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**Bureau of Land Management**

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**Draft Environmental Assessment**  
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**Pleasant View Exploration Project**

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**Lander County**

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## TABLE OF CONTENTS

1	Introduction/Purpose and Need for Action.....	1
1.1	Introduction .....	1
1.2	Purpose of and Need for Action .....	1
1.2.1	Decision to be Made .....	1
1.3	BLM Responsibilities and Relationship to Planning.....	1
1.3.1	Conformance with Land Use Plans .....	2
1.3.2	Local Land Use Planning and Policy.....	2
1.4	Scoping and Issues.....	2
1.4.1	Scoping .....	2
1.4.2	Issues .....	2
2	The Proposed Action And No Action Alternative .....	4
2.1	Description of Proposed Action .....	4
2.1.1	Location and Access.....	4
2.1.2	Road and Drill Site Construction and Maintenance .....	5
2.1.3	Exploration .....	5
2.1.4	Laydown Area .....	5
2.1.5	Stockpile Removal.....	6
2.1.6	Equipment and Vehicles .....	6
2.1.7	Personnel .....	6
2.1.8	Water .....	6
2.1.9	Project Schedule .....	6
2.1.10	Structures and Support Facilities .....	7
2.1.11	Reclamation .....	7
2.1.12	Design Features (Applicant-Committed Environmental Protection Measures) .....	9
2.2	Alternatives to the Proposed Action .....	13
2.2.1	No Action Alternative .....	13
3	Affected Environment and Environmental Consequences.....	14
3.1	Air Quality.....	16
3.1.1	Affected Environment .....	16
3.1.2	Environmental Consequences.....	16
3.2	Cultural/Historical Resources.....	17
3.2.1	Affected Environment .....	17
3.2.2	Environmental Consequences.....	17

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3.3	Native American Religious Concerns .....	18
3.3.1	Affected Environment .....	18
3.3.2	Environmental Consequences.....	18
3.4	Noxious Weeds/Invasive Non-native Species .....	19
3.4.1	Affected Environment .....	19
3.4.2	Environmental Consequences.....	20
3.5	Riparian/Wetlands .....	20
3.5.1	Affected Environment .....	20
3.5.2	Environmental Consequences.....	21
3.6	Waste – Hazardous/Solid.....	21
3.6.1	Affected Environment .....	21
3.6.2	Environmental Consequences.....	21
3.7	Water Quality .....	22
3.7.1	Affected Environment .....	22
3.7.2	Environmental Consequences.....	22
3.8	Grazing Management .....	23
3.8.1	Affected Environment .....	23
3.8.2	Environmental Consequences.....	23
3.9	Minerals.....	23
3.9.1	Affected Environment .....	23
3.9.2	Environmental Consequences.....	23
3.10	Recreation.....	24
3.10.1	Affected Environment .....	24
3.10.2	Environmental Consequences.....	24
3.11	Socio-Economic Values .....	24
3.11.1	Affected Environment .....	24
3.11.2	Environmental Consequences.....	25
3.12	Soils.....	25
3.12.1	Affected Environment .....	25
3.12.2	Environmental Consequences.....	25
3.13	Vegetation.....	26
3.13.1	Affected Environment .....	26
3.13.2	Environmental Consequences.....	27
3.14	Visual Resources .....	27
3.14.1	Affected Environment .....	27
3.14.2	Environmental Consequences.....	27
3.15	Wildlife including Special Status Species .....	28
3.15.1	Affected Environment .....	28

3.15.2	Environmental Consequences.....	31
4	Cumulative Effects.....	32
4.1	Past and Present Actions.....	32
4.2	Reasonably Foreseeable Future Actions.....	33
4.3	Impact Analysis.....	33
4.3.1	Noxious Weeds and Non-native Invasive Species.....	33
4.3.2	Water Quality.....	35
4.3.3	Soils.....	36
4.3.4	Vegetation.....	37
4.3.5	Wildlife.....	38
5	Consultation and Coordination.....	40
5.1	List of Preparers.....	40
6	References.....	41

## List of Tables

Table 1:	Disturbance in the Project Area.....	4
Table 2:	Pleasant View Project Reclamation BLM-Approved Seed Mix.....	8
Table 3:	Elements Associated with Supplemental Authorities.....	14
Table 4:	Resources or Uses Other Than Elements Associated with Supplemental Authorities.....	15
Table 5:	NDWR Well Log Information.....	22
Table 6:	Soil Characteristics.....	25

## List of Figures

Figure 1:	Location Map
Figure 2:	Site Access
Figure 3:	Project Area and Land Status
Figure 4:	Existing and Proposed Disturbance
Figure 5:	Water Resources
Figure 6:	Vegetation
Figure 7:	Grazing
Figure 8:	Soils
Figure 9:	Greater Sage-Grouse Habitat and Sightings
Figure 10:	Wildlife
Figure 11:	Cumulative Effects Study Area

## Appendices

Appendix A:	Vegetation Observed in the Project Area
Appendix B:	Wildlife Species Having the Potential to Occur in the Project Area
Appendix C:	Surface Management Plans Located Partially or Wholly within the CESA

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## Acronyms

amsl	above mean sea level
AUM	animal unit month
BAPC	Bureau of Air Pollution Control
bgs	below ground surface
BLM	Bureau of Land Management
BMP	best management practice
BMRR	Bureau of Mining Regulation and Reclamation
CESA	cumulative effects study area
CFR	Code of Federal Regulations
EA	Environmental Assessment
EO	Executive Order
FONSI	Finding of No Significant Impact
FLPMA	Federal Land Policy Management Act
GHG	greenhouse gas
HES	Halliburton Energy Services
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NNHP	Nevada Natural Heritage Program
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
Plan	Pleasant View Exploration Plan of Operations
Project	Pleasant View Exploration Project
RFFA	Reasonably Foreseeable Future Action
RMP	Resource Management Plan
ROW	right-of-way
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
USFWS	United States Fish and Wildlife Service
VRM	Visual Resource Management

# 1 INTRODUCTION/PURPOSE AND NEED FOR ACTION

## 1.1 Introduction

This Environmental Assessment (EA) has been prepared to analyze the Halliburton Energy Services' (HES) proposal for the Pleasant View Exploration Project (Project) as described in the *Pleasant View Exploration Plan of Operations NVN-090457* referred to herein as the Plan (SRK 2012a). The Project is located in Lander County, Nevada, approximately 14 miles southeast of Battle Mountain. The Project is located on public lands within Township 30 North, Range 46 East (T30N, R46E), Section 2, and T31N, R46E, Section 34, Mount Diablo Base and Meridian. The general location is shown on Figure 1.

The Project Area encompasses approximately 698 acres which are administered by the Bureau of Land Management (BLM) Mount Lewis Field Office. The location of access roads are shown on Figure 2, and the extent of the Project Area is shown on Figures 3 and 4. Barite mining previously occurred within the Project Area and consisted of several small pits, waste rock dumps, and exploration roads. The operations were active in the early 1980s. No known mining activities have occurred at the site since cessation of these prior activities in 1983.

HES has commenced a drilling program under a notice (NVN-089501) which was approved by the BLM on March 10 2011. The notice authorized drilling of up to 35 reverse circulation drill holes with associated drill pads, sumps, and roads. Total disturbance authorized by the notice is 4.54 acres. This authorized disturbance has been incorporated into the Plan.

## 1.2 Purpose of and Need for Action

HES has submitted a Plan to explore, locate, and delineate mineral deposits on public lands and federal mineral estates managed by the BLM Mount Lewis Field Office. Under the General Mining Law of 1872 (Mining Law), the BLM is required to consider approval of HES' Plan.

The need for the action is established by the BLM's responsibility under Section 301 of Federal Land and Policy Management Act of 1976 (FLPMA) and the BLM Surface Management Regulations at 43 Code of Federal Regulation (CFR) 3809, to respond to an exploration plan of operations and ensure any actions taken to prospect, explore, assess, develop, and process locatable mineral resources on public lands prevent unnecessary or undue degradation of the public lands and reclaim disturbed areas. The BLM is required to comply with the National Environmental Policy Act of 1969 (NEPA) to analyze the impacts that the Proposed Action and reasonable alternatives would have on the human environment.

### 1.2.1 Decision to be Made

The Mount Lewis Field Manager's decision would determine whether to approve the HES Plan as submitted or modify the Plan through necessary stipulations, conditions of approval, or mitigation developed through this EA.

An EA is a NEPA document that provides sufficient information on the potential impacts to the quality of the human environment to determine whether to prepare an environmental impact statement or a Finding of No Significant Impact (FONSI). The EA allows for specialist review of affected resources even if impacts are not significant and also provides a mechanism for developing and identifying appropriate mitigation measures.

## 1.3 BLM Responsibilities and Relationship to Planning

The BLM is responsible for the preparation of this EA, which was prepared in conformance with the policy guidance provided in the updated BLM NEPA Handbook H-1790-1.

### **1.3.1 Conformance with Land Use Plans**

The Proposed Action conforms with the Shoshone-Eureka Resource Management Plan (RMP) (BLM 1986), specifically page 29 in the RMP Record of Decision under the heading “Minerals” subtitled “Objectives” number 1:

“Make available and encourage development of mineral resources to meet national, regional, and local needs consistent with national objectives for an adequate supply of minerals.”

Under “Management Decisions,” “Locatable Materials,” page 29, number 1:

“All public lands in the planning areas would be open for mining and prospecting unless withdrawn or restricted from mineral entry.”

Under “Management Decisions,” number 5, “Current Mineral Production Areas”:

“Recognize these areas as having a highest and best use for mineral production and encourage mining with minimum environmental disturbance...”

### **1.3.2 Local Land Use Planning and Policy**

The Proposed Action is consistent with Section XI of the Lander County Revised Policy Plan for Federally Administered Lands – July 2005 (Lander County 2005), which sets forth the policy to “...promote the expansion of mining operations and areas...” This policy also states that mine site and exploration reclamation standards should be consistent with the best possible post-mine use for each specific area and that specific standards should be developed for each property.

## **1.4 Scoping and Issues**

### **1.4.1 Scoping**

The Project was internally scoped by the BLM Interdisciplinary team at a meeting held on June 26 2012, at the BLM office in Battle Mountain. Native American Tribes with known interests in the area were notified of the Project in April and June 2012.

### **1.4.2 Issues**

During an internal meeting, BLM personnel identified the elements associated with supplemental authorities and other resources and uses to be addressed in this document as outlined in Section 3. The following specific issues related to the Proposed Action were identified as being present and either “not affected” or “may be affected”:

- Air Quality;
- Bald and Golden Eagles;
- Cultural/Historical Resources;
- Grazing Management;
- Minerals;
- Noxious Weeds, Invasive and Non-native Species;
- Migratory Birds;
- Native American Religious Concerns;
- Recreation;
- Riparian/Wetlands;
- Socioeconomic Values;
- Soils;
- Special Status Species;
- Vegetation;

- Visual Resources;
- Wastes-Hazardous and Solid;
- Water Quality; and
- Wildlife.

## 2 THE PROPOSED ACTION AND NO ACTION ALTERNATIVE

### 2.1 Description of Proposed Action

HES proposes to disturb approximately 19.4 acres under the Proposed Action as shown on Figure 4. Proposed, authorized, and existing disturbance areas are listed in Table 1 including 4.54 acres of disturbance from notice NVN-089501. The proposed disturbance is located on public land administered by the BLM Mount Lewis Field Office.

The listed existing disturbance areas are unreclaimed disturbed areas from prior mining activities and may be utilized as part of the Project. HES would take responsibility for the reclamation of the listed existing disturbance areas associated with roads, pads, the stockpile site, and the laydown area, for a total area of 41.3 acres.

The Proposed Action includes the following activities:

- Construction of new exploration drill roads, pads, and sumps;
- Improvement of existing and unreclaimed exploration roads;
- Overland travel to some drill sites;
- Maintenance of existing access roads;
- Construction of a laydown area on a disturbed area; and
- Removal of the existing barite stockpile to a transfer site and then off-site for processing.

**Table 1: Disturbance in the Project Area**

<b>Disturbance Type</b>	<b>Proposed Disturbance (acres)</b>
<b>Proposed Disturbance</b>	
Transfer Site	0.1
Roads and Pads	19.3
<b>Total Proposed Disturbance</b>	<b>19.4</b>
<b>Prior Authorized Disturbance</b>	
Roads and Pads (NVN-089501)	4.5
<b>Total Prior Authorized Disturbance</b>	<b>4.5</b>
<b>Existing Disturbance</b>	
Roads and Pads	17.1
Stockpile Removal	0.2
Laydown Area	0.1
<b>Total Existing Disturbance</b>	<b>17.4</b>
<b>Total Existing, Authorized, and Proposed Disturbance</b>	<b>41.3</b>

#### 2.1.1 Location and Access

Access to the site would be from the west from Battle Mountain Hill Top Road then to an existing dirt road to the Pleasant View Project Area. Roads to the drill pad locations would spur off of the main road and follow existing exploration roads or would require new construction. Figure 2 shows the Project access.

HES has identified locations for each drill site in the Plan; however, as drilling proceeds and drill data is collected, not all drill site locations may be used.

## 2.1.2 Road and Drill Site Construction and Maintenance

Figure 2 shows the location of access roads leading into the Project Area while Figure 4 shows the existing roads, proposed roads, proposed overland travel, and proposed drill pad locations. The main access road from Hill Top Road through the site is considered public access and would remain open after the Project is completed.

Maintenance of existing access roads within the Project boundary would be conducted by HES on an as-needed basis and would include minor seasonal regrading and re-establishment of surface water control features, as necessary. Road maintenance would also consist of smoothing rutted surfaces and holes on existing access and drill roads. Portions of the existing access roads would be graded to allow travel by drill rigs.

New drill roads would be constructed with a 15-foot width and an 18-inch high safety berm where needed. Construction would be simple cut to fill using a dozer for most of the work. The downhill fill slope would be approximately 1.3H:1V (horizontal to vertical) (52 degrees), and the uphill cut slope would be approximately 1H:0.6V (60 degrees). The total estimated length for new construction would be approximately 19,800 feet. Most drill sites would be accessed from existing roads constructed by the previous mine operator.

Improvements to existing drill roads would consist of pushing rocks, vegetation, and slough out of the way to provide access. The resulting road would be 15 feet wide (as with new construction) with 18-inch high safety berms constructed where needed. The maximum length of road improvement would be approximately 26,250 feet. Existing unreclaimed exploration roads would be reclaimed together with the proposed new disturbance.

Overland travel would be used to access some of the drill pads without the need for road construction. Disturbance related to overland travel has been calculated using a 10-foot width to provide for reclamation of disturbed areas consisting of scarification and reseeded. The total estimated length of overland travel would be approximately 3,820 feet.

New drill pad disturbance would be kept to the minimum necessary for safe access and a safe working area for equipment and crews; pads would measure approximately 40 feet by 80 feet. Up to 313 drill pads have been proposed for the Project although all drill pads may not be constructed.

Sumps would be constructed within the footprint of each drill pad to collect drill cuttings and to manage drilling fluids. Sumps would be approximately two feet wide by seven feet long by 3.5 feet deep. A seven-foot long ramp would lead from the sump bottom to the surface to provide for wildlife and cattle egress.

## 2.1.3 Exploration

The exploration program would consist of drilling exploration holes utilizing truck- or track-mounted reverse circulation drills, or core drills although the majority of the drilling is planned to be reverse circulation. As many as two drill rigs, a water truck, and a pipe truck would be utilized to conduct exploration drilling.

Exploration drill holes would be vertical and would average 300 feet below ground surface (bgs) in depth, with the maximum depth being 1,000 feet bgs. Groundwater may be encountered below 500 feet bgs but is not expected to be encountered in the majority of the drill holes as they would not extend to this depth. Only a few drill holes would be drilled to depths below the groundwater level to obtain data for underlying rock and groundwater characterization. All drill holes will be abandoned per NAC 534.4371.

## 2.1.4 Laydown Area

The laydown area would be an irregular polygon 45 feet wide by 100 feet long used to stage drill rods, supplies needed for drilling (hole plug bentonite, grout, and sample bags), and a portable toilet. The location of the laydown area is shown on Figure 4. Fuel would not be stored on site and would be provided to the drill rigs from tanks mounted in four-wheel drive trucks.

## **2.1.5 Stockpile Removal**

HES proposes to remove approximately 2,100 tons of barite for testing to evaluate barite grades from a stockpile that was left from previous mining operations. The stockpile location is shown on Figure 4. The stockpile area would be accessed from existing and proposed drill roads and would not require new construction. The material would be hauled to a transfer site in Section 34 adjacent to the access road using 30-ton articulated trucks. The transfer site would be located at an existing pullout area at the bottom of the hill which would require expanding to an area of 60 feet wide by 80 feet long. The current pullout area is 20 feet wide by 60 feet long. The stockpiled barite would then be loaded into over-the-road trucks and transported to HES' Dunphy plant for processing. The transfer of the stockpile would require a maximum of 70 trips using the equipment described. The Dunphy plant is located approximately 25 miles to the northwest of the Project Area. HES anticipates the stockpile will be moved in less than a week. The area under the existing stockpile would be reclaimed once the stockpiled material has been removed.

## **2.1.6 Equipment and Vehicles**

As many as two truck- or track-mounted reverse circulation or core drill rigs, a water truck, and a pipe truck would be utilized to conduct exploration drilling. Drilling support equipment may include four-wheel drive trucks, trailers, mud tanks, air compressors, and portable light plants/generators. Dozers would be used for road and drill pad construction and maintenance, and backhoes/loaders may be used for sump construction and stockpile removal. Stockpiled material would be hauled using 35- or 40-ton articulated trucks and over the road trucks.

## **2.1.7 Personnel**

Standard procedures usually require a geologist to be available throughout Project-related drilling activities. The duties of the geologist generally include, logging each hole according to geologic features encountered, determining the maximum depth of each hole, and advising the drill operator as needed. The geologist would travel to and from the drill site in a separate four-wheel drive truck.

Standard drill rig crews generally consist of a drill operator and one or two helpers. The helpers remove and box the recovered rotary samples, mix drilling fluids, operate the water truck, assist with drilling operations, and conduct maintenance as necessary. The crew is generally transported to and from the drill site in a four-wheel drive vehicle. A total of four employees per crew may be working at any time at the Project. Drilling activities would be conducted during one 12-hour shift per day but may be expanded to 24 hours per day depending on rig availability and schedule.

## **2.1.8 Water**

Water or non-toxic drilling fluids may be utilized as necessary during drilling. Water would be obtained from one of several existing wells pending negotiations with owners. Currently HES has permission to obtain water from the Baker Hughes Inc., Argenta plant. Water would be hauled to the drill sites by a water truck.

## **2.1.9 Project Schedule**

The exploration activities described would be initiated immediately upon approval of the Plan and upon acceptance of the reclamation cost estimate by the BLM and the Nevada Division of Environmental Protection (NDEP). Exploration activities would continue for up to three years after approval. Reclamation would begin within two years of drilling activity completion.

Earthwork and revegetation activities are most effectively implemented during specific seasons of the year. Earthwork would be completed during appropriate dry seasons. Seeding for revegetation would be completed during the fall or winter seasons for best results. Site conditions and/or yearly climatic variations may require that this schedule be modified to achieve revegetation success. Reclamation activities would be coordinated with the NDEP Bureau of Mining Regulation and Reclamation (BMRR) and BLM, as necessary. The

proposed reclamation duration is expected to be up to four years from the time of commencement to final reclamation. Revegetation is anticipated to take three to five years after the time of seeding to achieve success.

### **2.1.10 Structures and Support Facilities**

No constructed structures are proposed. Portable toilets would be provided for the crews. The portable toilets, owned by a vendor, would be kept in the laydown area and would be removed upon completion of the drilling program.

### **2.1.11 Reclamation**

HES would take responsibility for the reclamation of Project-related disturbances and existing disturbance areas associated with roads, pads, the stockpile site, and the laydown areas listed in Table 1. Existing pits would be left in their current state.

Reclamation of disturbed areas resulting from activities outlined in this Proposed Action would be completed in accordance with BLM and NDEP regulations and requirements. The objectives of the reclamation program are as follows:

- To minimize erosion damage and protect water resources through careful control of water runoff;
- To establish surface growth media conditions conducive to the regeneration of a stable plant community through managing growth media;
- To revegetate new and historically disturbed areas that are re-disturbed during this project with a diverse mixture of plant species in order to establish long-term productive plant communities compatible with existing land uses; and
- To employ existing site-specific resources that would enhance wildlife habitat and encourage establishment by desirable plant species.

### **Growth Media**

HES would salvage growth media from new disturbance areas where feasible. Growth media salvaged from road corridors would be placed down-gradient from the road for use during reclamation. Growth media from drill pads would be placed in a single berm or piled on one end of each pad. The growth media stockpiles and berms would be seeded if the area would not be reclaimed within one year of disturbance to reduce soil loss through erosion. A minimum of one sign would be placed on each stockpile to identify it as growth media to protect it from further disturbance.

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

Generally, seedbed preparation and broadcast seeding would take place after regrading disturbed areas. Broadcast seed would be covered by harrowing, raking, or other site-specific appropriate method as necessary to provide seed cover and enhance germination rates. Reclaimed surfaces would be left in a textured or rough condition (e.g. furrows) to enhance moisture retention and revegetation success while minimizing erosion potential.

The seed mix for the Proposed Action is provided in Table 2. The mix is designed to include species that can exist in the environment of northeastern Nevada, are proven species for revegetation, and/or are native species found in the plant communities prior to disturbance. Broadcast seeding would be at a rate of approximately 17 pounds of pure live seed per acre. The proposed BLM-approved certified noxious weed-free seed mixture and application rates are subject to modification by the BLM. The actual seed mixture and application rates would be determined prior to seeding based on the results of reclamation in other areas of the Project, concurrent reclamation, revegetation test plots, or changes by the BLM in its seed mix requirements. No fencing of the seeded areas would occur.

**Table 2: Pleasant View Project Reclamation BLM-Approved Seed Mix**

Common Name	Scientific Name	Seeds/ pound	Pure Live Seed pounds/acre	Seeds/ ft <sup>2</sup>
Bluebunch Wheatgrass	<i>Pseudoroegneria spicata</i>	140,000	4.5	14.5
Thickspike Wheatgrass	<i>Elymus lanceolatus</i>	154,000	4.5	15.9
Lewis Flax	<i>Linum lewisii</i>	293,000	2.0	13.5
Kochia Prostrata	<i>Bassia prostrata</i>	407,700	3.0	28.0
Fourwing Saltbush	<i>Atriplex canescens</i>	52,000	3.0	3.6
<b>Totals</b>			<b>17.0</b>	<b>75.5</b>

Earthwork would be completed during appropriate dry seasons. Seeding would occur during the period of October 1 through March 15. Site conditions and/or yearly climatic variations may require that this schedule be modified to enhance germination rates. Reclamation activities would be coordinated with the BMRR as necessary.

