently permitted through Notices would continue. Impacts to wildlife as a result of the No Action Alternative would be similar, but proportionally less than the proposed action.

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

Based on the direct and indirect impacts of the Proposed Action analyzed above, no cumulative impacts are expected to the following resources:

- Cultural Resources
- Invasive, Non-Native Species
- Migratory Birds
- Soils
- Vegetation

Analyzed in this chapter are those resources that have the potential to be incrementally impacted by the Proposed Action within the identified cumulative impacts assessment areas described below. Those are expected to be:

- Air Quality
- Wildlife
- Special Status Species

Description of Cumulative Effects Study Area Boundaries

The Air Quality CESA was developed based on an EPA standard of 31 mile (50 – kilometer) radius around the project area, as shown in Figure 6.

The CESAs for Special Status Species and General Wildlife have been developed based upon individual species and their movement capabilities. Specifically, two CESA boundaries have been developed as shown on Figure 7: the Raptor CESA, and the Wildlife CESA. The Raptor CESA is based on a 4-mile radius from the project area. The Wildlife CESA is based on the Desert Valley hydrographic area hydrologic unit watershed, and wildlife and habitat data. Soils and vegetation are incorporated in the discussion of impacts to habitat in the Raptor and Wildlife CESAs. Table 4-2 outlines the CESA areas by each resource.

Table 4-2: Cumulative Effects Study Areas

Resource	CESA Name	CESA Size (acres)
Air Quality	Air Quality CESA	1,940,760
Raptors (including Golden Eagles)	Raptor CESA	43,234
Special status species and general wildlife (including pronghorn antelope),	Wildlife CESA	147,200

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 January 27. 2015, 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. There have been no new proposed activities in the CESAs since the reports in January 2015. 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 Desert Valley Compressor Station, the Sleeper Mine (which is currently in closure), and the Sleeper Exploration Plan.

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 approximately 2,511 acres of surface disturbance. This equals approximately 5.8 percent of the Raptor CESA.

From 1985 to 2015, wildland fires have burned approximately 16,660 acres within the Raptor CESA. This equals approximately 38.5 percent of the Raptor CESA.

Within the Raptor CESA there is approximately 55 miles of roads or rights of ways. Most of these are unmaintained two-track roads; however there is one main access road and two that parallel power lines. When assuming an average 16 foot width to approximate the various types

of roads and power lines, this would total 107 acres of disturbance, which is approximately 0.25 percent of the Raptor CESA.

Livestock grazing occurs throughout the Raptor CESA. Rangeland improvements within the Raptor 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.

Wildlife CESA

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

Within the Wildlife CESA, past and present mineral exploration and development has created a total of 2513 acres of surface disturbance. This equals approximately 1.7 percent of the CESA.

From 1985 to 2015, wildland fires have burned approximately 76,140 acres within the CESA, which equals approximately 51.7 percent of the Wildlife CESA.

Within the Wildlife CESA there is approximately 148 miles of roads or rights of ways. Most of these are unmaintained two-track roads; however there is one main access road and two that parallel power lines. When assuming an average 16 foot width to approximate the various types of roads, this would total 286 acres of disturbance, which is approximately 0.19 percent of the Wildlife CESA. Dispersed recreation, including off highway vehicle use and hunting, occurs throughout the Wildlife CESA.

Livestock grazing occurs throughout the Wildlife CESA. Rangeland improvements within the CESA include 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 proposed Project and those pending projects for which an application is under evaluation, regardless of land status. The BLM LR2000 database was searched on January 27, 2015, 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

The Sleeper Mine, Sleeper Exploration and Notice level exploration activities in the area would continue through the life of the Proposed Action. Activities associated with the operation of the

Desert Valley Compressor Station (Natural gas pipeline station) would continue 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.

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 Wildlife CESA during the life of the Proposed Action.

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

This analysis considers the cumulative impact to the regional air quality within a 31 mile (50 kilometer) radius from the Project Area. The Air Quality CESA covers approximately 1,940,760 acres (Figure 6).

Impacts From Past and Present Actions

Present actions within the CESA that are likely to be contributing to air quality impacts include the Desert Valley Compressor Station, dispersed recreation, minerals exploration, mining, and transportation networks. These activities are principally contributing point source particulate matter emissions and fugitive dust to the air quality impacts; however, products of combustion are also emitted.

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 proposed project would not substantially contribute to cumulative impacts to air quality in the CESA.

No Action Alternative

The No Action Alternative would allow five acres of exploration-related surface disturbance under the South Sleeper project notice. When added to the past, present, and RFFA disturbance acres, the impacts would be limited due to the amount of activites that could be done within the five acres under the Notice.

4.2.3.2 *Raptor CESA*

Relevant CESA

The Raptor CESA is a 4-mile radius around the Project Area which includes approximately 43,234 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.