Reclamation would begin within two years of drilling activity completion. The proposed reclamation duration is expected to be up to four years from the commencement of final reclamation. Revegetation is anticipated to take three to five years after to achieve success.

HES would monitor revegetation success and the presence of noxious weeds on an annual basis until the reclaimed areas are released as according to the *Nevada Guidelines for Successful Revegetation for the NDEP, the BLM, and the Forest Service*. Weed control would be performed, as needed and as described in the Plan's operating procedures, by HES during the appropriate season.

### **Anticipated Post-Exploration Land use**

At the completion of exploration, closure, and reclamation activities, the Project Area is anticipated to support the multiple land uses of livestock grazing, wildlife habitat, and recreation.

### **Constraints on Estimated Time to Complete Reclamation**

The estimated time to complete reclamation assumes average precipitation rates occur during the year following seeding. Periods of drought could delay successful revegetation. Generally, the time to complete reclamation and closure activities is assumed to be staged in a manner that allows completion within a single calendar year.

### **Proposed Disposition of Buildings, Equipment, and Materials**

Temporary facilities such as portable toilets would be removed from the Project Area during reclamation activities. When drilling activities are completed, drill steel, drilling fluids, or other drilling equipment would be removed from the site when the drilling contractor demobilizes.

### **Proposed Reclamation Techniques of Road Features**

Regrading and reshaping constructed drill pads and exploration roads would approximate original topography. Fill material would be pulled onto the roadbeds to fill the road cuts and restore the slope to approximate natural contours. Soil material placed in road fill during construction would be replaced (backfilled) into the road cuts and onto drill sites. Roads and drill pads would be regraded and reshaped with an excavator or bulldozer. The ore stockpile, laydown area, and transfer site would be reshaped to blend in with the surrounding topography and scarified in preparation for reseeding.

Disturbed drainages would be reshaped to approximate pre-construction contours. The resulting channels would be of the same capacity as up- and downstream reaches and would be made non-erosive by use of surface stabilization techniques (rip-rap) where necessary, and ultimately revegetated. Following completion of earthwork, disturbed areas would be seeded as described earlier.

## **Surface Facilities or Roads not Subject to Reclamation**

The main access road to and through the site is currently an unmaintained road. Due to the small scale and brief duration of this exploration project, HES would make improvements to the main access roadway but would not maintain the roadway once the project is complete. The main access road would not be reclaimed and would be retained for public use at the exploration project's completion. In the future, if a mine plan was warranted through favorable drilling results, HES would re-assess its role for the access road's maintenance during mining and after closure.

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

Post-reclamation management would commence on reclaimed areas following completion of final reclamation work. Post-reclamation management would extend until reclamation of the site or component has been accepted by the BMRR and BLM. For sites reclaimed early in the operations, management of the reclaimed sites would occur concurrently with operational site management. Annual reports showing reclamation progress would be submitted to the BLM and BMRR. Annual reports would be submitted by March 31 each year of the reclamation period.

### **2.1.12 Design Features (Applicant-Committed Environmental Protection Measures)**

Design features (applicant-committed environmental protection measures) have been developed to minimize or avoid environmental impacts. The design features included in Section 2.D *Standard Operating Procedures* of the Plan are discussed in the following paragraphs by resource.

#### **Air Quality**

Project-related traffic would observe prudent speed limits to enhance public safety, protect wildlife and livestock, and minimize dust (particulate) emissions. Water truck(s) would be used as necessary to manage fugitive dust. Project vehicles would be maintained on a regular basis to ensure they are operating in a manner to minimize vehicle emissions. HES would acquire a Surface Area Disturbance Permit from the NDEP- Bureau of Air Pollution Control.

#### **Water Quality**

##### ***Erosion and Sediment Control***

HES would conduct exploration operations in a manner to minimize soil erosion. Equipment would not be operated when ground conditions are such that excessive rutting or increased sediment transport would occur. When drainages must be crossed by a road, best management practices (BMPs) would be followed to minimize surface disturbance and erosion potential. HES would monitor the effectiveness of erosion control measures as deemed necessary, in the spring and fall, after large precipitation events, and as part of releasing the reclamation bond.

During winter months, snow removal would be conducted using a motor grader or a snow plow mounted on an over-the-road dump truck. Snow would be piled over the side of the safety berms on the access or haul roads or would be stacked in wide, flat areas near the access roads, drill pads, and other facilities. Snow would not be stacked or piled in areas where spring runoff could adversely impact nearby streams or ephemeral drainages (i.e. sediment loading). If necessary, a loader and an over-the-road dump truck would be utilized to remove snow from these areas.

Sediment control structures may include, but would not be limited to, fabric and/or weed-free hay bale filter fences, siltation or filter berms, and drainage channels.

### ***Spill Contingency***

In the event hazardous or regulated material, such as diesel fuel, is spilled HES would take measures to control the spill, and the NDEP and BLM would be notified as per NDEP regulations and permit requirements. Spills would be managed according to the site Spill Contingency Plan (HES 2012). Spilled liquids would be placed in suitable, approved containers, and contaminated soils would be placed in drums for temporary storage and transportation to an approved disposal facility.

Materials and equipment necessary for spill cleanup would be kept on operational vehicles to mitigate releases or spills in the field. Equipment would be maintained in good working order to reduce the potential for releases. When practicable, equipment maintenance would be performed off-site. If emergency maintenance is performed at the-site, measures to prevent the release of materials would be carried out according to the Spill Contingency Plan (HES 2012).

### ***Drilling Effluent Management***

Sumps would be constructed within the footprint of each drill pad to collect drill cuttings and to manage drilling fluids. Sumps would be approximately two feet wide by seven feet long by three and one half feet deep. A seven-foot long ramp would lead from the sump bottom to the surface to provide for wildlife and cattle egress. Sumps would be backfilled when they have dewatered after completion of drilling for safety reasons and to ensure protection of the environment. If mud tanks are cleaned at the site, the contents would be contained in the sump and covered with backfill.

### ***Drill Hole Abandonment***

Drill holes would be plugged in accordance with Nevada Administrative Code (NAC) 534.4371.

### **Noxious Weeds/Invasive Non-native Species**

Employees and contractors would be educated to identify noxious weeds that could occur in the proposed disturbance areas. HES would report occurrences of noxious weeds to the BLM authorized officer and take appropriate measures to prevent the spread of noxious weeds. Best management practices include the following:

- Flagging areas of concern to prevent employees and contractors from driving through a stand of listed noxious weeds;
- Seeding growth media stockpiles as soon as practical with an interim BLM-approved certified noxious weed-free seed mix;
- Using certified weed-free hay and straw;
- Using a BLM-approved certified noxious weed-free seed mix to reduce invasive species over time by developing and maintaining desired plant communities; and
- Washing equipment to prevent the transfer of noxious and undesirable weed seed from other areas. Washing would occur either at the site prior to demobilization or at the contractor's shop.

### **Wildlife and Vegetation**

To minimize impacts to wildlife and plant resources within the Project Area, HES would utilize existing access and exploration roads to the maximum extent possible. In addition, new surface disturbance would be kept to the minimum required to provide safe equipment access and crew working areas at each drill site. Disturbed areas would be reclaimed by recontouring and revegetating at the earliest practical time upon the completion of exploration operations. If necessary, HES, in coordination with the BLM, would implement measures to avoid or protect special status plant or wildlife species that could potentially be impacted by the Proposed Action.

Land clearing and surface disturbance would be timed to prevent destruction of active bird nests or of young birds during the avian breeding season (March 1 through July 31) in accordance with the Mount Lewis Field Office specialist recommendations and with the Migratory Bird Treaty Act of 1918 (MBTA). If surface-disturbing activities are unavoidable, HES would have a qualified biologist survey areas proposed for disturbance for the presence of active nests immediately prior to the disturbance.

If active nests are located, or if nesting behaviors are observed (mating pairs, territorial defense, carrying nesting material, transporting of food), the area would be avoided using a United States Fish and Wildlife Service (USFWS)-approved buffer to prevent destruction or disturbance of nests until the birds are no longer present. Avian surveys would be performed only during the avian breeding season and would be valid for 10 days. Outside of the ten-day time frame HES would not conduct additional disturbance during the avian breeding season without first conducting another survey.

Peregrine Falcon and Long Eared owl nests have been observed within the Project Area. If these nests remain active, or if other active raptor nests are observed during a raptor survey, disturbance within one mile of the nests would be avoided between March 1 and August 31 or the appropriate time frames for the species as provided by accepted published guidelines and upon consultation with the BLM and Nevada Department of Wildlife (NDOW) resource specialists. Raptor nests would not be removed as a result of the exploration operation unless approved by the appropriate agency (NDOW and/or USFWS).

Bald and golden eagles are protected under the *Bald and Golden Eagle Protection Act* of 1940 (Act) (16 USC 668-688d). The 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 alternations or activities interrupt their normal breeding, feeding, sheltering, or cause death, or nest abandonment.

Avian surveys would be conducted prior to ground disturbance as described above to determine the presence or absence of eagles as well as other migratory avian species protected under the MBTA. If nesting or brooding eagles are determined to be present, HES would avoid the area using a buffer zone developed in coordination with the BLM and NDOW.

Project-related traffic would observe prudent speed limits, 25 mph or less, to minimize fugitive dust emissions, protect wildlife and livestock, and to enhance public safety.

## **Fire Protection Measures**

The following precautionary measures would be taken to prevent and report wildland fires:

- Vehicles would carry fire extinguishers;
- Adequate firefighting equipment (i.e., shovel, Pulaski, extinguishers), and an ample water supply would be kept at each drill site;
- Vehicle catalytic converters would be inspected often and cleaned of brush and grass debris;
- HES would conduct welding operations in an area free from or mostly free from vegetation. An ample water supply and shovel would be on hand to extinguish fires created from the sparks. Personnel would be at the welding site to watch for fires created by welding sparks;

- HES would report wildland fires immediately to the BLM Central Nevada Interagency Dispatch Center at (775) 623-3444; and
- Before conducting operations during the months between May and September, HES would contact the BLM Mount Lewis Field Office, Division of Fire and Aviation at (775) 635-4000 to inquire about any fire restrictions in place for the area of operation.

## **Cultural Resources**

Avoidance is the HES-preferred treatment for preventing effects to historic properties (a historic property is any prehistoric or historic site eligible to the National Register of Historic Places (NRHP)) or unevaluated cultural resources. Individuals and HES would use the results of the Class III cultural resources surveys to ensure sites eligible for the NRHP are appropriately avoided. Site area borders would be staked and/or flagged with buffer areas as needed. No cultural resource sites recommended as eligible for the NRHP were located during the Class III cultural surveys as discussed in Section 3. No unevaluated sites are known to occur within the Project Area.

The proponent would be responsible for ensuring that employees, contractors, or others associated with the Project do not damage, destroy, or vandalize surface archaeological, historical, or vertebrate paleontological sites or the artifacts/fossils within them. Should damage to cultural or paleontological resources within or near the Project Area occur during the period of construction, operation, or rehabilitation due to the unauthorized, negligent, or inadvertent actions of the proponent or Project personnel, the proponent would be responsible for costs of rehabilitation or mitigation. Individuals involved in illegal activities could be subject to penalties under the Archaeological Resources Protection Act of 1979 (16 U.S.C 470ii), the Federal Land Management Policy Act of 1976 (43 U.S.C 1701), the Native American Graves Protection and Repatriation Act of 1990 (16 U.S.C. 1170) and other applicable statutes.

If human remains/burials, previously unidentified cultural (archaeological or historical) resources, or vertebrate paleontological resources are discovered while conducting activities related to the Proposed Action, the proponent would immediately cease activities within 300 feet of the discovery, ensure the discovery is appropriately protected, and immediately notify the Mount Lewis Field Manager by telephone, followed with written confirmation. Work would not resume, and the discovery would be protected until the BLM Authorized Officer issues a notice to proceed.

Where feasible, areas of disturbance would be redesigned and managed to avoid impacts to eligible or unevaluated cultural resources within or near the Project Area. A 100-foot wide buffer would be established between such properties and Project Area. A lesser buffer may be used if a physical barrier (fence, creek, etc.) exists between them.

If Project redesign is not practical, or is not an effective method for mitigating adverse effects to cultural properties, data recovery in conformance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 CFR 44716 (September 29 1983), as amended or replaced), would be conducted by the proponent. Once data recovery has been completed and accepted by BLM and the State Historic Preservation Officer, the BLM would issue a Notice to Proceed for work at that location.

If unevaluated or NRHP eligible sites cannot be avoided, additional information would be gathered by a qualified archeologist, and the site would be evaluated. If the site does not meet eligibility criteria as determined by the BLM, no further cultural work would be performed. If the site meets eligibility criteria, a data recovery plan or appropriate mitigation would be completed.

## **Public Safety**

The exploration area is not frequently visited by the public. However, HES would place a sign at the transfer site to warn the public of the possibility of articulated trucks on the access road. The signs would be present during the days that trucks would be hauling material. The articulated truck drivers would be required to use

caution on the access road and limit speeds to under 25 miles per hour. Sumps would be bermed for safety until they are backfilled. The existing main access road would not be blocked by drilling equipment.

### **Survey Monuments**

Survey monuments, witness corners, and/or reference monuments would be protected to the extent practicable. If monuments are damaged during operations, HES would immediately report the matter to the BLM authorized officer. If required by the BLM, the cost to replace damaged or destroyed survey monuments, witness corners, and/or reference monuments would be HES' responsibility.

### **Solid and Hazardous Materials**

Project-related refuse would be hauled from the site as it is generated and would be disposed of either in a landfill (Battle Mountain or Elko) or in a dumpster located at the trucking contractor's place of business. Refuse would be placed in heavy duty plastic bags for transport. In the event hazardous or regulated material such as diesel fuel is spilled, HES would take measures to control the spill, and the NDEP and BLM would be notified as per NDEP regulations and permit requirements. Spilled materials would be handled according to the site Spill Contingency Plan (HES 2012). Spilled liquids would be placed in suitable, approved containers, and contaminated soils would be placed in drums for temporary storage and transportation to an approved disposal facility. Only non-toxic substances would be used in the drilling process.

## **2.2 Alternatives to the Proposed Action**

Other "action" alternatives are not required in an EA. Only the Proposed Action and No Action Alternative need to be addressed. Barite exploration is based on known and suspected mineral deposits. HES would consider various methods of exploration such as core versus rotary drilling, tracked versus wheeled exploration drill rigs, and other viable alternatives to locate barite deposits. However, the Proposed Action is the most reasonable method to meet the objective of this EA while minimizing degradation to the environment. No alternatives other than the "No Action" alternative are analyzed in this EA.

### **2.2.1 No Action Alternative**

Under the No Action Alternative the activities described under the Proposed Action would not occur. The existing unreclaimed disturbance and stockpiles would remain. No new mineral resource deposits would be defined.

### 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The purpose of this section of the EA is to describe the existing environment of the Project Area affected by the Proposed Action or the No Action Alternative to analyze the potential environmental consequences of the Proposed Action and the No Action Alternative.

Supplemental authorities that are subject to requirements specified by statute or Executive Order must be considered in all BLM environmental documents. The elements associated with the supplemental authorities listed in the NEPA Handbook (BLM 2008) and in the Nevada Instruction Memorandum 2009-030 are listed in Table 3. The table lists the elements and their status in the Project Area as well as the rationale to determine whether the element is present in the Project Area and if the element may be affected by the Proposed Action. Supplemental authorities that may be affected by the Proposed Action are analyzed in this section. Those elements listed under the supplemental authorities that do not occur in the Project Area are not discussed further in this EA. The elimination of non-relevant issues follows Council on Environmental Quality policy, as stated in CFR 1500.4.

**Table 3: Elements Associated with Supplemental Authorities**

Supplemental Authority	Not Present	Present/Not Affected	Present/May be Affected	Rationale/Reference Section
Air Quality		X		See Section 3.1.
Area of Critical Environmental Concern	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Bald and Golden Eagles			X	See Section 3.15.
Cultural/Historical			X	See Section 3.2.
Environmental Justice	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Farmlands Prime or Unique	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Floodplains	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Forests and Rangelands (HFRA only)	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Human Health and Safety (Herbicide Projects)	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Migratory Birds			X	See Section 3.15.
Native American Religious Concerns			X	See Section 3.3.

Supplemental Authority	Not Present	Present/Not Affected	Present/May be Affected	Rationale/Reference Section
Noxious Weeds/Invasive Non-native Species			X	See Section 3.4.
Riparian/Wetlands			X	See Section 3.5.
Threatened and Endangered Species	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Waste – Hazardous/Solid			X	See Section 3.6.
Water Quality			X	See Section 3.7.
Wild & Scenic Rivers	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Wilderness/Wilderness Study Areas (WSAs)/Lands with Wilderness Characteristics	X			Wilderness or WSAs are not present within the Proposed Project Area or vicinity. The Proposed Project Area is substantially affected by human imprints, does not have opportunities for solitude or primitive recreation, and does not have adequate size to contain wilderness characteristics. These elements are not further analyzed in this EA.

In addition to the elements listed under supplemental authorities, the BLM considers other resources and uses that occur on public lands and the issues that may result from the implementation of the Proposed Action. Other resources or uses of the human environment that have been considered for this EA are listed in Table 4. Resources or uses that may be affected by the Proposed Action are analyzed in this chapter.

**Table 4: Resources or Uses Other Than Elements Associated with Supplemental Authorities**

Other Resources	Not Present	Present/Not Affected	Present/May be Affected	Rationale
Grazing Management		X		See Section 3.8.
Land Use Authorization	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Minerals			X	See Section 3.9.
Paleontological Resources	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Recreation		X		See Section 3.10.
Socio-Economic Values			X	See Section 3.11.
Soils			X	See Section 3.12.
Special Status			X	See Section 3.15.

Other Resources	Not Present	Present/Not Affected	Present/May be Affected	Rationale
Species				
Vegetation			X	See Section 3.13.
Visual Resources		X		See Section 3.14.
Wild Horses and Burros	X			This element is not present within the Proposed Project Area or vicinity and is not further analyzed in this EA.
Wildlife			X	See Section 3.15.

## 3.1 Air Quality

### 3.1.1 Affected Environment

The Nevada Division of Environmental Protection - Bureau of Air Pollution Control (BAPC) is the agency in the State of Nevada that has been delegated the responsibility for implementing a State Implementation Plan (SIP) (excluding Washoe and Clark Counties, which have their own SIP). Included in a SIP are the State of Nevada air quality permit programs (NAC 445B.001 through 445B.3791, inclusive). Also part of a SIP is the Nevada State Ambient Air Quality Standards which are generally identical to the National Ambient Air Quality Standards (NAAQS), with the exception of the following: (a) an additional standard for carbon monoxide in areas with an elevation in excess of 5,000 feet above mean sea level (amsl); (b) a hydrogen sulfide standard; and (c) a violation of state standard occurs with the first annual exceedance of an ambient standard, while federal standards are generally not violated until the second annual exceedance. In addition to establishing the Nevada State Ambient Air Quality Standards, the BAPC is responsible for permit and enforcement activities throughout the State of Nevada (except Clark and Washoe Counties).

The Project Area is located in the unclassified Lower Reese River Valley (hydrographic basin 59) within the Great Basin Hydrographic Watershed Boundary, Humboldt River Basin Hydrographic Region (Region 4) as shown on Figure 5, which is considered in attainment relative to the federal air quality standards. The existing air quality is typical of largely undeveloped regions of the western United States with limited sources of pollutants.

According to the BLM's Instruction Memorandum No. 2008-171, "Guidance on Incorporating Climate Change into Planning and NEPA Documents", dated August 19 2008, climate change considerations should be acknowledged in EA documents.

Several activities contribute to the phenomena of climate change, including emissions of greenhouse gasses (GHGs) especially carbon dioxide and methane from fossil fuel development, large wildfires, and activities using combustion engines; changes to the natural carbon cycle; and changes to radiative forces and reflectivity (albedo). Current emissions within the vicinity of the Project Area include vehicle combustion emissions, fugitive dust from travel on unimproved roads and earth works, ranch activities, and wildland fires. Emissions of pollutants are generally expected to be low due to the limited number of sources in the vicinity of the Project Area.

### 3.1.2 Environmental Consequences

#### Proposed Action

Travel on dirt access roads and drilling activities within the Project Area have the potential to create fugitive dust and vehicle emissions. Exploration activities would be operated under a required Surface Area Disturbance permit from the NDEP-BAPC, and fugitive dust would be controlled by minimizing surface disturbance and the utilization of other environmental protection measures as described in Section 2.1.12.

Potential temporary impacts to air resources would cease once exploration activities and reclamation are completed and revegetation has been successful. Impacts to air quality would be minimal and short-term, and are not analyzed further in this EA.

Project activities would contribute to the release of combustion-related GHGs and temporary changes to the carbon cycle from to the removal of vegetation. Existing climate prediction models are global in nature and not at the appropriate scale to estimate potential impacts of climate change within the Humboldt River Basin Hydrographic Region. Due to the nature and scale of the Proposed Action, effects on climate change are not further analyzed in this EA.

### **No Action Alternative**

Under this alternative the Proposed Action would not be approved, and the proposed exploration activities would not take place. No further land disturbance would take place beyond those already permitted to occur in the Project Area. The existing disturbance area would not be reclaimed as under the Proposed Action and would remain as a possible fugitive dust source.

## **3.2 Cultural/Historical Resources**

### **3.2.1 Affected Environment**

The project area lies in the north-central region of the Great Basin. Inhabitants have occupied the region, with varying degrees of intensity, for the past 10,000-12,000 years during the Paleoarchaic (12,000-7,000 before Christ [B.C.]), Archaic (7000 B.C.-Anno Domini [A.D.] 700), Late Prehistoric (A.D. 700-1300) and Protohistoric (A.D. 1300-1850+) periods. Information about the early period of the north-central Great Basin is typically derived from excavations of caves and rock shelters, well-sheltered environments that provide data regarding temporal placement, tool typologies, and subsistence practices. The Historic Period generally began in northeastern Nevada with the first Euroamerican fur trapping expeditions into the area in the early 1800s. Peter Skene Ogden of the Hudson's Bay Company was one of the first documented trappers to enter Elko County in 1825. In 1845, Captain John C. Fremont led the first U.S. government sponsored survey of northern Nevada. Little evidence of these early exploratory endeavors remains, but their efforts were instrumental in the future settlement of the region. Many others passed through northeastern Nevada in the ensuing decades. Known historic sites in the region include a variety of trash scatters and ranching-related features as well as mines and historic resources in the area predominantly of mining and mineral exploration sites as well as trash scatters, trash dumps, and ranching-related sites and structures (e.g., corrals and stock ponds).

A Class III cultural resource survey was conducted for the Project Area during May 2011 by P-III Associates, Inc. (P-III 2011) and during August 2012 (P-III 2012). The BLM and the State Historic Preservation Office (SHPO) have completed their review of the reports. Several isolated finds were documented. In summary, no unevaluated or NRHP-eligible sites were found.

### **3.2.2 Environmental Consequences**

#### **Proposed Action**

Based on the results of the Class III cultural surveys no NRHP-eligible sites are known to be located within the Project Area (P-III 2011 and 2012). As stated in Section 2.1.12, unevaluated or NRHP-eligible sites would be avoided, and unevaluated sites would be evaluated by a qualified archeologist. If the site meets eligibility criteria, a data recovery plan or appropriate mitigation would be completed. If the site does not meet eligibility criteria, no further cultural work would be performed. Therefore, impacts to cultural resources are not anticipated.

## **No Action Alternative**

Under the No Action Alternative, no impacts to cultural resources would occur from exploration activities. Previously mapped eligible or unevaluated cultural sites would be avoided as specified in the Decision Memo issued by the BLM for Notice NVN-089501.

## **3.3 Native American Religious Concerns**

### **3.3.1 Affected Environment**

Located within the traditional territory of the Western Shoshone, the Mount Lewis Field Office administrative boundary contains spiritual, traditional, and cultural resources, sites, and social practices that aid in maintaining and strengthening social, cultural, and spiritual integrity of the tribes. Recognized tribes with known interests near the Project Area are the Te-Moak Tribe of the Western Shoshone Battle Mountain Bands and the Duckwater Shoshone Tribe of the Western Shoshone.

Social activities that continue to define the Native American cultures take place across lands currently administered by the BLM. Some Western Shoshone maintain certain cultural, spiritual, and traditional activities, visit their sacred sites, hunt game, and gather available medicinal and edible plants. Through oral history (the practice of handing down knowledge from the elders to the younger generations), some Western Shoshone continue to maintain a world view similar to that of their ancestors.

Cultural, traditional, and spiritual sites and activities of importance to tribes include, but are not limited to the following: existing antelope traps; certain mountain tops used for vision questing and prayer; medicinal and edible plant gathering locations; prehistoric and historic village sites and gravesites; sites associated with creation stories; hot and cold springs; collection of materials used for basketry and cradle board making; locations of stone tools such as points and grinding stones; chert and obsidian quarries; hunting sites; sweat lodge locations; locations of pine nut ceremonies, traditional gathering, and camping; rocks used for offerings and medicine gathering; tribally identified traditional cultural properties; traditional cultural properties found eligible to the NRHP have included: rock shelters; rock art locations; and lands or resources that are near, within, or bordering current reservation boundaries.

In accordance with the National Historic Preservation Act (P.L. 89-665), the NEPA, the FLPMA (P.L. 94-579), the American Indian Religious Freedom Act (P.L. 95-341), the Native American Graves Protection and Repatriation Act (P.L. 101-601) and Executive Order (EO) 13007, the BLM must provide affected tribes an opportunity to comment and consult on the Proposed Action. The BLM must attempt to limit, reduce, or possibly eliminate negative impacts to Native American traditional/cultural/spiritual sites, activities, and resources.

On April 5 2012 consultation initiation/invitation letters were mailed from the BLM to the Te-Moak Tribe of the Western Shoshone Battle Mountain Band and the Duckwater Shoshone Tribe of the Western Shoshone. Tribal visits were discussed on April 18 and May 24 2012 with the Duckwater Shoshone Tribe which identified that the Project Area was located more on the Te-Moak Tribe of the Western Shoshone Battle Mountain Band area. Emails were sent to the Battle Mountain Band and to the Te-Moak Tribe of the Western Shoshone on June 13 2012 requesting to verify if the letters had been received. At the time this EA was prepared, the BLM continues to provide opportunities for participation and input although no feedback regarding potential effects of the Proposed Action had been received.

### **3.3.2 Environmental Consequences**

#### **Proposed Action**

Various tribes and bands of the Western Shoshone have stated that federal projects and land actions can have widespread effects to their culture and religion as they consider the landscape as sacred and as a provider. Various locations throughout the Mount Lewis Field Office administrative area host certain traditional,

spiritual, and cultural use activities today, as they did in the past. No traditional cultural properties are known to exist within the vicinity of the Project Area. The BLM continues to solicit input from local tribal entities.

For this Proposed Action, the BLM has committed to avoiding those eligible and unevaluated archaeological sites discovered and documented during cultural resources inventories as described in Section 2.1.12. The BLM Cultural Resource Specialists, accompanied by designated tribal observers, may periodically visit identified cultural resource sites within or near the Project Area. Native American consultation and monitoring by the BLM and Tribal Cultural Resource Specialists may occur throughout the life of the Project.

As described in Section 2.1.12, the proponent would be responsible for ensuring that employees, contractors, or others associated with the Project do not damage, destroy, or vandalize surface archaeological, historical, or vertebrate paleontological sites or the artifacts/fossils within them. If human remains/burials or any previously unidentified cultural (archaeological or historical) resources or vertebrate paleontological resources are discovered while conducting activities related to the Proposed Action, the proponent would immediately cease activities within 300 feet of the discovery, ensure the discovery is appropriately protected, and immediately notify the BLM by telephone, followed with written confirmation. Work would not resume, and the discovery would be protected until the BLM Authorized Officer issues a notice to proceed.

### **No Action Alternative**

Under the No Action Alternative activities described for the Proposed Action would not occur. Previously authorized activities in the area for which the BLM has undergone consultation with tribal entities would continue to occur. No impacts to Native American Religious Concerns would result from the No Action Alternative.

## **3.4 Noxious Weeds/Invasive Non-native Species**

### **3.4.1 Affected Environment**

The BLM defines a noxious weed as, “a plant that interferes with management objectives for a given area of land at a given point in time”. An invasive species is defined as a non-native or alien plant or animal that has entered into an ecosystem. Invasive species are likely to cause economic harm or harm to human health (Executive Order 13112, February 1999). Noxious weeds, invasive, and non-native species are highly competitive, aggressive, and easily spread. The BLM has developed an Integrated *Weed Management Plan* for the entire Battle Mountain District (BLM 2008). In addition, the BLM follows all federal noxious and invasive weed laws, Executive Order 11312 (Prevention and Control of Invasive Species), various BLM manuals, and Nevada Revised Statutes and NAC Chapter 555 stipulations.

Noxious weeds and invasive, non-native species were addressed in the *Pleasant View Exploration Project Baseline Survey* (SRK 2012b). Field investigations were carried out during June 2011. Noxious weeds and invasive, non-native species found in the Project Area include cheatgrass (*Bromus tectorum*), hoary cress (*Cardaria draba*), and tamarisk (salt cedar) (*Tamarix* sp.).

Hoary cress and tamarisk are both listed as category C noxious weeds under NAC 555.010 which are “weeds currently established and generally widespread in many counties of the state; actively eradicated from nursery stock dealer premises; abatement at the discretion of the state quarantine officer”. Hoary cress was found along the access road in a stand measuring 40 by 60 feet with approximately five percent cover. One six-foot tall tamarisk was found along the access road, and approximately 20 eight- to ten-foot tall tamarisks were found at the Main Pit. These locations are shown on Figure 6.

Cheatgrass is currently not listed as a Nevada state noxious weed although it is widely known as a non-native, invasive species. Cheatgrass is pervasive across the site and varies in density from sparse to very dense, with dense populations occurring adjacent to roads and along previously disturbed or burned areas (SRK 2012b).

## 3.4.2 Environmental Consequences

### Proposed Action

Under the Proposed Action up to 19.4 acres of previously undisturbed land may be disturbed, equaling approximately three percent of the Project Area. New surface disturbances within the Project Area would increase the potential for the establishment and spread of noxious weeds and invasive non-native species by providing a suitable colonization area void of native vegetation. The movement of equipment and people throughout the Project Area and to outside areas could also result in the movement of weed seeds to and within the site.

The establishment and spread of these species would be minimized through the implementation of environmental protection measures outlined in Section 2.1.12 including but not limited to keeping new surface disturbances to the minimum required for a safe and effective working environment, washing equipment to prevent transfer of seeds, use of certified weed-free hay and straw, and reclaiming disturbed areas at the earliest time practical using a BLM-approved certified noxious weed-free seed mix. Upon completion of exploration activities, the proponent would also reclaim areas disturbed under the Proposed Action as well as approximately 17.4 acres (approximately two percent of the Project Area) of existing unreclaimed drill roads and pads left by previous operators. The potential spread of noxious weeds and non-native invasive species would be limited to relatively small and primarily linear features within the Project Area. Impacts related to the Proposed Action are determined to be short-term, pending successful reclamation, and minimal.

### No Action Alternative

Under the No Action Alternative the surface disturbances proposed under the Proposed Action would not occur although other previously permitted uses including the notice-level exploration activities involving up to 4.54 acres of disturbance would continue to occur. No Project-related increased potential for the spread or establishment of noxious weeds or invasive non-native species would occur. Reclamation of the existing approximately 17.4 acres would also not occur under this alternative, leaving those areas in their current state as opposed to regraded and seeded with the proposed BLM-approved certified noxious weed-free seed mix. Impacts related to the No Action Alternative would be minimal.

## 3.5 Riparian/Wetlands

### 3.5.1 Affected Environment

Riparian and wetland vegetation was assessed during field investigations in June 2011 as addressed in the *Pleasant View Exploration Project Baseline Survey* (SRK 2012b). A supplemental visit was made in July 2012 (SRK 2012c). Riparian/wetland areas were identified within or near the Project Area as shown on Figure 6. Species observed in these areas are listed in Appendix A.

An earthen-dam pond is located near the Rock Creek wash crossing the access road which may have been part of a gravel pit. The Rock Creek wash crossing and the earthen-dam pond vegetation consist of a stinging nettle (*Urtica dioica*) community, and the sparse riparian vegetation suggests that the creek flows for a short period during the year. The Main Pit contains a small (0.14 acre) pit pond which supports a riparian and lacustrine wetland cattail (*Typha latifolia*) vegetation community within the pond's edge.

The ephemeral stream channel vegetation located along a channel near the center of the Project Area consists of a basin wildrye (*Leymus cinereus*) creeping wildrye (*Leymus triticoides*)-Utah serviceberry (*Amelanchier utahensis*) community. No running water was observed during the field survey conducted in June 2011, and the presence of only facultative species suggests that the stream flows for short periods during the year. In July 2012 a small stagnant seep area was observed as shown on Figure 6 supporting a few willow (*Salix* sp.) plants. These riparian areas cover approximately two acres (SRK 2012c).

## 3.5.2 Environmental Consequences

### Proposed Action

The proposed drill roads, pads, and other disturbance areas associated with the Proposed Action would not encroach on the identified riparian or wetland vegetation areas. The existing access road currently crosses over a riparian vegetation area near Rock Creek; however, no maintenance would be performed on the road to increase its width or otherwise disturb the adjacent vegetation.

Potential impacts to riparian or wetland areas may include sedimentation from nearby surface disturbances. The proponent would follow the environmental protection measures listed in Section 2.1.12 including seasonally appropriate road use and maintenance, and the use of BMPs such as filter fences or berms to minimize erosion and sedimentation into downgradient areas. Potential impacts related to sedimentation and erosion into riparian or wetland vegetation areas would be temporary, lasting until reclamation and revegetation has been completed. Furthermore, approximately 17.4 acres of existing disturbance (approximately two percent of the Project Area) would be reclaimed under the Proposed Action which would otherwise remain in its unreclaimed state and as a potential sediment source.

### No Action Alternative

Under the No Action alternative no further surface disturbance would occur in the Project Area beyond disturbance areas which already exist or those areas which are permitted for disturbance under Notice NVN 089501. The existing 17.4 acres of unreclaimed disturbance would remain unreclaimed and a potential source of sedimentation to downgradient areas.

## 3.6 Waste – Hazardous/Solid

### 3.6.1 Affected Environment

Regulated petroleum products and hazardous materials used in the Project Area would include fuels and automotive chemicals (e.g., fuel, antifreeze, battery acid, lead tire weights, or catalytic converters) used to operate equipment associated with authorized activities. Non-toxic drilling fluids are utilized in the notice level drilling process. Recreationists may also bring automotive chemicals associated with personal vehicles onto the site. The site is not known to be frequented for illegal dumping.

### 3.6.2 Environmental Consequences

#### Proposed Action

The Proposed Action would incorporate the use of fuels and automotive chemicals as well as non-toxic drilling fluids. The Proposed Action may result in the release of these wastes or materials. Section 2.1.12 of this EA outlines how these wastes and materials would be managed and how a spill would be addressed in the site's Spill Contingency Plan. Herbicides which may be used for weed control would be stored off-site and would be managed and used by a contractor specializing in weed control according to BLM-approved methods. Considering the low volume of these materials and the potential for wastes, impacts related to hazardous and solid wastes would be negligible.

#### No Action Alternative

Under the No Action Alternative the exploration activities described under the Proposed Action would not occur, and the generation of wastes and the use of hazardous materials related to the Proposed Action would not occur. Permitted activities would continue to occur within the Project Area.

## 3.7 Water Quality

### 3.7.1 Affected Environment

The Project Area is located within the Humboldt River Basin Hydrographic Region and the Lower Reese River Valley hydrographic basin (hydrographic basin 59) as shown on Figure 5. Hydrologic conditions of the area would be typical of those found throughout the Great Basin, with aquifer recharge occurring from precipitation at higher altitudes and discharge dominated by evaporation and transpiration. According to the Nevada Division of Water Resources (NDWR), groundwater allocation in the hydrographic area is primarily related to irrigation as well as mining and milling (NDWR 2011a).

Surface water features within the Project Area include two ephemeral drainages which converge within the Project Area in which flow has not been observed, a small seep, and an approximately 0.14 acre pit pond in the Main Pit as shown on Figure 6. The access road also crosses over a portion of Rock Creek near a gravel pit development which exhibited sparse riparian vegetation indicating the ephemeral presence of water. Vegetation associated with these features is discussed in Section 3.5.

Surface water features located in the vicinity but outside of the Project Area include an ephemeral drainage within Slaven Canyon and related springs as shown on Figure 5, as well as a water-filled pit at Bante Mine located approximately 2.5 miles to the northeast of the Project Area as shown on Figure 3.

According to the NDWR well log database, four wells are located within two miles of the Project Area. The well locations and associated well log numbers are shown on Figure 5 and are listed in Table 5 below together with the general well casing elevation (NDWR 2011b). Static water levels of nearby wells and the presence of water in the Main Pit within the Project Area give a general indication of depth to groundwater; however, the groundwater gradient may change depending on overlying topography and geologic structural controls. Groundwater elevations have not been accurately defined throughout the Project Area.

**Table 5: NDWR Well Log Information**

Well Log Number	Elevation (feet amsl) (from topographic map)	Static Water Level (feet below ground surface)
97172	4,760	35
98053	4,840	22
25897	5,500	65
25898	5,660	35

### 3.7.2 Environmental Consequences

#### Proposed Action

The Proposed Action would involve disturbing approximately 19.4 acres of previously undisturbed land, approximately three percent of the Project Area. This disturbance would increase the potential for sedimentation in downgradient water ways. The presence of equipment and personnel would also increase the potential for the release of hazardous, regulated materials, and drilling fluids. Some drill holes may also intersect the groundwater table.

The proponent would follow the applicant-committed environmental protection measures described in Section 2.1.12 to minimize these potential impacts to surface waters. The potential impacts would be minimal and temporary, lasting only until exploration roads and drill pads are successfully reclaimed and revegetated. Under the Proposed Action the approximately 17.4 acres of previously disturbed land would be included in the revegetation effort. Impacts to ground water would be minimal as drill holes would be plugged in accordance with NAC 534.4371. Considering the implementation of the environmental protection measures, and the sparse occurrence of surface water resources within the Project Area, impacts to water quality are considered to be short-term and minimal.

## **No Action Alternative**

Under the No Action Alternative no increase would occur to surface disturbance within the Project Area beyond what currently exists or what has already been permitted. No additional drill holes would be drilled beyond those already permitted. Furthermore, the existing 17.4 acres of existing disturbance (approximately two percent of the Project Area) which has not been reclaimed would remain unreclaimed, leaving it as a potential source of sedimentation to downgradient waterways. Impacts from the No Action Alternative would be minimal.

## **3.8 Grazing Management**

### **3.8.1 Affected Environment**

The Project Area is located within the Argenta grazing allotment which covers approximately 331,500 acres of land to the southeast of Battle Mountain, of which approximately 122,370 acres are managed by the BLM. The Argenta grazing allotment is shown on Figure 7. According to the Shoshone-Eureka Rangeland Program Summary the Argenta grazing allotment is in the “Improve” selective management category. Long-term vegetation ecological condition objectives called for a stop to downward trends on 18,354 acres and management for upward trends on 21,844 acres. The program summary also called for improvements to riparian habitat including riparian areas along Rock Creek. At the time the summary was written, big game animal unit months (AUMs) were measured to be 1,738 with a long term objective to support 2,462 AUMs as well as to maintain or enhance Greater Sage-grouse strutting and nesting habitat (BLM 1988).

### **3.8.2 Environmental Consequences**

#### **Proposed Action**

Under the Proposed Action approximately 19.4 acres of previously undisturbed land would be disturbed for the construction of drill roads, pads, and ancillary facilities. The BLM Rangeland Management Specialist determined that the loss of vegetation and eventual change in vegetation communities following revegetation would not impact grazing in the area. Therefore, this resource is not further analyzed in this EA.

#### **No Action Alternative**

Further disturbance would not occur under the No Action Alternative besides disturbances already approved by the BLM. No impacts to grazing would be associated with the No Action Alternative.

## **3.9 Minerals**

### **3.9.1 Affected Environment**

The Project Area is located on alluvial fans of the Reese River Valley and foothills of the Shoshone Range. Soils cover a majority of the Project Area while bedrock is exposed on some ridge tops and slopes. The barite deposit is of bedded character found within the Devonian Slaven Chert formation. Chert and argillite are the principal rock types found in this formation although limestone is also present. Some folding and faulting has been observed in this formation, as well as some alteration, primarily along fractures and bedding planes.

### **3.9.2 Environmental Consequences**

#### **Proposed Action**

The Project involves exploration-based activities and would not involve the removal of large volumes of earth or mineral resources. Core samples of drill rock or rock chips would be removed and sampled. The barite stockpile which would be removed and transferred to the Dunphy plant has already been extracted by

previous operators and is located on the surface. No impacts to mineral resources from the Proposed Action are projected; therefore, mineral resources are not further analyzed in this EA.

### **No Action Alternative**

Potential barite reserves within the Project Area would remain largely uninvestigated under the No Action Alternative. The existing barite stockpile would remain in place. No impacts to mineral resources would occur under this alternative.

## **3.10 Recreation**

### **3.10.1 Affected Environment**

Recreational uses of public land in the Project Area and vicinity consist of dispersed activities such as hunting, rock hounding, and off-road vehicle travel. No developed campgrounds or recreation areas are located in the vicinity of the Project.

### **3.10.2 Environmental Consequences**

#### **Proposed Action**

Under the Proposed Action there would be a temporary increase in roads throughout the Project Area due to the construction of drill roads and pads. Some roads and pads could be temporarily blocked by the presence of drilling equipment, although the main access roads through the site would remain open. Upon completion of exploration activity, the roads and pads, including existing unreclaimed drill roads and pads, would be regraded and reclaimed. Main access roads would remain open. Recreational opportunities and activities within the Project Area would not be affected by the Proposed Action. This resource is not further analyzed in this EA.

#### **No Action Alternative**

Under the No Action Alternative no additional roads or pads would be constructed, and access to the area would remain unchanged unless altered by a previously permitted activity or natural event. Existing unreclaimed drill roads and pads would remain unreclaimed. Recreation would remain unaffected.

## **3.11 Socio-Economic Values**

### **3.11.1 Affected Environment**

The Project is located in Lander County, Nevada, approximately 14 miles southeast of Battle Mountain. Lander County encompasses approximately 5,500 square miles. The total population of Lander County is estimated to be approximately 5,800 in 2010 with the majority of the county's population living in the town of Battle Mountain which is estimated to have a population of approximately 3,600. Battle Mountain provides a variety of retail, restaurant, and lodging services as well as recreational and government facilities. The median household income in Lander County was approximately \$67,000 in 2010 with the majority of household incomes derived from mining-related industries and services. The unemployment rate of the county was 5.7 percent in as of July 2012 (Nevada Department of Employment, Training, and Rehabilitation 2012)( compared with the Nevada state unemployment rate of 11.6 percent in June 2012 (Bureau of Labor Statistics 2012).

### 3.11.2 Environmental Consequences

#### Proposed Action

Approximately four individuals per crew would be contracted or employed to conduct exploration activities at the site at any given time. These personnel would include a geologist, a driller, and approximately two drill helpers per drill rig as described in Section 2.2.7. Personnel would be either hired locally or would be brought in for the Project and would stay in motels in Battle Mountain. Such personnel would be temporary and would create a minor and temporary demand for additional public or private services. Support for local businesses through the purchasing of goods and services would be minor. Impacts to socio-economics would be short term and beneficial, although negligibly small. Impacts to this resource are not further assessed in this EA.

#### No Action Alternative

Under the No Action Alternative, ongoing mineral exploration activities currently permitted in the Project Area would continue to occur. The increase in site personnel and short-term temporary effects related to increased local business for goods and services associated with the Proposed Action would not occur.

### 3.12 Soils

#### 3.12.1 Affected Environment

The soil types in the Project Area are typical of those found throughout this portion of northern Nevada. According to Natural Resources Conservation Service (NRCS) data, the eight soil associations summarized in Table 6 are present within the Project Area including a portion of the access road before its intersection with the maintained Hilltop Road (NRCS 1992). The location of the soil associations are shown on Figure 8.