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 19,278 acres of raptor foraging habitat loss or 44.6 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. 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 can affect raptor behavior and their stress levels (Kempenaers 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 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 100 acres of raptor foraging habitat. When added to the past, present, and RFFA disturbance acres, the cumulative total is 19,378 acres within a total CESA measuring 43,234 acres (representing 44.8 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 0.23 percent within the Raptor CESA. Therefore, the impacts are expected to be minimal.

No Action Alternative

The No Action Alternative would allow five acres of exploration-related surface disturbance under the South Sleeper project notice. When added to the past, present, and RFFA disturbance acres, the cumulative total is 19,283 acres within a total CESA measuring 43,234 acres (representing 44.6 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 0.01 percent within the Raptor CESA. Therefore, the impacts would be minimal.

4.2.3.3 *Wildlife CESA*

Relevant CESA

The Wildlife CESA includes includes approximately 147,200 acres.

Impacts From Past and Present Actions

Past and present actions that are likely to have impacts to wildlife and special status 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 Wildlife CESA have affected habitat for wildlife and special status 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 Wildlife CESA have reduced habitat for special status plants. Surface disturbing activities contribute to an approximate total of 78,939 acres of wildlife and special status species habitat loss or 53.6 percent of the 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.

Impacts From RFFAs

Potential impacts to wildlife and special status species 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 wildlife and special status species 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 100 acres of habitat. When added to the past, present, and RFFA disturbance acres, the cumulative total is 79,039 acres within a total CESA measuring 147,200 acres (representing 53.7 percent of the total CESA). Based on the above analysis and findings, incremental cumulative impacts to wildlife and special status species as a result of the Proposed Action would represent an incremental disturbance of 0.07 percent within the CESA. Therefore, the impacts are expected to be minimal.

No Action Alternative

Under the No Action Alternative five acres of exploration-related surface disturbance under the South Sleeper project notice. When added to the past, present, and RFFA disturbance acres, the cumulative total is 78,944 acres within a total CESA measuring 147,200 acres (representing 53.6 percent of the total CESA). Based on the above analysis and findings, incremental cumulative impacts to wildlife and special status species as a result of the No Action Alternative would represent an incremental disturbance of 0.003 percent within the CESA. Therefore, the impacts would be minimal.

5 Recommended Mitigation

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

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 during the breeding season (March 1 – August 31), the BLM biologist must be notified immediately and a ¼ mile radius buffer shall be placed around the burrowing owl's burrow and 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 (September 1 – February 28), the BLM biologist must be notified immediately and a 250 foot radius buffer shall be placed around the burrowing owl’s burrow and the active burrow shall not be disturbed until the burrow is no longer active or until any other appropriate conservation action is determined by the BLM.

6.0 Tribes, Individuals, Organizations, or Agencies Consulted

6.1 Native American Consultation

On July 2, 2014, formal consultation letters were sent to the Winnemucca Indian Colony and Fort McDermitt Paiute and Shoshone Tribe. 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 Winnemucca Indian Colony and Fort McDermitt Paiute and Shoshone Tribe received another opportunity to consult as a part of the preliminary EA process, and no comments or concerns were raised.

6.2 Agency Coordination and/or Consultation (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.

6.3 Individuals and/or Organizations Consulted

No other individuals or organizations were consulted.

6.4 Public Outreach/Involvement

Scoping

A public scoping process was conducted for this environmental analysis. A letter and map were sent to potentially interested members of the public on July 2, 2014. The scoping letter and map were also posted on the BLM's Winnemucca District National Environmental Policy Act (NEPA) Web page. The comment period was open for 30 days.

The BLM received comments from the Nevada Department of Wildlife (NDOW), Nevada State Land Use Planning Agency, and Nevada Division of Water Resources (NDWR). Comments are discussed in Chapter 1.5.

Preliminary EA

On December 15, 2015, letters announcing the availability of the Preliminary EA were sent to interested parties and the Preliminary EA was made available for a 30-day public comment period through the BLM ePlanning NEPA Register. No comments were received.

7 List of Preparers

7.1 BLM

Name	Area of Responsibility
Kathleen Rehberg	Project Lead and Geology
Lynn Ricci	NEPA Compliance
Khatlyn Micheli	NEPA Compliance
Robert Burton	Air Quality, Soils and Vegetation
Kathryn Ataman	Cultural Resources and Paleontological Resources
Derek Messmer	Fire resources, and Invasive, non-native weed species
Lorence Busker	Hazardous Materials
Mark E. Hall	Native American Religious Concerns
Michael Wells	Rangeland Management
Gregory Lynch	Wildlife, Migratory Birds, and Special Status Species
Zwaantje Rorex	Wilderness, Wilderness Study Areas, and Lands with Wilderness Characteristics

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9 Maps