**Table 6: Soil Characteristics**

Map Unit Symbol	Soil Association	Depth to Restrictive Layer (Inches)	Available Water Capacity (Inches)
171	Beoska silt loam, two to eight percent slopes	>80	Moderate 8.8
290	Creemon silt loam, zero to two percent slopes	>80	High 10.8
482	Humdun-Havington-Bucan	20-60 (some >80)	Very Low to Moderate 2.1 - 9.0
1163	Whirlo silt loam, two to four percent slopes	>80	Low 5.5
1263	Graley-Loncan-Bregar	5-38	Very Low to Low 0.9 - 3.2
1600	Dumps and Pits, mine	N/A	N/A
1680	Zineb gravelly loam, two to eight percent slopes	>80	Low 5.0
3071	Allor-Wieland	>80	Low 5.8

### 3.12.2 Environmental Consequences

#### Proposed Action

Surface disturbance associated with the Proposed Action would impact up to 19.4 acres of previously undisturbed soils, or approximately three percent of the Project Area. Soils would be salvaged where possible

for subsequent use during reclamation; soil stockpiles and berms would be seeded if not replaced after one year. Disturbance would be dispersed throughout the Project Area and would be reclaimed and revegetated after the completion of exploration activities. Approximately 17.4 acres of previously disturbed and unreclaimed areas (approximately two percent of the Project Area) would be reclaimed at the Project end as described in Section 2.1.12.

Exploration activities associated with the Proposed Action would increase the wind and water erosion potential of disturbed soil. This increased potential would remain until reclamation is successfully completed and vegetation established. Impacts to soils would also include the mixing of soil horizons. Potential impacts to soils would be reduced by the environmental protection measures incorporated in the Project design as described in Section 2.1.12. Active soil loss resulting from to the Proposed Action would be temporary and minimal, although the soil lost to erosion during the ongoing Project activities would be permanent.

## No Action Alternative

Under the No Action Alternative, the described construction of drill roads, pads, and ancillary facilities would not occur. Previously approved activities within the Project Area would continue to occur as permitted. There would be no increase to soil loss through wind or water erosion. However, the previously disturbed and unreclaimed 17.4 acres would not be reclaimed, allowing for continued soil loss as long as natural vegetation establishment does not occur on these areas.

## 3.13 Vegetation

### 3.13.1 Affected Environment

Biologists conducted meandering pedestrian surveys of the Project Area for the vegetation survey including an approximately 50-foot wide corridor along the access road. Observations, including a list of species encountered, were collected. Further mapping was performed using aerial surveys as described in the *Pleasant View Exploration Project Baseline Survey* (SRK 2012b).

Vegetation within the Project Area consists of both upland and wetland/riparian communities. Both undisturbed and disturbed areas are present as well, with disturbances having been caused primarily by mining, exploration, and wildland fires. Wetland and riparian communities are discussed in Section 3.5. Upland vegetation can be divided into the following areas, although these categories are not exclusive. The vegetation areas are shown on Figure 6, and a complete list of species observed in each area is included in Appendix A.

- Burn Area 1 vegetation: big sagebrush (*Artemisia tridentata*)-rabbitbrush (*Chrysothamnus* sp.) - bluegrass (*Poa* sp.) -bottlebrush squirreltail (*Elymus elemoides*) community dominated by extensive, dense stands of cheatgrass;<sup>1</sup>
- Burn Area 3 vegetation: rabbitbrush-bottlebrush squirreltail community, dominated by extensive, dense stands of cheatgrass;
- Access Road Burn area vegetation: rabbitbrush-cheatgrass community;
- Mining Area vegetation: big sagebrush-rabbitbrush-bluegrass-bottlebrush squirreltail community;
- The Access Road area: big sagebrush-greasewood (*Sarcobatus velutinus*)-rabbitbrush community; and
- The Main area: big sagebrush-rabbitbrush-bluegrass-bottlebrush squirreltail community.

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<sup>1</sup> Burn Area 2 was found to be located outside of the Project Area.

### 3.13.2 Environmental Consequences

#### Proposed Action

The Proposed Action includes the removal of vegetation on up to 19.4 acres of previously undisturbed land with a majority of this proposed disturbance occurring in the big sagebrush-rabbitbrush-bluegrass-bottlebrush squirreltail vegetation community described under the “Mining Area” listed above. Disturbance to 4.5 acres currently approved under notice NVN-089501 would also be incorporated into the Proposed Action and would also be located in this vegetation area.

HES would follow the applicant-committed environmental practices outlined in Section 2.1.12 to minimize impacts to vegetation. Most disturbances would be linear in nature. Project-related disturbances would be reclaimed and revegetated at the completion of exploration activities. Furthermore, the approximately 17.4 acres of existing unreclaimed disturbance would be reclaimed. Revegetation is anticipated to take three to five years after seeding to achieve success. The successive reclamation vegetation community would differ from the surrounding areas but colonization from adjacent plant communities is anticipated to occur, making impacts to the larger vegetative communities temporary and minor.

#### No Action Alternative

Disturbance of up to 19.4 acres of existing vegetation would not occur under the No Action Alternative while the formerly approved 4.5 acre disturbance related to notice NVN-089501 would still occur. Under the No Action Alternative, reclamation would not occur on the previously disturbed and unreclaimed 17.4 acres of drill roads and pads. However, these areas would likely be colonized over time by adjacent native vegetation communities. Impacts related to the No Action Alternative would be minimal

### 3.14 Visual Resources

#### 3.14.1 Affected Environment

The Visual Resource Management (VRM) system designates classes for BLM-administered lands in order to identify and evaluate scenic values to determine the appropriate levels of management during land use planning. Each management class portrays the relative value of the visual resources and serves as a tool that describes the visual management objectives (BLM 1986).

The Project Area is located in an area designated as VRM Class IV. The goals of this class are to:

“...provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements” (BLM Manual H-8410-1).

#### 3.14.2 Environmental Consequences

##### Proposed Action

The Proposed Action would result in short-term visual impacts within the Project Area. Linear disturbances from drill roads would cause contrasts with the natural landscape. Disturbance of vegetation would cause temporary color contrasts. With successful reclamation of exploration roads and revegetation, long-term visual impacts would be minimized. Reclamation and revegetation of previously disturbed and unreclaimed areas would result in an overall decrease in visual impacts in the long term. The effects of the Proposed Action on visual resources would be consistent with BLM prescribed Class IV VRM objectives. Therefore, this resource is not further analyzed in this EA.

## No Action Alternative

Under the No Action Alternative, further impacts to visual resources would not occur, and the existing disturbed areas would remain disturbed and in contrast with the natural landscape.

## 3.15 Wildlife including Special Status Species

### 3.15.1 Affected Environment

Wildlife and wildlife habitat occurring in the Project Area is documented in the *Pleasant View Exploration Project Baseline Survey* including observations from field work completed in 2011 (SRK 2012b). Species which have the potential to occur within the Project Area, including special status species, were identified by the BLM, NDOW, USFWS, and the Nevada Natural Heritage Program (NNHP) (SRK 2012b). A list of species with the potential to occur within the Project Area is located in Appendix B.

### Special Status Species

#### Pygmy Rabbits

The NNHP identified pygmy rabbits (*Brachylagus idahoensis*), a Nevada BLM sensitive species, to have the potential to exist within the Project Area although no at risk taxa have been recorded within the Project Area. The northern portion of the Project Area in T31N, R46E, Section 34 was found to support sagebrush, and, although the area appeared to not be pygmy rabbit habitat, a detailed pygmy rabbit survey was conducted. Pygmy rabbits, their sign, or burrows were not observed during field surveys (SRK 2012b).

#### Birds of Prey including Bald and Golden Eagles

The NDOW identified Burrowing Owls (*Athene cunicularia*), Ferruginous Hawks (*Buteo regalis*), Northern Goshawks (*Accipiter gentilis*), Peregrine Falcons (*Falco peregrinus*), Short-eared Owls (*Asio flammeus*), and Swainson's Hawks (*Buteo swainsoni*) as NDOW species of special concern and target species for conservation as outlined by the *Nevada Wildlife Action Plan* (NDOW 2006) as known to exist in the vicinity of the Project Area. Although none of these species were observed during the field surveys, one falcon nest was observed as discussed later (SRK 2012b).

The NDOW identified Golden Eagles (*Aquila chrysaetos*), a state-protected species, as a species known to exist in the vicinity of the Project Area. Three Golden Eagle nest sites were identified by NDOW within a ten-mile radius of the Project Area with the closest of these located approximately six miles from the Project Area. These nest sites were not visited during baseline field surveys, and no individuals were observed during baseline field surveys within the Project Area (SRK 2012b). However, potential forage habitat does exist within the Project Area.

#### Greater Sage-grouse

The NDOW and the USFWS identified Greater Sage-grouse (*Centrocercus urophasianus*), a Candidate Species, as a species known to exist in the vicinity of the Project Area. According to NDOW and BLM data, most of the Project Area is located within "low value habitat/transitional range" while the eastern portion of the Project Area is mapped as "unsuitable habitat" as shown on Figure 9 (NDOW 2012). The Project Area is located outside of the currently delineated preliminary priority habitats.

Two known leks, Horse Heaven 1, and Horse Heaven 2, are located in the vicinity of the Project Area. Horse Heaven 1 is located approximately 2.5 to 3.5 miles northeast of the Project Area in T31N, R47E, Section 32. This lek was considered active when last surveyed in 2007. Horse Heaven 2 is located approximately one to two miles southeast of the Project Area in T30N, R47E, Section 7. This lek was last surveyed in 2004, and the status is considered unknown (NDOW 2011). Greater Sage-grouse habitat and observed Greater Sage-grouse sign locations are shown on Figure 9 (SRK 2012b).

## Migratory Birds

"Migratory bird" means any bird listed in 50 CFR 10.13. All native birds found commonly in the United States, with the exception of native resident game birds, are protected under the Migratory Bird Treaty Act (MBTA). The MBTA prohibits taking of migratory birds, their parts, nests, eggs, and nestlings. EO 13186, signed January 10 2001, directs federal agencies to protect migratory birds by integrating bird conservation principles, measures, and practices.

Avian species observed during the 2011 field surveys and not discussed elsewhere included (SRK 2012b):

- Loggerheaded Shrike (*Lanius ludovicianus*);
- Sage Sparrow (*Amphispiza belli*);
- Horned Lark (*Eremophila alpestris*);
- Western Meadowlark (*Sturnella neglecta*);
- Killdeer (*Charadrius vociferus*);
- Red-winged Blackbird (*Agelaius phoeniceus*);
- Mourning Dove (*Zenaida macroura*);
- Common Raven (*Corvus corax*);
- Black-billed Magpie (*Pica hudsonia*); and
- Black-throated Sparrow (*Amphispiza bilineata*).

The locations of the Loggerhead Shrike and the Black-throated Sparrow nests are shown on Figure 10.

## Raptors

NDOW identified several raptor species known to exist in the vicinity of the Project Area including:

- American Kestrel (*Falco sparverius*);
- Barn Owl (*Tyto alba*);
- Burrowing Owl;
- Cooper's Hawk (*Accipiter cooperii*);
- Ferruginous Hawk;
- Golden Eagle;
- Great Horned Owl (*Bubo virginianus*);
- Long-eared Owl (*Asio otus*);
- Merlin (*Falco columbarius*);
- Northern Goshawk (*Accipiter gentilis*);
- Northern Harrier (*Circus cyaneus*);
- Northern Saw-whet Owl (*Aegolius acadicus*);
- Osprey (*Pandion haliaetus*);
- Peregrine Falcon;
- Prairie Falcon (*Falco mexicanus*);
- Red-tailed Hawk (*Buteo jamaicensis*);
- Rough-legged Hawk (*Buteo lagopus*);
- Sharp-shinned Hawk (*Accipiter striatus*);
- Short-eared Owl;
- Swainson's Hawk;
- Turkey Vulture (*Cathartes aura*); and
- Western Screech Owl (*Megascops kennicottii*).

A Prairie Falcon nest site was also identified by the NDOW in the vicinity of the Project Area in T30N, R46E, Section 8. This nest was not located during field surveys. An active falcon nest was located on the Main Pit wall in T30N, R46E, Section 2 as shown in Figure 10. Two adult falcons were observed flying over the pit and nest site but were flying too high for the species to be accurately identified. One Long-eared Owl and nest were observed during the field survey along an existing road as shown on Figure 10 (SRK 2012b).

## Mammals

### Mule Deer

Mule deer (*Odocoileus hemionus*) winter range exists within the majority of the Project Area. The Project Area is within the Shoshone Herd Area. The NDOW reported in 2010 that 1,562 mule deer were observed in the herd area (Units 151, 152, 154, 155; Lander and Western Eureka Counties) with a ratio of 37 bucks per 100 does per 73 fawns was the highest sample ever recorded in this management area; the condition of the herd was reported as continuing to improve. The mule deer population is below carrying capacity but has increased by approximately 13 percent since the previous year (NDOW 2011). Mule deer habitat areas are shown on Figure 10.

Mule deer were not observed during the field survey. However, mule deer dropping and tracks were observed throughout the Project Area (SRK 2012b).

### Pronghorn Antelope

Pronghorn antelope (*Antilocapra americana*) are known to be present throughout the entire Project Area. In 2010 the NDOW reported 1,094 antelope in this area (Units 141, 143, 151-155: Eastern Lander and Eureka Counties) at a ratio of 61 bucks per 100 does per 45 fawns with above-average precipitation over the previous three years being beneficial to the pronghorn antelope in this area (NDOW 2011). Pronghorn antelope year-round habitat exists throughout the Project Area as shown on Figure 10.

Three pronghorn antelope were observed feeding during the field survey in the southern portion of the Project Area as shown on Figure 10, and droppings and tracks were observed throughout the Project Area (SRK 2012b).

### Mountain Lion

Although mountain lions (*Puma concolor*) were not observed during the field survey, scat that appeared to be that of a mountain lion was observed as shown on Figure 10. Mountain lions are likely to exist in the vicinity of the Project Area (SRK 2012b).

### Coyotes

Coyotes (*Canis latrans*) are known to exist from the low desert valleys to the alpine ranges in all habitats where they can find food and shelter. Coyotes are classified as unprotected due to their ability to adapt to the ever changing environment and the coyote's opportunistic nature allowing them to continually increase in population and expand across the landscape (NDOW 2010). Coyote habitat exists throughout the Project Area, and coyote scat was observed during the field survey throughout the Project Area as shown on Figure 10 (SRK 2012b).

### American Badger

American badgers (*Taxidea taxus jacksoni*) prefer open plains and deciduous woodlands but are known to exist in a variety of habitats from the deserts to the arctic-alpine zones (NDOW 2010). Badger habitat exists throughout the Project Area, and burrows were observed during the field surveys throughout the Project Area as shown on Figure 10 (SRK 2012b).

### Black-tailed Jackrabbit

Black-tailed jackrabbit (*Lepus californicus*) exists in extreme environments of the desert and chaparral tending to prefer open areas where they can spend most of the day resting and watching for predators (NDOW 2010). Their habitat is present throughout the Project Area. Black-tailed jackrabbits, their droppings, and scratched out hollows beneath shrubs were observed during the field surveys throughout the Project Area. Jackrabbit sightings are shown on Figure 10 (SRK 2012b).

## **Other Species**

Four species identified by NDOW as being observed in the vicinity of the Project Area not discussed elsewhere in this EA are California Quail (*Callipepla californica*), Chukar (*Alectoris chukar*), Gray Partridge (*Perdix perdix*), and Mallard (*Anas platyrhynchos*). Of these species, Chukar was the only species observed during the field survey (SRK 2012b). However, species may use the Project Area at other times of the year and/or were just not observed or present within the Project Area during the surveys.

The NDOW identified several other species as being observed in the vicinity of the Project Area including Great Basin fence lizard (*Sceloporus occidentalis longipes*), fingernail clam (*Pisidium* sp.), gyro (*Gyro* sp.), marsh snail (*Littoraria irrorata*), physa (*Physa* sp.), pondsnail (*Lymnaeidae* sp.), and springsnail (*Pyrgulopsis* sp.). These species were not observed during field surveys (SRK 2012b).

Long-nosed leopard lizards (*Gambelia wislizenii*) and horned lizards (*Phrynosoma* sp.) were observed throughout the Project Area during the field survey (SRK 2012b).

Appendix B lists additional species which have the potential to occur in the Project Area.

## 3.15.2 Environmental Consequences

### Proposed Action

Potential impacts to wildlife would be minimized by adherence to the applicant-committed environmental protection measures as described in Section 2.1.12. Direct impacts to wildlife would consist of temporary habitat loss and potential disturbance from human activity and noise. Smaller and less mobile animals may suffer direct mortality during land-clearing activities. Up to 19.4 acres of existing wildlife habitat (approximately three percent of the Project Area) would be impacted by surface disturbance associated with exploration activities over a three-year period. Habitat would be restored after the completion of reclamation and successful revegetation, although the plant species composition on reclaimed areas may be different from the original until the areas are colonized by adjacent native vegetation species. Impacts related to human activity and noise would continue until reclamation activities are complete, which is anticipated to take up to four years.

Habitat removal and disturbance may push some species onto adjacent lands, creating more pressure on these adjacent areas. However, given the limited size of the Project and the narrow nature of the disturbance areas, this impact in particular is considered to be negligible.

Reclamation would begin within two years of exploration activity completion. Revegetation is anticipated to take three to five years after the time of seeding to achieve success. Therefore, no long-term impacts to wildlife habitat are likely to occur, and the Proposed Action would have minimal long-term direct impacts on wildlife species. Long-term improvement of habitat could occur through the reclamation and revegetation of the approximately 17.4 acres of existing unreclaimed disturbance areas.

Impacts to pygmy rabbits would not occur since no pygmy rabbits, their sign, or habitat were observed in the Project Area. Impacts to birds of prey including eagles would include the temporary loss of habitat and human presence related disturbance. The eagle nests described above are located outside of the Project Area; no impacts to nests or young are anticipated. Impacts to Greater Sage-grouse would include the short-term removal of primarily low value habitat as well as potential disturbance from the presence of humans in the area.

Considering that breeding bird surveys would be conducted prior to ground clearing activities as described in Section 2.1.12, no impacts to migratory bird nests or young are anticipated. The falcon nest is located on the southern wall of the Main Pit and approximately 175 feet from the nearest proposed drill road or pad. The Long-eared owl nest is located adjacent to an existing road and approximately 40 feet from a proposed drill road. HES would not conduct exploration activities in the vicinity of these nests until the young have fledged as described in Section 2.1.12.

### No Action Alternative

Under the No Action Alternative no increase to the direct or indirect impacts to wildlife or special status species would occur. However, the 17.4 acres of existing and unreclaimed disturbance areas would not be reclaimed. The Project Area would not experience a long-term improvement of these areas to vegetated wildlife habitat until natural vegetation establishment occurs.

## 4 CUMULATIVE EFFECTS

For the purposes of this EA, the cumulative impacts are the sum of all past, present (including proposed actions), and reasonably foreseeable future actions (RFFAs) resulting primarily from mining, commercial activities, and public uses. The purpose of the cumulative analysis in the EA is to evaluate the significance of the Proposed Action's contributions to cumulative impacts. A cumulative impact is defined under federal regulations as follows:

"...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

As required under the NEPA and the regulations implementing NEPA, this Section addresses those cumulative effects on the environmental resources in the Cumulative Effects Study Areas (CESAs), which could result from the implementation of the Proposed Action and No Action Alternative; past actions; present actions; and RFFAs. The extent of the CESA can vary with each resource, based on the geographic or biologic limits of that resource. As a result, the list of projects considered under the cumulative analysis may vary according to the resource being considered. In addition, the length of time for cumulative effects analysis would vary according to the duration of impacts from the Proposed Action on the particular resource.

Environmental consequences of the Proposed Action were evaluated in Section 3 for the various identified resources. Discussed in the following sections are the resources that have the potential to be cumulatively impacted by the Proposed Action within the identified CESA.

Based on the preceding analysis, the Proposed Action would not impact or would negligibly impact the following resources and would therefore not have cumulative impacts. These resources are not discussed further in the cumulative impacts section:

- Air Quality;
- Cultural/Historical;
- Native American Religious Concerns;
- Riparian/Wetlands;
- Wastes- Hazardous and Solid;
- Grazing Management;
- Minerals;
- Recreation;
- Socio-Economic Values; and
- Visual Resources.

For the resources under consideration for this analysis, only one CESA boundary has been identified as shown on Figure 11. This boundary covers approximately 41,400 acres of which approximately 19,800 acres are administered by the BLM and 21,600 acres are privately owned. This area was determined to be of sufficient size for the Proposed Action. The southern, western, and eastern sides are defined by the watershed boundaries of Slaven Canyon and Rock Creek, and the northern boundary is defined by a valley road.

### 4.1 Past and Present Actions

According to LR2000 database records (BLM 2012) and general information sources, past and present actions in the CESA include the following types of activities:

- Utilities rights-of-way (ROWs);

- Communication ROWs;
- Roads and road ROWs;
- Oil and gas ROWs;
- Sand and gravel developments;
- Mineral exploration and mining;
- Livestock grazing , range improvements, and irrigation;
- Chemical noxious weed treatments;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

Approximately 1,417 acres within the CESA, or approximately three percent of the CESA, has been burned in the observable or recorded past, including approximately 315 acres associated with unnamed fires mapped during vegetation surveys, and approximately 1,102 acres from the 1999 Mule Fire as shown on Figure 11.

Closed, expired, and active surface management plans are included in Appendix C along with the approved acreage and acres disturbed and reclaimed related for each action. There are 50 closed surface management plans and seven expired surface management plans with disturbance acreages located either partially or wholly within the CESA boundary. Most of the associated disturbance acreage has been reclaimed, with approximately 19 acres remaining unreclaimed according to LR2000 results.

Currently eight active surface management plans are located either wholly or partially within this boundary, the largest two of which are surface management plans owned and/or operated by Newmont USA Ltd., the Argenta Exploration project and the Mule Canyon Mine. The geographic descriptions of these project locations overlap the CESA boundary slightly on the northeastern edge. Approximately 1,270 acres of unreclaimed disturbance are associated with current surface management plans overlapping the CESA boundary, with much of this disturbance located outside of the designated CESA boundary.

## 4.2 Reasonably Foreseeable Future Actions

Many of the existing and ongoing activities within the CESA can also be considered as RFFAs including the continued use of existing ROWs associated with utilities, communications, and roads. Other RFFAs which can be expected to continue to occur within the CESA include:

- Mineral exploration and mining;
- Livestock grazing;
- Chemical noxious weed treatments;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

Two pending surface management plans are located wholly or partially within the CESA boundary as listed in Appendix C. The pending approved disturbance acreage for these projects totals approximately 78 acres.

## 4.3 Impact Analysis

### 4.3.1 Noxious Weeds and Non-native Invasive Species

#### Past and Present Actions

Activities within the CESA which have or would create surface disturbances have the potential to affect the presence of noxious weeds and non-native invasive species as surface disturbances create potential areas for

weed colonization. Furthermore, activities which involve the movement of equipment, people, or animals throughout the area also have the potential to increase the presence of noxious weeds and non-native invasive species by providing a transportation vector for seeds. Such activities include:

- Use of existing ROWs and their related surface disturbances;
- Sand and gravel developments;
- Mineral exploration and mining;
- Livestock grazing and range improvements;
- Chemical noxious weed treatments;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

While surface disturbing activities increase the opportunity for the establishment for noxious weeds and non-native invasive species, permitted activities on federal lands require that disturbed areas be reclaimed and seeded, thus managing the spread of noxious weeds and non-native invasive species for the long term. Permitted activities on federal lands may even involve weed management plans.

### **Reasonably Foreseeable Future Actions**

RFFAs which may impact noxious weeds and non-native invasive species are again those activities for which surface disturbances and vegetation removal could occur or which involve the movement of equipment, people, or animals throughout the area. RFFAs requiring permitting by the federal government would require provisions for reclamation, as well as the implementation of BMPs and possibly weed management plans. RFFAs potentially effecting noxious weeds and non-native invasive species include:

- Mineral exploration and mining;
- Livestock grazing;
- Chemical noxious weed treatments;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

### **Proposed Action**

The Proposed Action proposes to disturb up to 19.4 acres, which is less than one percent of the CESA. Cumulatively, the past, present, RFFAs, and Proposed Action would result in potential impacts related to the infestation of noxious weeds following the removal of vegetation and land disturbance in localized areas. This impact is not readily quantifiable but would likely be minimal in relation to the CESA size. The only RFFA which could impact a measurably large area of the CESA would be the occurrence of a large wildfire.

Noxious weeds located within the Project Area include hoary cress and tamarisk. Cheatgrass, a non-native and invasive species, was also observed within the Project Area. For the Proposed Action, the applicant would follow environmental protection measures described in Section 2.1.12 to help minimize the spread of noxious weeds and non-native invasive species. The proponent would also reclaim and revegetate not only the proposed disturbance area but also existing disturbance areas within the Project Area. As a result, a minimal incremental impact to noxious weeds and non-native invasive species in the CESA is expected as a result of the Proposed Action.

### **No Action Alternative**

Cumulatively, the past, present, and RFFAs would result in impacts to noxious weeds and non-native invasive species following vegetation removal and soil disturbance in localized areas. These areas would be

limited in nature, and impacts related to these actions would most likely be minimal with the exception of the potential for large wildfires. Impacts from the No Action Alternative would be the lack of reclamation and reseeding on previously disturbed 17.4 acres. This impact would be negligible.

### **4.3.2 Water Quality**

#### **Past and Present Actions**

Activities within the CESA which have or would create surface disturbances have the potential to affect surface water quality of downgradient water bodies. Activities which include drilling or the release of hazardous materials may also have the potential to affect surface and ground water quality. Such activities include:

- Use of existing ROWs and their related surface disturbances;
- Sand and gravel developments;
- Irrigation;
- Mineral exploration and mining;
- Livestock grazing, range improvements;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

Permitted activities are required to undergo assessments for their potential impacts to water quality, and, if necessary, management or mitigation measures to reduce or eliminate these impacts. Such measures may include reclamation, drainage crossing BMPs, siltation and sedimentation BMPs, spill prevention and management measures, and drill hole plugging procedures.

#### **Reasonably Foreseeable Future Actions**

RFFAs which may impact water quality are again those activities for which surface disturbances and vegetation removal could occur or which involve drilling and potential release of pollutants. RFFAs requiring permitting by the federal government would require provisions for the protection of surface and ground water quality including reclamation and other BMPs as described for the past and present actions. RFFAs potentially effecting water quality include:

- Mineral exploration and mining;
- Livestock grazing;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

#### **Proposed Action**

The Proposed Action proposes to disturb up to 19.4 acres, which is less than one percent of the CESA. Cumulatively, the past, present, RFFAs, and the Proposed Action could result in potential impacts to surface water quality due to the removal of vegetation and land disturbance which could increase downgradient sedimentation during precipitation events. Drilling activities and the presence of activity-related chemicals could potentially affect groundwater quality. This potential impact would likely be minimal in relation to the CESA size and the limited connectivity to water bodies located within the CESA. The only RFFA which could impact a measurably large area of the CESA and surface water quality would be a large wildfire.

The applicant would follow environmental protection measures described in Section 2.1.12 to minimize erosion and sedimentation, manage chemicals and spills, and to appropriately plug and close drill holes. HES

would also reclaim and revegetate not only the proposed disturbance areas but also 17.4 acres of existing disturbance within the Project Area. As a result, a short-term minimal incremental impact to water quality within the CESA is expected while long-term effects following reclamation and successful revegetation are not expected.

## **No Action Alternative**

The past, present, and RFFAs would result in cumulative impacts to water quality following vegetation removal and soil disturbance in localized areas as well as potential cumulative impacts related to potential spills and drill holes. These impacts are expected to be limited in nature with the exception of the potential for large wildfires to remove vegetation, causing a potential for sedimentation and erosion.

### **4.3.3 Soils**

#### **Past and Present Actions**

Activities within the CESA which have or would create surface disturbances would affect soil resources through the disturbance of the soil horizons and creating the potential for soil-loss from wind and water erosion. Such activities include:

- Use of existing ROWs and their related surface disturbances;
- Sand and gravel developments;
- Mineral exploration and mining;
- Livestock grazing and range improvements;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

While the disturbance of soil horizons and the loss of soil resulting from erosion can be minimized, lost or mixed soils cannot be recovered. The continuation of soil loss can be stopped through reclamation and successful seeding. Permitted activities on federal lands require that disturbed areas be reclaimed, thus limiting the long-term loss of soils.

#### **Reasonably Foreseeable Future Actions**

RFFAs which may affect soil resources are also activities for which surface disturbances and vegetation removal could occur. RFFAs requiring permitting by the federal government would require provisions for reclamation, as well as the implementation of BMPs to reduce soil loss. RFFAs potentially effecting soil resources include:

- Mineral exploration and mining;
- Livestock grazing;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

#### **Proposed Action**

The Proposed Action proposes to disturb up to 19.4 acres, which is less than one percent of the CESA. Cumulatively, the past, present, RFFAs, and Proposed Action would result in potential impacts related to the soil disturbance and loss following the removal of vegetation and land disturbance in localized areas. This impact is not readily quantifiable but would likely be minimal in relation to the CESA size. The only RFFA which could impact a measurably large area of the CESA would be wildfire.

The proponent would follow environmental protection measures described in Section 2.1.12 to help minimize soil disturbance and soil loss from wind and water erosion. The proponent would also reclaim and revegetate not only the proposed disturbance area but also 17.4 acres of existing disturbance within the Project Area. A minimal incremental impact to soil resources in the CESA is expected.

### **No Action Alternative**

The past, present, and RFFAs which involve land disturbance and vegetation removal would cumulatively result in impacts to soil resources in localized areas. Impacts related to these actions would most likely be minimal with the exception of the potential for large wildfires.

## **4.3.4 Vegetation**

### **Past and Present Actions**

Activities within the CESA which have or would result in the loss or alternation of vegetation include:

- Use of existing ROWs and their related surface disturbances;
- Sand and gravel developments;
- Irrigation;
- Mineral exploration and mining;
- Livestock grazing and range improvements;
- Chemical noxious weed treatments;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

Permitted activities on federal lands require that disturbed areas be reclaimed and revegetated. Permitted activities also require that seed mixes be approved for their use location, and that projects be managed for the control of noxious weeds and non-native invasive species which have the potential to invade and affect native or desired vegetation communities.

### **Reasonably Foreseeable Future Actions**

RFFAs which may impact vegetation are again those activities for which surface disturbances and vegetation removal could occur or which involve activities which could alter the existing vegetation community. RFFAs requiring permitting by the federal government require provisions for the management or reestablishment of vegetation resources including management for appropriate species. RFFAs potentially effecting vegetation include:

- Mineral exploration and mining;
- Livestock grazing;
- Chemical noxious weed treatments;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

### **Proposed Action**

The Proposed Action proposes to disturb up to 19.4 acres, which is less than one percent of the CESA. Cumulatively, the past, present, RFFAs, and Proposed Action would result in potential impacts related to the initial removal of vegetation and a change in vegetation communities resulting from reseeding. This impact

would likely be minimal in relation to the CESA size. The only RFFA which could impact a measurably large area of the CESA would be the occurrence of a wildfire.

For the Proposed Action, the proponent would follow environmental protection measures described in Section 2.1.12 to help minimize the removal of vegetation and successful reseeding with beneficial species. The proponent would also reclaim and revegetate not only the proposed disturbance area but also existing disturbance areas within the Project Area. A minimal incremental impact to vegetation in the CESA is expected.

### **No Action Alternative**

Cumulatively, the past, present, and RFFAs would result in impacts to vegetation following vegetation removal, disturbances, and actions resulting in a vegetation community change. With the exception of the potential for large wildfires in the CESA, these areas would be limited in nature, and impacts related to these actions would most likely be minimal.

## **4.3.5 Wildlife**

### **Past and Present Actions**

Activities within the CESA which have or would involve vegetation change or land disturbance can also affect wildlife habitat including special status species habitat. Activities could also result in the loss of individuals or disturbance of wildlife due to human presence. Such activities include:

- Use of existing ROWs and their related surface disturbances;
- Sand and gravel developments;
- Irrigation;
- Mineral exploration and mining;
- Livestock grazing and range improvements;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

Permitted activities on federal lands require that disturbed areas be reclaimed, thus potentially restoring vegetation communities over the long term and potentially altering the vegetation communities present until native vegetation is reestablished. Permitted activities also require certain measures to protect wildlife species and habitat such as requirements to conduct breeding bird surveys and measures to not disturb special status species and their habitat as applicable.

### **Reasonably Foreseeable Future Actions**

RFFAs which may impact wildlife habitat and individuals are again those activities for which surface disturbances and vegetation change could occur or which involve a change in human presence. RFFAs requiring permitting by the federal government would involve provisions for the management or reestablishment of habitats and the protection of wildlife. RFFAs potentially affecting wildlife and wildlife habitat include:

- Mineral exploration and mining;
- Livestock grazing;
- Wildlife use;
- Wildland fires; and
- Dispersed recreation.

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## **Proposed Action**

The Proposed Action proposes to disturb up to 19.4 acres, which is less than one percent of the CESA. Cumulatively, the past, present, RFFAs, and Proposed Action would result in potential impacts to wildlife resulting from an increase in human presence, potential direct loss of less mobile individuals, and the removal of vegetation with a temporary change in vegetation communities in localized areas until native vegetation is reestablished. This impact would likely be minimal in relation to the CESA size. The only RFFA which could impact a measurably large area of the CESA would be wildfire.

The applicant would follow environmental protection measures described in Section 2.1.12 to minimize potential impacts to wildlife, including reclamation of the disturbed area as well as 17.4 acres of existing disturbance within the Project Area. A minimal incremental impact to wildlife including special status species in the CESA is expected.

## **No Action Alternative**

The past, present, and RFFAs would result in cumulative impacts to wildlife including special status species following disturbances which affect wildlife habitats, increase human presence, and those which could result in a loss of individuals. With the exception of the potential for large wildfires in the CESA, these areas would be limited in nature, and impacts related to these actions would most likely be minimal.

## 5 CONSULTATION AND COORDINATION

This EA was prepared at the direction of the BLM MLFO. The following is a list of individuals responsible for preparation of this EA or individuals contacted for the preparation of this EA.

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Steve Foree	Wildlife
Dorothy Harvey	IT Specialist
Casey Johnson	Grazing, Noxious Weeds and Invasive, Non-native Species, Soils, Vegetation, and Wetlands/Riparian
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Duckwater Shoshone Tribe of the Western Shoshone

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Sierra Harmening	Consultant
Peter Keefe	Senior Consultant
Angel Lino	Consultant
Val Sawyer	Principal Consultant, Senior Reviewer
Carrie Schultz	Environmental Consultant

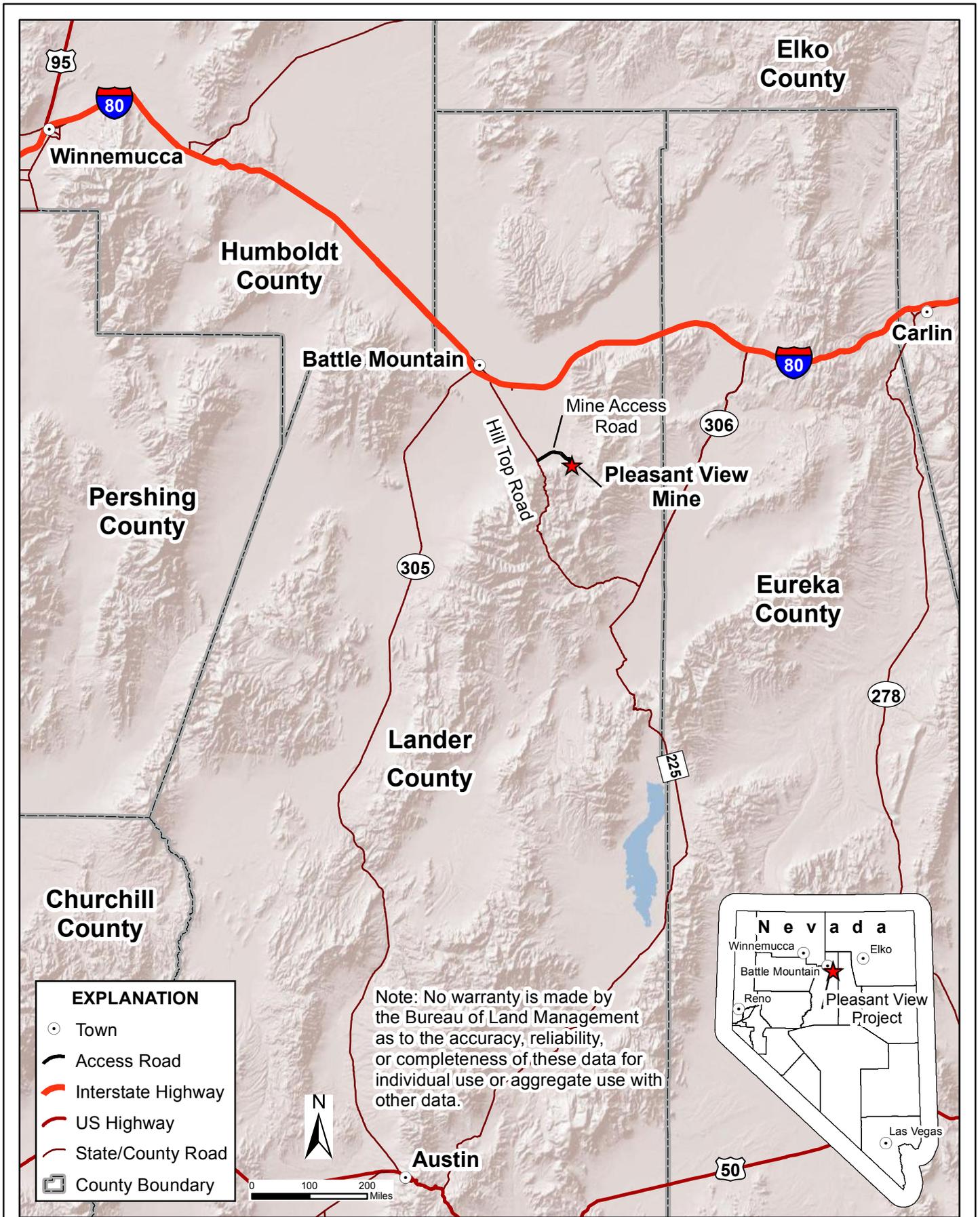
#### Halliburton Energy Services, Inc.

Anita Brown	Geologist, reviewer
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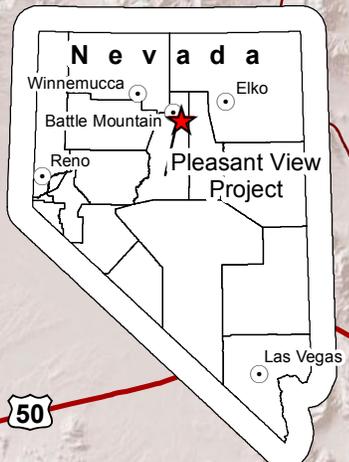
## FIGURES



**EXPLANATION**

- Town
- Access Road
- Interstate Highway
- US Highway
- State/County Road
- County Boundary

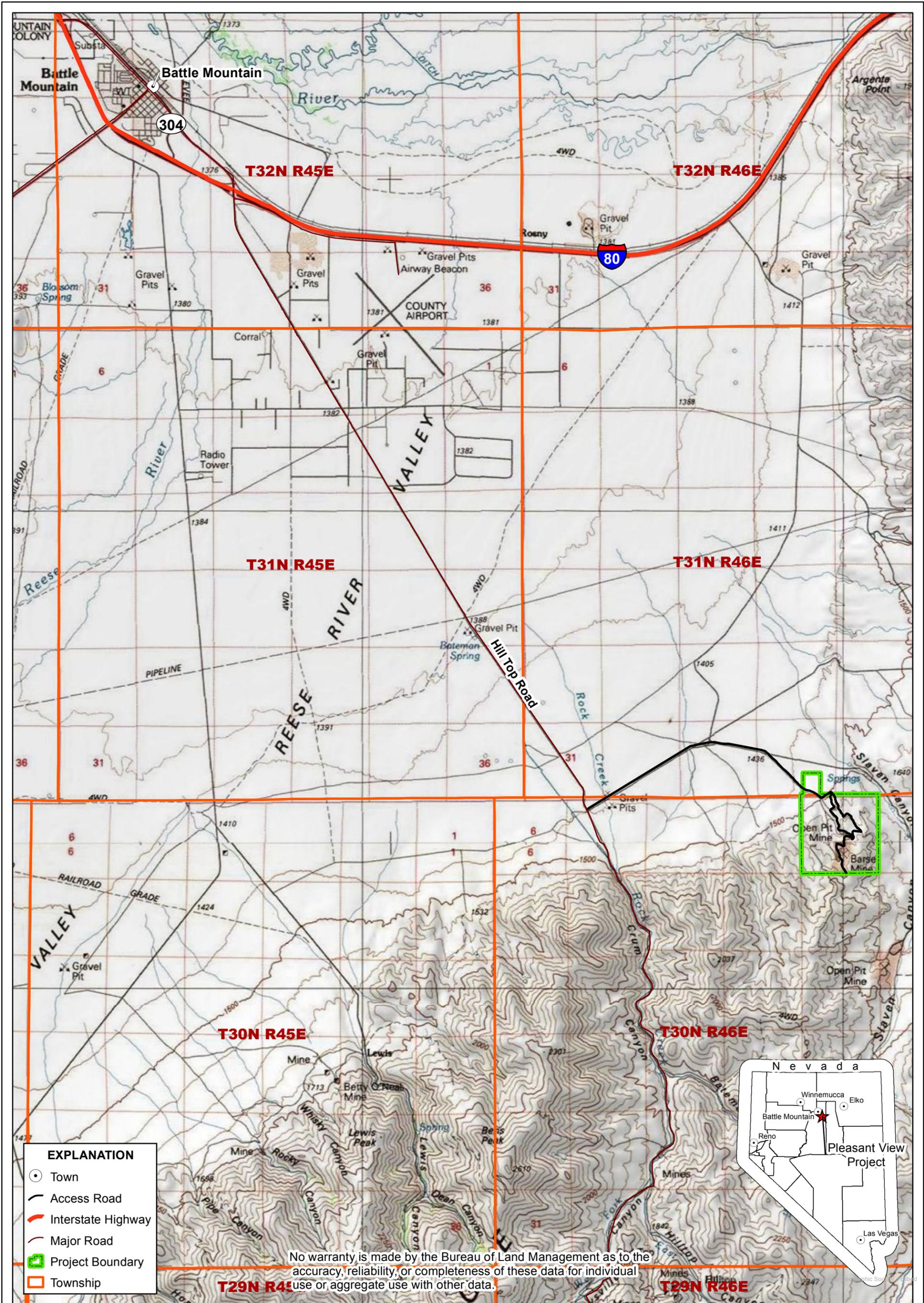
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 PLEASANT VIEW EA**

DRAWING TITLE:		
<b>LOCATION MAP</b>		
DRAWING NO.	<b>FIGURE 1</b>	REVISION NO.
DATE:	<b>10/17/2012</b>	<b>A</b>



EXPLANATION	
	Town
	Access Road
	Interstate Highway
	Major Road
	Project Boundary
	Township

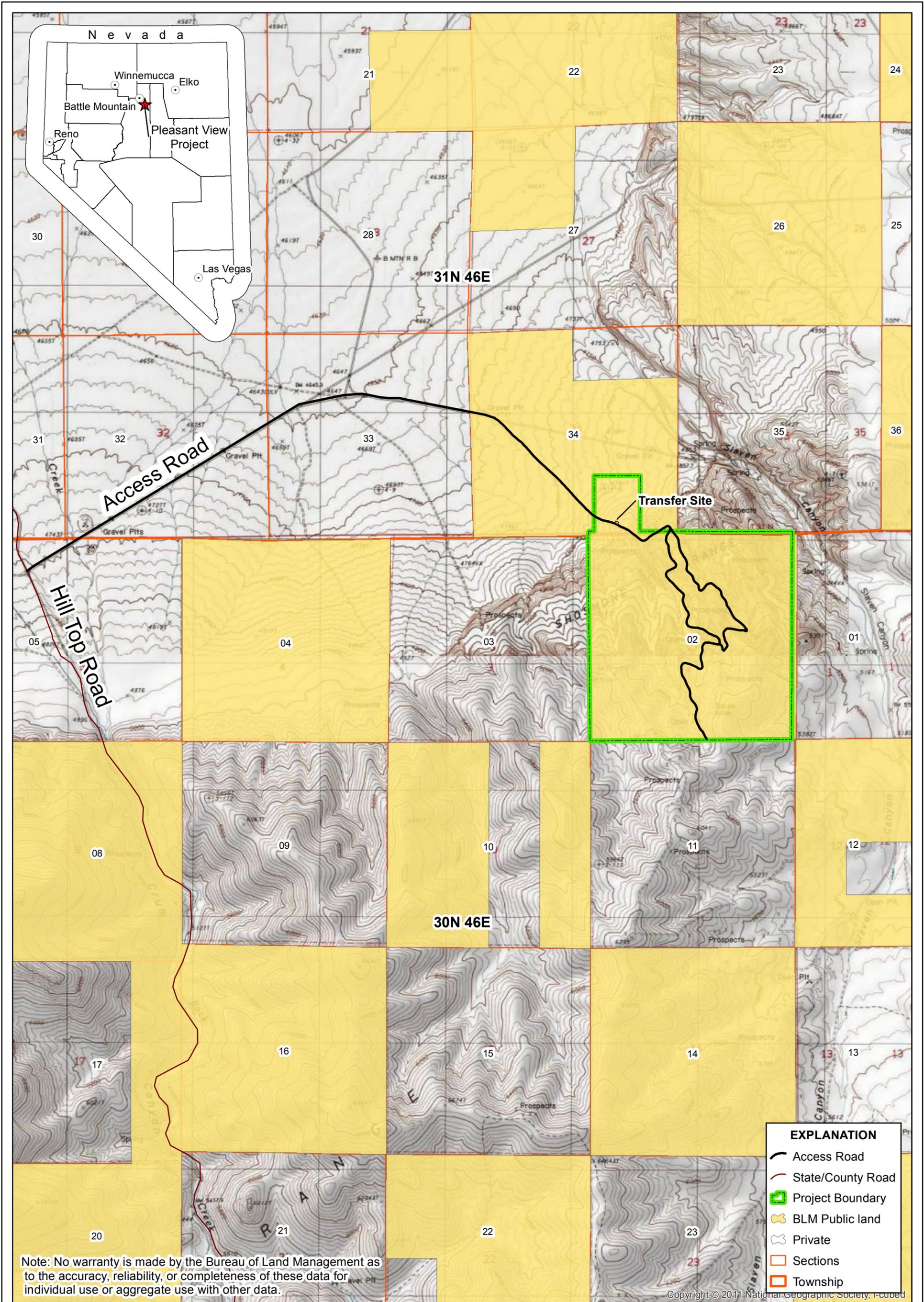
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DRAWING TITLE:		<b>SITE ACCESS</b>
DRAWING NO.	<b>FIGURE 2</b>	REVISION NO.
DATE:	<b>10/17/2012</b>	<b>A</b>



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EXPLANATION	
	Access Road
	State/County Road
	Project Boundary
	BLM Public land
	Private
	Sections
	Township

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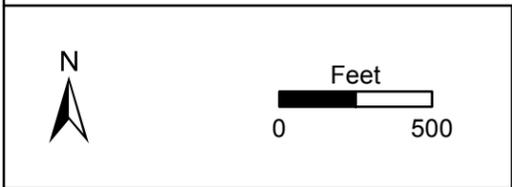
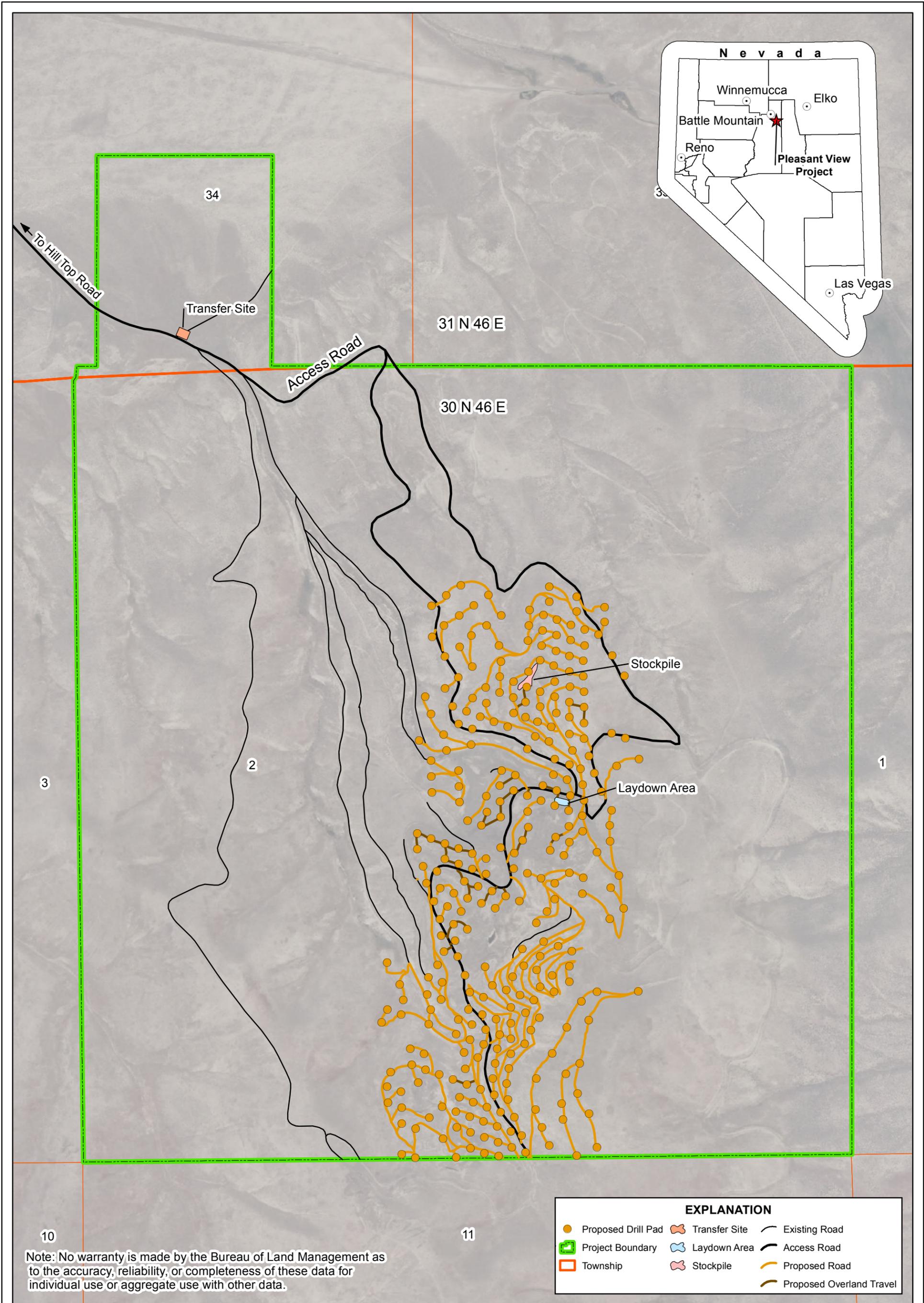


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DRAWING TITLE:		
<b>PROJECT AREA AND LAND STATUS</b>		
DRAWING NO.	<b>FIGURE 3</b>	REVISION NO.
DATE:	<b>10/18/2012</b>	<b>A</b>



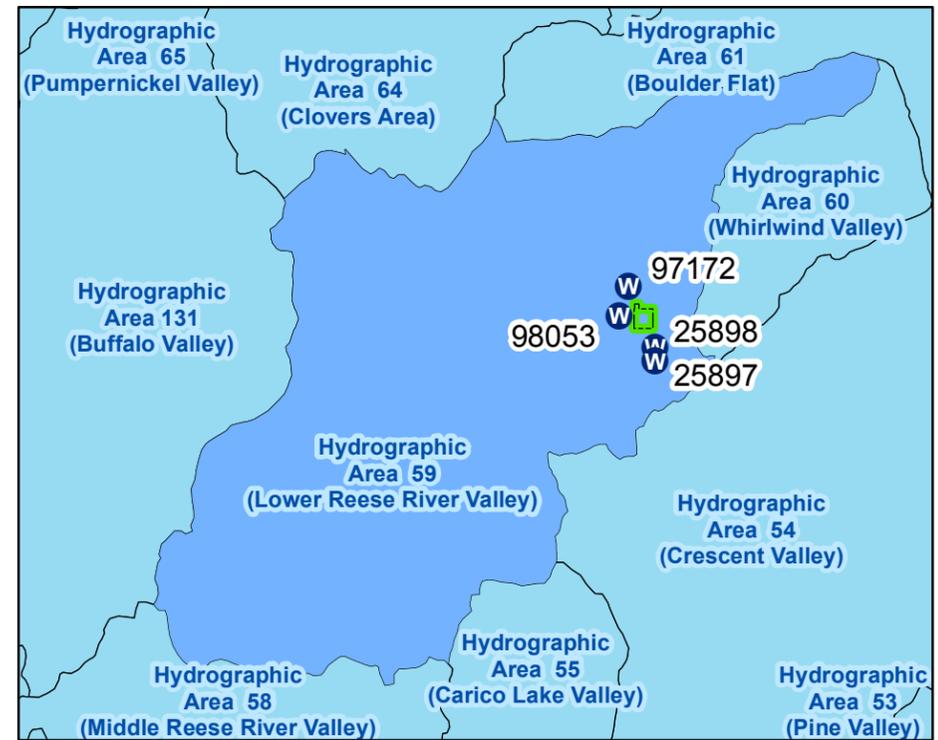
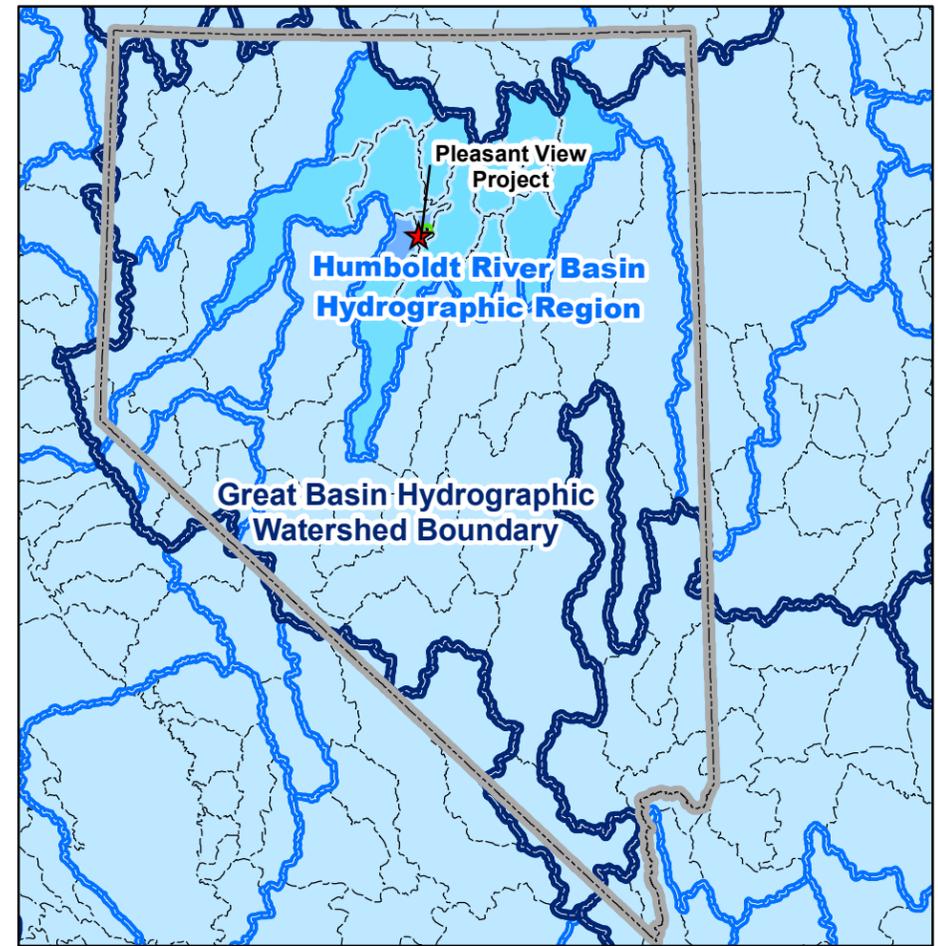
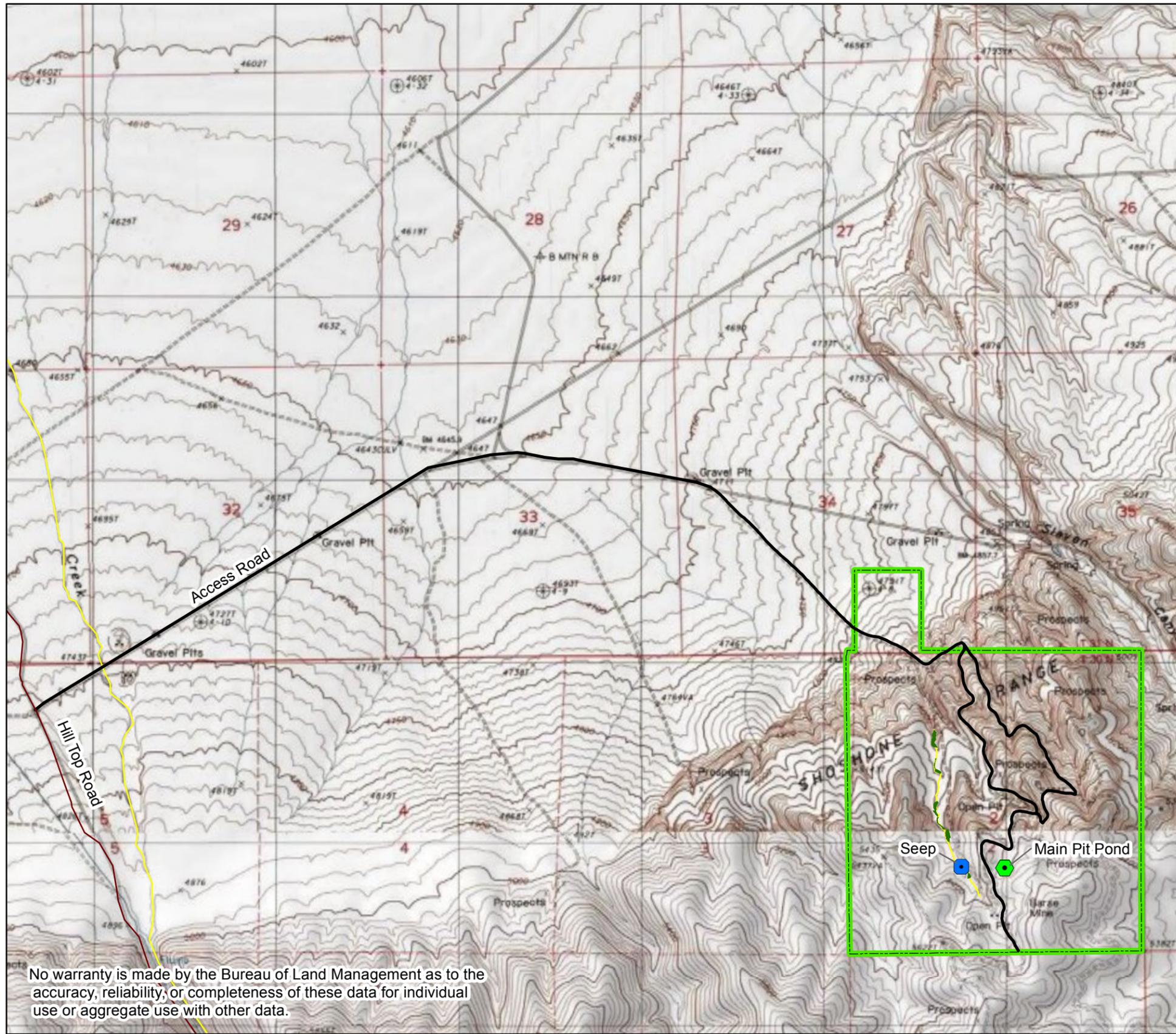
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DRAWING TITLE:  
**EXISTING AND PROPOSED DISTURBANCE**

DRAWING NO. **FIGURE 4** REVISION NO.  
 DATE: **10/18/2012** **A**



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**EXPLANATION**

- Seep
- Main Pit Pond
- Well and Well Log Number
- State/County Road
- Access Road
- Drainage
- Project Boundary

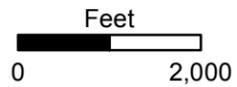
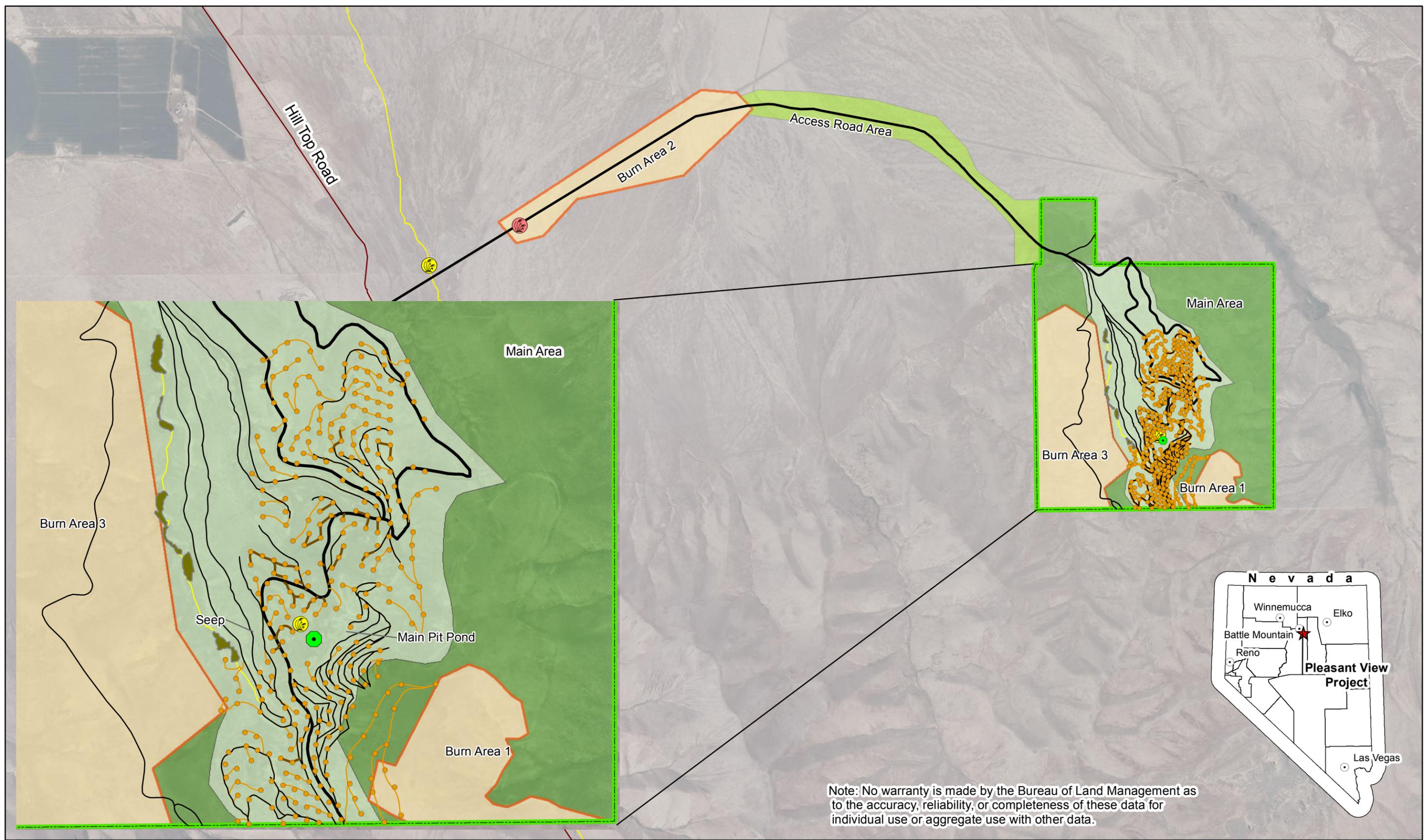


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DRAWING TITLE:  
**WATER RESOURCES**

DRAWING NO.	<b>FIGURE 5</b>	REVISION NO.
DATE:	<b>10/17/2012</b>	<b>A</b>



**EXPLANATION**

- |                    |                          |                  |             |
|--------------------|--------------------------|------------------|-------------|
| Hoary Cress        | Existing Road            | Project Boundary | Mining Area |
| Tamarisk           | Proposed Road            | Riparian Area    | Burn Area   |
| Main Pit Pond      | Proposed Overland Travel | Main Area        |             |
| Seep               | Drainage                 | Access Road Area |             |
| Proposed Drill Pad | Access Road              |                  |             |

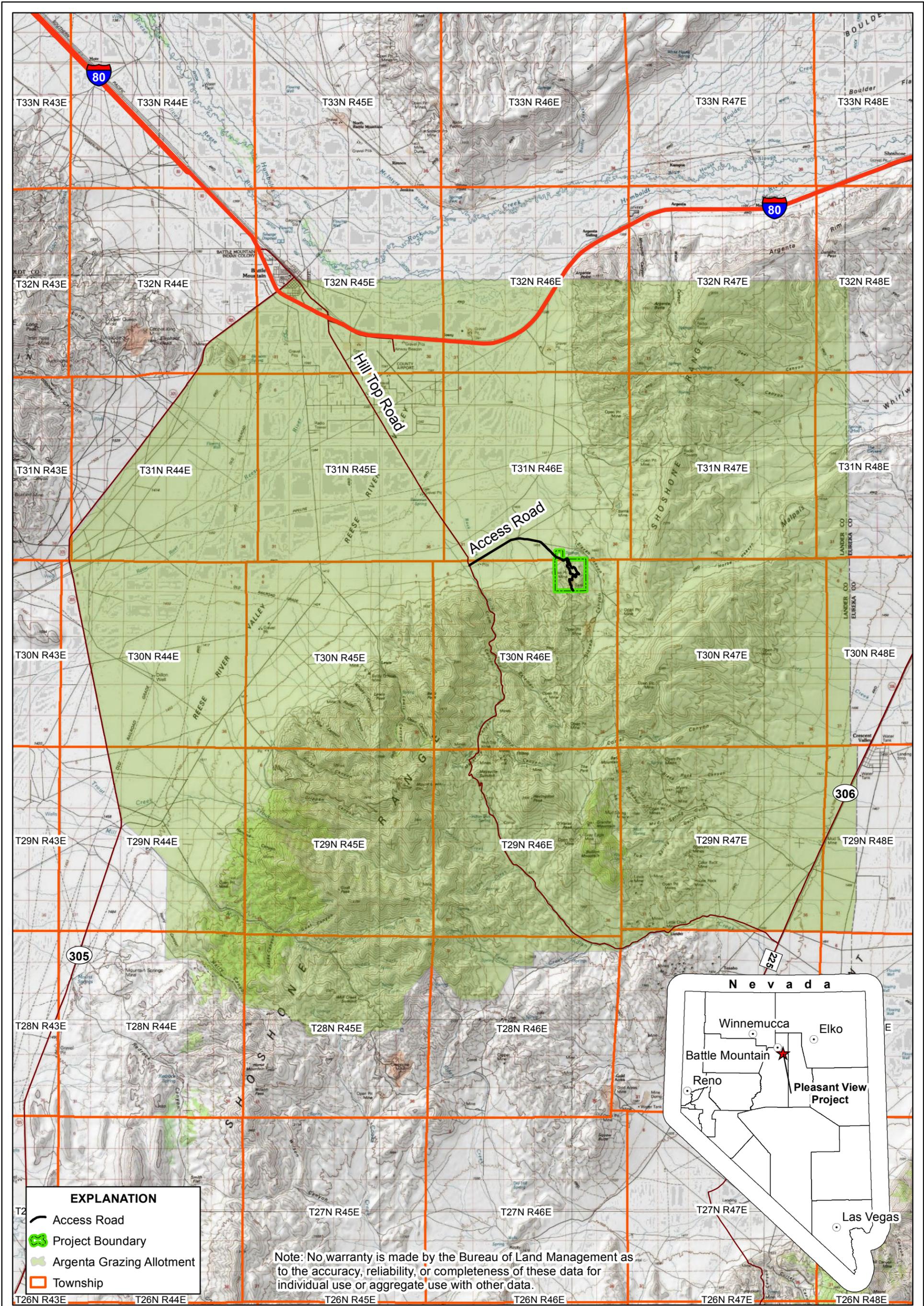


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DRAWING TITLE:  
**VEGETATION**

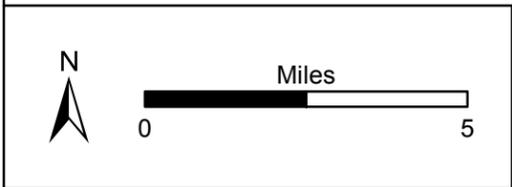
DRAWING NO.	<b>FIGURE 6</b>	REVISION NO.
DATE:	<b>10/18/2012</b>	<b>A</b>



**EXPLANATION**

- Access Road
- Project Boundary
- Argenta Grazing Allotment
- Township

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

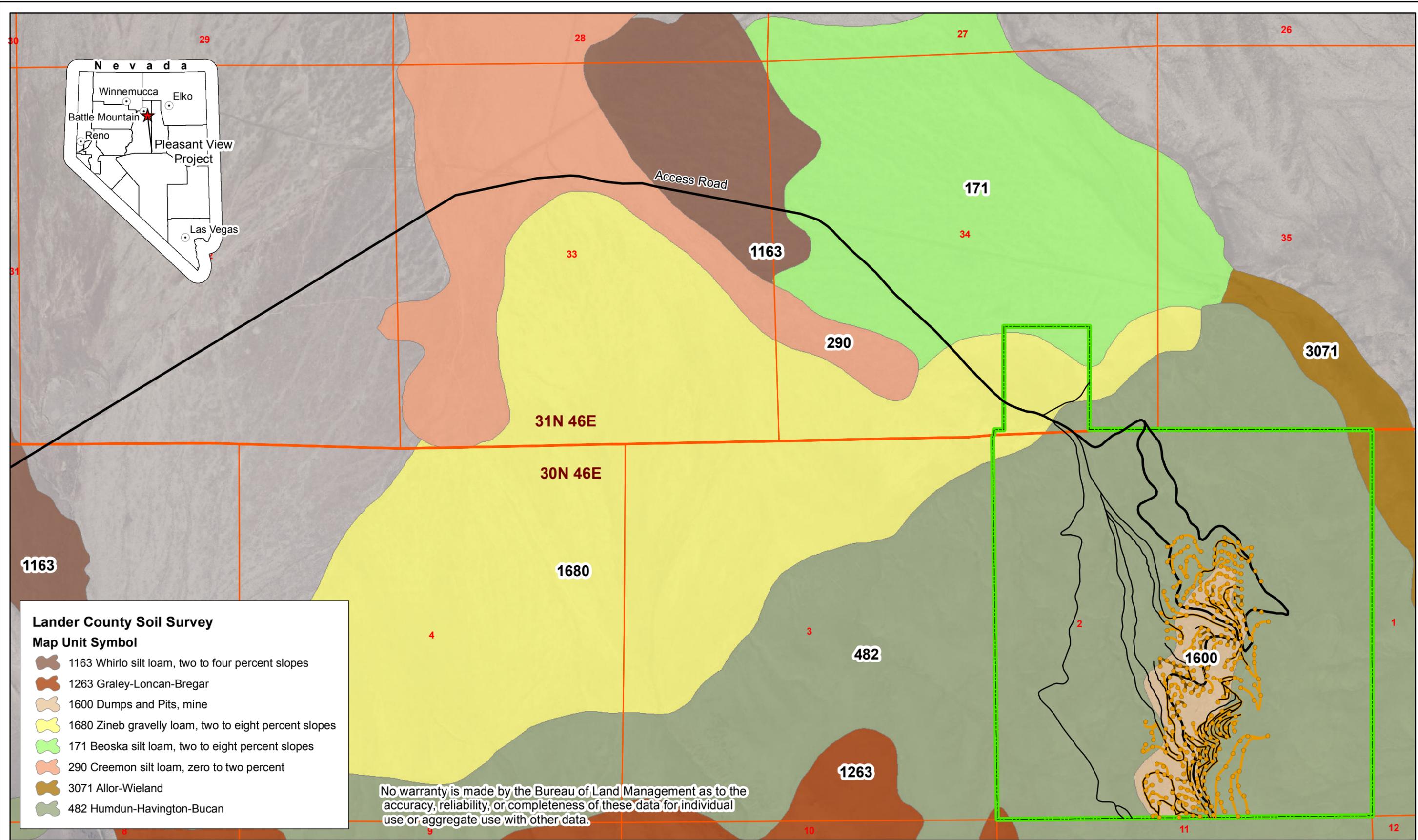


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 BLM District  
 Mount Lewis Field Office  
 50 Bastian Road  
 Battle Mountain, NV 89820

**HALLIBURTON  
 ENERGY SERVICES  
 PLEASANT VIEW EA**

DRAWING TITLE:		<b>GRAZING</b>
DRAWING NO.	<b>FIGURE 7</b>	REVISION NO.
DATE:	<b>10/17/2012</b>	<b>A</b>



**Lander County Soil Survey**  
**Map Unit Symbol**

- 1163 Whirlo silt loam, two to four percent slopes
- 1263 Graley-Loncan-Bregar
- 1600 Dumps and Pits, mine
- 1680 Zineb gravelly loam, two to eight percent slopes
- 171 Beoska silt loam, two to eight percent slopes
- 290 Creemon silt loam, zero to two percent
- 3071 Allor-Wieland
- 482 Humdun-Havington-Bucan

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

**N**

Feet

0 1,000

**EXPLANATION**

- Proposed Drill Pad
- Proposed Overland Travel
- Project Boundary
- Proposed Road
- Access Road
- Township
- Existing Roads
- Section

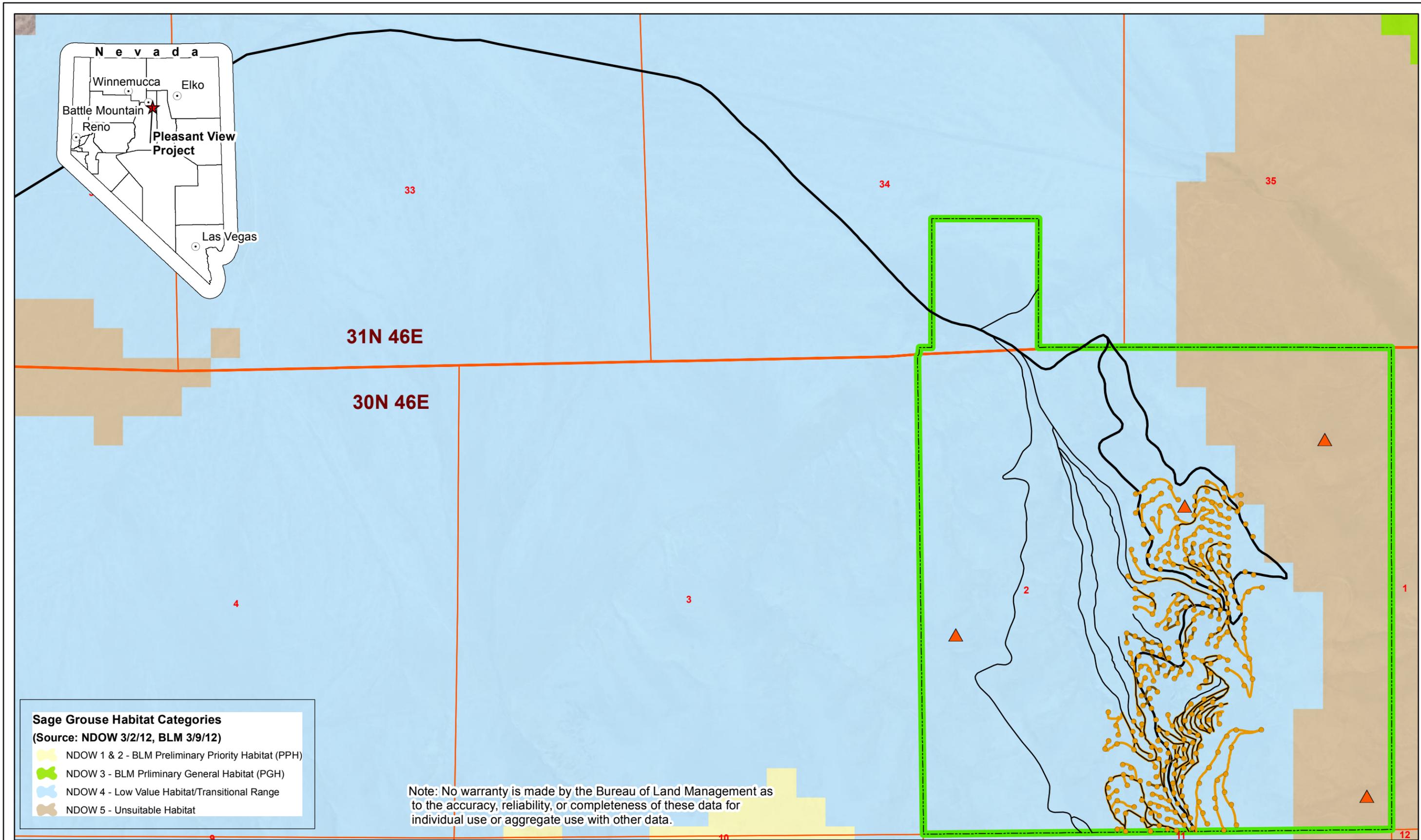
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DRAWING TITLE: **SOILS**

DRAWING NO. **FIGURE 8** REVISION NO. **A**

DATE: **10/17/2012**



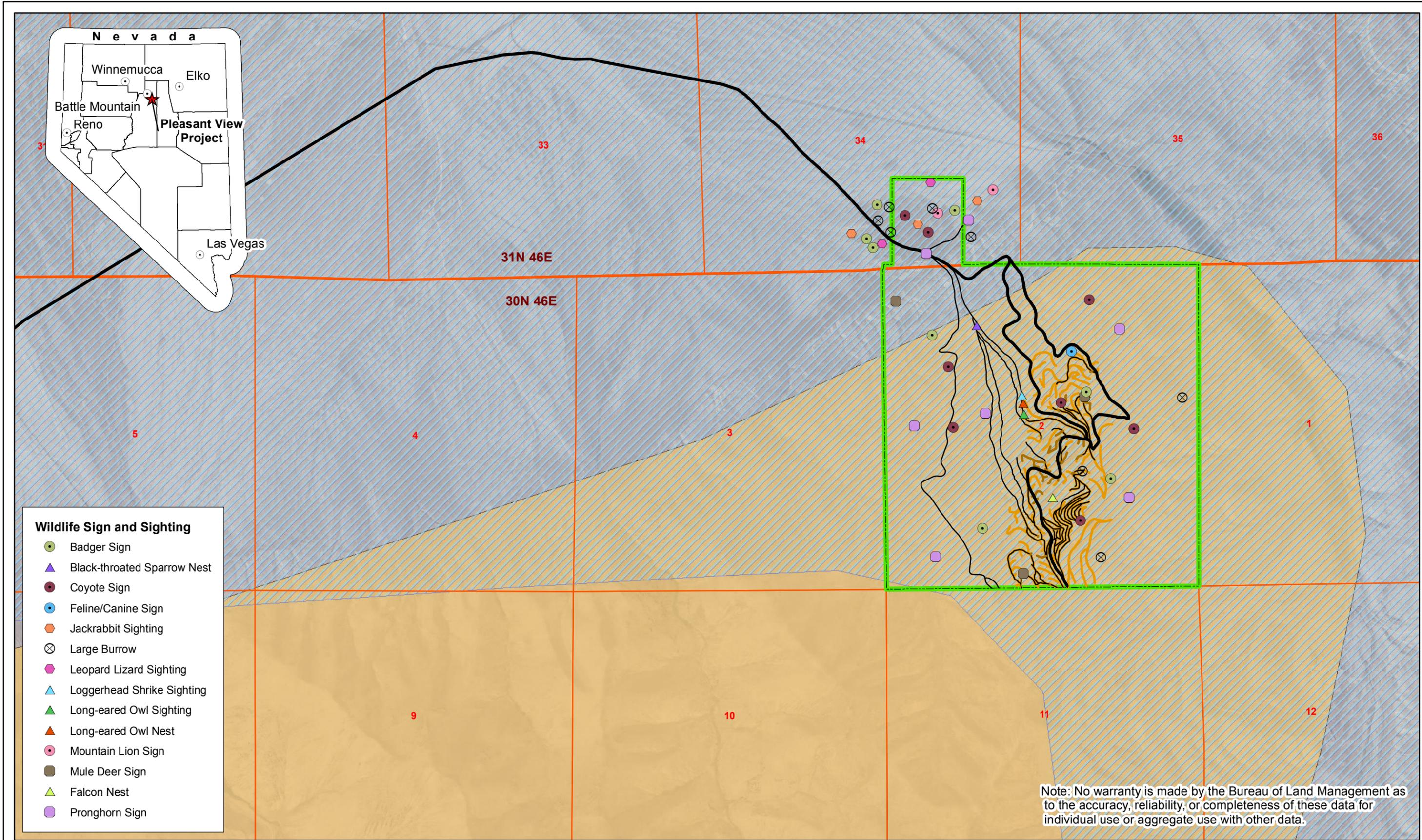
EXPLANATION		
● Proposed Drill Pad	— Access Road	⬭ Project Boundary
▲ Greater Sage-grouse Sign	— Existing Roads	▭ Township
— Proposed Overland Travel	— Proposed Road	▭ Section

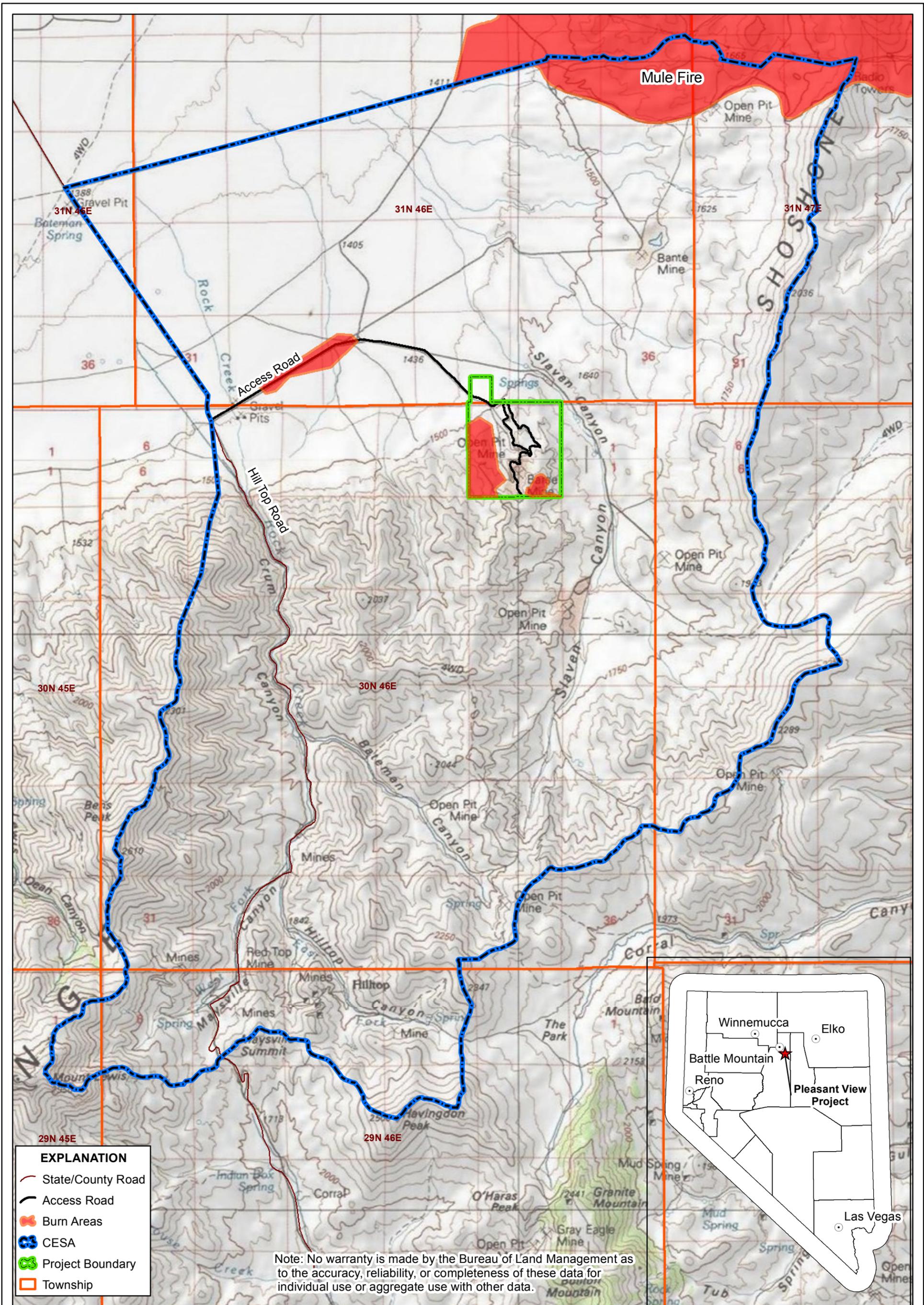


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**HALLIBURTON  
ENERGY SERVICES  
PLEASANT VIEW EA**

DRAWING TITLE: <b>GREATER SAGE-GROUSE HABITAT AND SIGHTINGS</b>		
DRAWING NO.:	<b>FIGURE 9</b>	REVISION NO.:
DATE:	<b>10/17/2012</b>	<b>A</b>





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**HALLIBURTON  
ENERGY SERVICES  
PLEASANT VIEW EA**

DRAWING TITLE:  
**Cumulative Effects  
Study Area**

DRAWING NO. **FIGURE 11** REVISION NO.  
DATE: **10/17/2012** **A**

## **Appendix A:**

### **Vegetation Observed in the Project Area**

Burn Area 1:

- big sagebrush (*Artemisia tridentata*);
- bottlebrush squirreltail (*Elymus elymoides*);
- cheatgrass (*Bromus tectorum*);
- desert peach (*Prunus andersonii*);
- Douglas rabbitbrush (*Chrysothamnus viscidiflorus*);
- fiddleneck borage (*Amsinckia* sp.);
- horsebrush (*Tetradymia canescens*);
- Lewis buckwheat (*Eriogonum lewisii*);
- *Lupinus* sp.
- needlegrass (*Achnatherum* sp.);
- roundspike cryptantha (*Cryptantha humilis*);
- rubber rabbitbrush (*Chrysothamnus nauseosus*);
- Sandberg bluegrass (*Poa secunda*);
- shield peppergrass (*Lepidium perfoliatum*);
- spiny phlox (*Phlox hoodia*); and
- tumble mustard (*Sisymbrium altissimum*).

(Burn Area 2 was located outside of the Project Area, data not included)

Burn Area 3:

- bottlebrush squirreltail (*Elymus elymoides*);
- cheatgrass (*Bromus tectorum*);
- *Cymopterus* sp.
- death camas (*Zigadenus venenosus*);
- Douglas rabbitbrush (*Chrysothamnus viscidiflorus*);
- mariposa lily (*Calychortus* sp.);
- redstem filaree (*Erodium cicutarium*);
- rubber rabbitbrush (*Chrysothamnus nauseosus*);
- Sandberg bluegrass (*Poa secunda*); and
- shield peppergrass (*Lepidium perfoliatum*).

Access Road Burn Area:

- cheatgrass (*Bromus tectorum*);
- Douglas rabbitbrush (*Chrysothamnus viscidiflorus*);
- flix weed (*Descurainia sophia*);
- hoary cress (*Cardaria draba*);
- horehound (*Marrubium vulgare*);
- rubber rabbitbrush (*Chrysothamnus nauseosus*);
- shield peppergrass (*Lepidium perfoliatum*); and
- silver sagebrush (*Artemisia cana*).

Mining Disturbance Area:

- arrowleaf balsamroot (*Balsamorhiza sagittata*);
- basin wildrye (*Leymus cinereus*);
- beavertail cactus (*Opuntia* sp.);
- big sagebrush (*Artemisia tridentata*);
- black sagebrush (*Artemisia nova*);
- bottlebrush squirreltail (*Elymus elymoides*);
- broomrape (*Orobanche* sp.);
- bur buttercup (*Ranunculus testiculata*);
- cheatgrass (*Bromus tectorum*);
- *Cirsium* sp.
- crested wheatgrass (*Agropyron cristatum*);
- cushion buckwheat (*Eriogonum ovalifolium*);
- *Cymopterus* sp.
- darkred onion (*Allium atrorubens*);
- death camas (*Zigadenus venenosus*);
- desert paintbrush (*Castilleja linariifolia*);
- desert peach (*Prunus andersonii*);
- Douglas rabbitbrush (*Chrysothamnus viscidiflorus*);
- evening primrose (*Cammissonia* sp.);

- fernleaf biscuitroot (*Lomatium dissectum*);
- fiddleneck borage (*Amsinckia* sp.);
- flix weed (*Descurainia sophia*);
- freckled milk vetch (*Astragalus lentiginosus*);
- greasewood (*Sarcobatus vermiculatus*);
- Herman's buckwheat (*Eriogonum heermannii*);
- horsebrush (*Tetradymia canescens*);
- Indian ricegrass (*Achnatherum hymenoides*);
- inland salt grass (*Distichlis spicata*);
- Lewis buckwheat (*Eriogonum lewisii*);
- long-leaf phlox (*Phlox longifolia*);
- *Lupinus* sp.
- mariposa lily (*Calychortus* sp.);
- needle-and-thread grass (*Hesperostipa comata*);
- needlegrass (*Achnatherum* sp.);
- *Penstemon* sp.
- *Phacaelia* sp.
- poverty weed (*Iva axillaris*);
- prickly poppy (*Argemone corymbosa*);
- prince's plume (*Stanleya elata*);
- prince's plume (*Stanleya pinnata*);
- Pursh's milkvetch (*Astragalus purshii*);
- rayless erigeron (*Erigeron* sp.);
- redstem filaree (*Erodium cicutarium*);
- roundspike cryptantha (*Cryptantha humilis*);
- rubber rabbitbrush (*Chrysothamnus nauseosus*);
- Sandberg bluegrass (*Poa secunda*);
- shield peppergrass (*Lepidium perfoliatum*);
- spiny phlox (*Phlox hoodia*); and
- tapertip hawksbeard (*Crepis acuminata*).

#### Access Road Area:

- big sagebrush (*Artemisia tridentata*);
- bottlebrush squirreltail (*Elymus elymoides*);
- cheatgrass (*Bromus tectorum*);
- Douglas rabbitbrush (*Chrysothamnus viscidiflorus*);
- foxtail barley (*Hordeum jubatum*);
- flix weed (*Descurainia sophia*);
- greasewood (*Sarcobatus vermiculatus*);
- poverty weed (*Iva axillaris*);
- prickly poppy (*Argemone corymbosa*);
- rubber rabbitbrush (*Chrysothamnus nauseosus*);
- Sandberg bluegrass (*Poa secunda*);
- shadscale (*Atriplex confertifolia*);
- shield peppergrass (*Lepidium perfoliatum*);
- silver sagebrush (*Artemisia cana*); and
- tumble mustard (*Sisymbrium altissimum*).

#### Main Survey Area:

- arrowleaf balsamroot (*Balsamorhiza sagittata*);
- Basin wildrye (*Leymus cinereus*);
- beavertail cactus (*Opuntia* sp.);
- big sagebrush (*Artemisia tridentata*);
- black sagebrush (*Artemisia nova*);
- bottlebrush squirreltail (*Elymus elymoides*);
- bur buttercup (*Ranunculus testiculata*);
- cheatgrass (*Bromus tectorum*);
- *Cirsium* sp.
- crested wheatgrass (*Agropyron cristatum*);
- cushion buckwheat (*Eriogonum ovalifolium*);
- *Cymopterus* sp.
- death camas (*Zigadenus venenosus*);
- desert paintbrush (*Castilleja linariifolia*);
- desert peach (*Prunus andersonii*);
- Douglas rabbitbrush (*Chrysothamnus viscidiflorus*);
- evening primrose (*Cammissonia* sp.);

- fernleaf biscuitroot (*Lomatium dissectum*);
- fiddleneck borage (*Amsinckia* sp.);
- flix weed (*Descurainia sophia*);
- freckled milk vetch (*Astragalus lentiginosus*);
- greasewood (*Sarcobatus vermiculatus*);
- Herman's buckwheat (*Eriogonum heermannii*);
- horsebrush (*Tetradymia canescens*);
- indian ricegrass (*Achnatherum hymenoides*);
- inland salt grass (*Distichlis spicata*);
- Lewis buckwheat (*Eriogonum lewisii*);
- long-leaf phlox (*Phlox longifolia*);
- *Lupinus* sp.
- mariposa lily (*Calychortus* sp.);
- needle-and-thread grass (*Hesperostipa comata*);
- needlegrass (*Achnatherum* sp.);
- *Penstemon* sp.
- *Phacelia* sp.
- poverty weed (*Iva axillaris*);
- prickly poppy (*Argemone corymbosa*);
- prince's plume (*Stanleya elata*);
- prince's plume (*Stanleya pinnata*);
- Pursh's milkvetch (*Astragalus purshii*);
- rayless erigeron (*Erigeron* sp.);
- redstem filaree (*Erodium cicutarium*);
- roundspike cryptantha (*Cryptantha humilis*);
- rubber rabbitbrush (*Chrysothamnus nauseosus*);
- Sandberg bluegrass (*Poa secunda*);
- shield peppergrass (*Lepidium perfoliatum*);
- spiny phlox (*Phlox hoodia*); and
- tapertip hawksbeard (*Crepis acuminata*).

#### Access Road Wash Crossing and Pond:

- shield peppergrass (*Lepidium perfoliatum*);
- stinging nettle (*Urtica dioica*); and
- tamarisk (*Tamarix* sp.).

#### Mine Pit Pond Shoreline:

- cattail (*Typha latifolia*); and
- tamarisk (*Tamarix* sp.).

#### Seasonal Stream Channels:

- Basin wildrye (*Leymus cinereus*);
- creeping wildrye (*Leymus triticoides*);
- desert paintbrush (*Castilleja linariifolia*);
- desert peach (*Prunus andersonii*);
- prince's plume (*Stanleya pinnata*);
- willow (*Salix* sp.); and
- Utah serviceberry (*Amelanchier utahensis*).

## **Appendix B:**

### **Wildlife Species Having the Potential to Occur in the Project Area**

**Wildlife Species List**  
**Unit 151, West Lander County, Nevada**

**Birds**

**Order: Gaviiformes (Diver/Swimmers)**

**Family: Gaviidae (Loons)**

Common Loon *Gavia immer*

**Order: Podicipediformes (Flat-toed Divers)**

**Family: Podicipedidae (Grebes)**

Pied-billed Grebe *Podilymbus podiceps*  
 Eared Grebe *Podiceps nigricollis*  
 Western Grebe *Aechmophorus occidentalis*  
 Clark's Grebe *Aechmophorus clarkii*

**Order: Pelecaniformes (Four-toed Fish eaters)**

**Family: Pelecanidae (Pelicans)**

American White Pelican *Pelecanus erythrorhynchos*

**Family: Phalacrocoracidae (Cormorants)**

Double-crested Cormorant *Phalacrocorax auritus*

**Order: Ciconiiformes (Waders and Vultures)**

**Family: Ardeidae (Bitterns, Herons, Egrets)**

American Bittern *Botaurus lentiginosus*  
 Great Blue Heron *Ardea herodias*  
 Great Egret *Ardea alba*  
 Snowy Egret *Egretta thula*  
 Cattle Egret *Bubulcus ibis*  
 Green Heron *Butorides virescens*  
 Black-crowned Night Heron *Nycticorax nycticorax*

**Family: Threskiornithidae (Ibises)**

White-faced Ibis *Plegadis chihi*

**Family: Cathartidae (New World Vultures)**

Turkey Vulture *Cathartes aura*  
 California Condor *Gymnogyps californianus(L.E.)*

**Order: Anseriformes (Waterfowl)**

**Family: Anatidae (Ducks, Geese, Swans)**

Greater White-fronted Goose *Anser albifrons*  
 Snow Goose *Chen caerulescens*  
 Canada Goose *Branta canadensis*  
 Tundra Swan *Cygnus columbianus*  
 Wood Duck *Aix sponsa*  
 Gadwall *Anas strepera*  
 American Wigeon *Anas americana*  
 Mallard *Anas platyrhynchos*  
 Blue-winged Teal *Anas discors*  
 Cinnamon Teal *Anas cyanoptera*  
 Northern Shoveler *Anas clypeata*  
 Northern Pintail *Anas acuta*  
 Green-winged Teal *Anas crecca*  
 Canvasback *Aythya valisineria*  
 Redhead *Aythya americana*  
 Ring-necked Duck *Aythya collaris*  
 Greater Scaup *Aythya marila*  
 Lesser Scaup *Aythya affinis*  
 Long-tailed Duck *Clangula hyemalis*  
 Bufflehead *Bucephala albeola*  
 Common Goldeneye *Bucephala clangula*  
 Barrow's Goldeneye *Bucephala islandica*  
 Hooded Merganser *Lophodytes cucullatus*  
 Common Merganser *Mergus merganser*  
 Red-breasted Merganser *Mergus serrator*  
 Ruddy Duck *Oxyura jamaicensis*

**Order: Falconiformes (Diurnal Flesh Eaters)**

**Family: Accipitridae (Hawks, Eagles, Osprey)**

Osprey *Pandion haliaetus*  
 Bald Eagle *Haliaetus leucocephalus*  
 Northern Harrier *Circus cyaneus*  
 Sharp-shinned Hawk *Accipiter striatus*  
 Cooper's Hawk *Accipiter cooperii*  
 Northern Goshawk *Accipiter gentilis*  
 Swainson's Hawk *Buteo swainsoni*  
 Red-tailed Hawk *Buteo jamaicensis*  
 Ferruginous Hawk *Buteo regalis*  
 Rough-legged Hawk *Buteo lagopus*  
 Golden Eagle *Aquila chrysaetos*

**Family: Falconidae (Falcons)**

American Kestrel *Falco sparverius*  
 Merlin *Falco columbarius*  
 Gyrfalcon *Falco rusticolus*  
 Peregrine Falcon *Falco peregrinus*  
 Prairie Falcon *Falco mexicanus*

**Order: Galliformes (Chicken Relatives)**

**Family: Phasianidae (Grouse, Partridge)**

Chukar *Alectoris chukar*  
 Gray Partridge *Perdix perdix*  
 Ring-necked Pheasant *Phasianus colchicus*  
 Greater Sage-Grouse *Centrocercus urophasianus*  
 Dusky Grouse *Dendragapus obscurus*  
 Wild Turkey *Meleagris gallopavo*

**Family: Odontophoridae (New World Quail)**

California Quail *Callipepla californica*  
 Mountain Quail *Oreortyx pictus*

**Order: Gruiformes (Cranes and Allies)**

**Family: Rallidae (Rails, Coots)**

Virginia Rail *Rallus limicola*  
 Sora *Porzana carolina*  
 Common Moorhen *Gallinula chloropus*  
 American Coot *Fulica americana*

**Family: Gruidae (Cranes)**

Greater Sandhill Crane *Grus canadensis tabida*

**Order: Charadriiformes (Wading Birds)**

**Family: Charadriidae (Plovers)**

Black-bellied Plover *Pluvialis squatarola*  
 Snowy Plover *Charadrius alexandrinus*  
 Semi-palmated Plover *Charadrius semipalmatus*  
 Killdeer *Charadrius vociferus*  
 Mountain Plover *Charadrius montanus*

**Family: Recurvirostridae (Avocets)**

Black-necked Stilt *Himantopus mexicanus*  
 American Avocet *Recurvirostra americana*

**Family: Scolopacidae (Sandpipers, Phalaropes)**

Greater Yellowlegs *Tringa melanoleuca*  
 Lesser Yellowlegs *Tringa flavipes*  
 Solitary Sandpiper *Tringa solitaria*  
 Willet *Catoptrophorus semipalmatus*  
 Spotted Sandpiper *Actitis macularia*  
 Long-billed Curlew *Numenius americanus*  
 Western Sandpiper *Limidris mauri*  
 Long-billed Dowitcher *Limnodromus scolopaceus*  
 Wilson's Snipe *Gallinago gallinago*

Wilson's Phalarope	<i>Phalaropus tricolor</i>
Red-necked Phalarope	<i>Phalaropus lobatus</i>
<b>Family: Laridae (Gulls, Terns)</b>	
Franklin's Gull	<i>Larus pipixcan</i>
Ring-billed Gull	<i>Larus delawarensis</i>
California Gull	<i>Larus californicus</i>
Caspian Tern	<i>Sterna caspia</i>
Forster's Tern	<i>Sterna forsteri</i>
Black Tern	<i>Chlidonias niger</i>

## Order: Columbiformes (Pigeons and Allies)

### Family: Columbidae (Doves)

Rock Dove	<i>Columba livia</i>
White-winged Dove	<i>Zenaida asiatica</i>
Mourning Dove	<i>Zenaida macroura</i>
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>
Ringed Turtle-Dove	<i>Streptopelia risoria</i>

## Order: Strigiformes (Nocturnal Flesh Eaters)

### Family: Tytonidae (Barn Owls)

Barn Owl	<i>Tyto alba</i>
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### Family: Strigidae (Owls)

Flammulated Owl	<i>Otus flammeolus</i>
Western Screech-Owl	<i>Otus kennicottii</i>
Great Horned Owl	<i>Bubo virginianus</i>
Snowy Owl	<i>Nyctea scandiaca</i>
Northern Pygmy-Owl	<i>Glaucidium gnoma</i>
Burrowing Owl	<i>Athene cunicularia</i>
Long-eared Owl	<i>Asio otus</i>
Short-eared Owl	<i>Asio flammeus</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>

## Order: Caprimulgiformes (Night Jars)

### Family: Caprimulgidae (Goatsuckers)

Common Nighthawk	<i>Chordeiles minor</i>
Common Poorwill	<i>Phalaenoptilus nuttallii</i>

## Order: Apodiformes (Small Fast Fliers)

### Family: Apodidae (Swifts)

White-throated Swift	<i>Aeronautes saxatalis</i>
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### Family: Trochilidae (Hummingbirds)

Black-chinned Hummingbird	<i>Archilochus alexandri</i>
Calliope Hummingbird	<i>Stellula calliope</i>
Broad-tailed Hummingbird	<i>Selasphorus platycercus</i>
Rufous Hummingbird	<i>Selasphorus rufus</i>

## Order: Coraciiformes (Cavity Nesters)

### Family: Alcedinidae (Kingfishers)

Belted Kingfisher	<i>Ceryle alcyon</i>
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## Order: Piciformes (Cavity Builders)

### Family: Picidae (Woodpeckers)

Lewis' Woodpecker	<i>Melanerpes lewis</i>
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Northern Flicker	<i>Colaptes auratus</i>

## Order: Passeriformes (Perching Birds)

### Family: Tyrannidae (Flycatchers)

Western Wood-Pewee	<i>Contopus sordidulus</i>
Willow Flycatcher	<i>Epidonax traillii</i>

Hammond's Flycatcher	<i>Epidonax hammondii</i>
Gray Flycatcher	<i>Epidonax wrightii</i>
Dusky Flycatcher	<i>Epidonax oberholseri</i>
Cordilleran Flycatcher	<i>Epidonax occidentalis</i>
Say's Phoebe	<i>Sayornis saya</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Western Kingbird	<i>Tyrannus verticalis</i>
Eastern Kingbird	<i>Tyrannus tyrannus</i>

### Family: Laniidae (Shrikes)

Loggerhead Shrike	<i>Lanius ludovicianus</i>
Northern Shrike	<i>Lanius excubitor</i>

### Family: Vireonidae (Vireos)

Plumbeous Vireo	<i>Vireo plumbeus</i>
Warbling Vireo	<i>Vireo gilvus</i>

### Family: Corvidae (Jays)

Western Scrub-Jay	<i>Aphelocoma californica</i>
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>
Clark's Nutcracker	<i>Nucifraga columbiana</i>
Black-billed Magpie	<i>Pica pica</i>
American Crow	<i>Corvus brachyrhynchos</i>
Common Raven	<i>Corvus corax</i>

### Family: Alaudidae (Larks)

Horned Lark	<i>Eremophila alpestris</i>
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### Family: Hirundinidae (Swallows)

Tree Swallow	<i>Tachycineta bicolor</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
Bank Swallow	<i>Riparia riparia</i>
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Barn Swallow	<i>Hirundo rustica</i>

### Family: Paridae (Chickadees, Titmice)

Black-capped Chickadee	<i>Poecile atricapillus</i>
Mountain Chickadee	<i>Poecile gambeli</i>
Juniper Titmouse	<i>Baeolophus griseus</i>

### Family: Aegithalidae (Bushtits)

Bushtit	<i>Psaltriparus minimus</i>
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### Family: Sittidae (Nuthatches)

Red-breasted Nuthatch	<i>Sitta canadensis</i>
White-breasted Nuthatch	<i>Sitta carolinensis</i>

### Family: Troglodytidae (Wrens)

Rock Wren	<i>Salpinctes obsoletus</i>
Canyon Wren	<i>Catherpes mexicanus</i>
Bewick's Wren	<i>Thyromanes bewickii</i>
House Wren	<i>Troglodytes aedon</i>
Marsh Wren	<i>Cistothorus palustris</i>

### Family: Cinclidae (Dippers)

American Dipper	<i>Cinclus mexicanus</i>
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### Family: Regulidae (Kinglets)

Golden-crowned Kinglet	<i>Regulus satrapa</i>
Ruby-crowned Kinglet	<i>Regulus calendula</i>

### Family: Sylviidae (Gnatcatchers)

Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>
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### Family: Turdidae (Thrushes)

Western Bluebird	<i>Sialia mexicana</i>
Mountain Bluebird	<i>Sialia currucoides</i>
Townsend's Solitaire	<i>Myadestes townsendi</i>
Swainson's Thrush	<i>Catharus ustulatus</i>
Hermit Thrush	<i>Catharus guttatus</i>
American Robin	<i>Turdus migratorius</i>
Varied Thrush	<i>Ixoreus naevius</i>

### Family: Mimidae (Thrashers, Mockingbirds)

Northern Mockingbird	<i>Mimus polyglottos</i>
Sage Thrasher	<i>Oreoscoptes montanus</i>

### Family: Sturnidae (Starlings)

European Starling	<i>Sturnus vulgaris</i>
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### Family: Motacillidae (Wagtails, Pipits)

American Pipit *Anthus rubescens*

**Family: Bombycillidae (Waxwings)**

Bohemian Waxwing *Bombycilla garrulus*  
Cedar Waxwing *Bombycilla cedrorum*

**Family: Parulidae (Wood Warblers)**

Orange-crowned Warbler *Vermivora celata*  
Virginia's Warbler *Vermivora virginiae*  
Yellow Warbler *Dendroica petechia*  
Yellow-rumped Warbler *Dendroica coronata*  
Black-throated Gray Warbler *Dendroica nigrescens*  
Townsend's Warbler *Dendroica townsendi*  
MacGillivray's Warbler *Oporornis tolmiei*  
Common Yellowthroat *Geothlypis trichas*  
Wilson's Warbler *Wilsonia pusilla*  
Yellow-breasted Chat *Icteria virens*

**Family: Thraupidae (Tanagers)**

Western Tanager *Piranga ludoviciana*

**Family: Emberizidae (Sparrows, Towhees, Juncos)**

Green-tailed Towhee *Pipilo chlorurus*  
Spotted Towhee *Pipilo maculatus*  
American Tree Sparrow *Spizella arborea*  
Chipping Sparrow *Spizella passerina*  
Brewer's Sparrow *Spizella breweri*  
Vesper Sparrow *Poocetes gramineus*  
Lark Sparrow *Chondestes grammacus*  
Black-throated Sparrow *Amphispiza bilineata*  
Sage Sparrow *Amphispiza belli*  
Savannah Sparrow *Passerculus sandwichensis*  
Fox Sparrow *Passerella iliaca schistacea*  
Song Sparrow *Melospiza melodia*  
Lincoln's Sparrow *Melospiza lincolni*  
Gambel's White-crowned Sparrow *Zonotrichia leucophrys gambelii*  
Mountain W-crowned Sparrow *Zonotrichia leucophrys oriantha*  
Dark-eyed Junco (Oregon) *Junco hyemalis therburi*  
Dark-eyed Junco (Gray-headed) *Junco hyemalis caniceps*  
Lapland Longspur *Calcarius lapponicus*

**Family: Cardinalidae (Grosbeaks, Buntings)**

Rose-breasted Grosbeak *Pheucticus ludovicianus*  
Black-headed Grosbeak *Pheucticus melanocephalus*  
Blue Grosbeak *Guiraca caerulea*  
Lazuli Bunting *Passerina amoena*  
Indigo Bunting *Passerina cyanea*

**Family: Icteridae (Blackbirds, Orioles)**

Bobolink *Dolichonyx oryzivorus*  
Red-winged Blackbird *Agelaius phoeniceus*  
Western Meadowlark *Sturnella neglecta*  
Yellow-headed Blackbird *Xanthocephalus xanthocephalus*  
Brewer's Blackbird *Euphagus cyanocephalus*  
Great-tailed Grackle *Quiscalus mexicanus*  
Brown-headed Cowbird *Molothrus ater*  
Bullock's Oriole *Icterus bullockii*  
Scott's Oriole *Icterus parisorum*

**Family: Fringillidae (Finches, Grosbeaks)**

Gray-crowned Rosy-Finch *Leucosticte tephrocotis*  
Black Rosy-Finch *Leucosticte atrata*  
Cassin's Finch *Carpodacus cassinii*  
House Finch *Carpodacus mexicanus*  
Red Crossbill *Loxia curvirostra*  
Common Redpoll *Carduelis flammea*  
Pine Siskin *Carduelis pinus*  
Lesser Goldfinch *Carduelis psaltria*  
American Goldfinch *Carduelis tristis*  
Lawrence's Goldfinch *Carduelis lawrencei*  
Evening Grosbeak *Coccothraustes vespertinus*

**Family: Passeridae (Old World Sparrows)**

House Sparrow *Passer domesticus*

**Mammals**

**Order: Insectivora (Insect Eaters)**

**Family: Soricidae (Shrews)**

Merriam's Shrew *Sorex meriammi*  
Montane Shrew *Sorex monticolus*  
Vagrant Shrew *Sorex vagrans*  
American Water Shrew *Sorex palustris*

**Order: Chiroptera (Bats)**

**Family: Vespertilionidae (Plainnose Bats)**

California Myotis *Myotis californicus*  
Western Small-footed Myotis *Myotis ciliolabrum*  
Long-eared Myotis *Myotis evotis*  
Little Brown Bat *Myotis lucifugus*  
Fringed Myotis *Myotis thysanodes*  
Long-legged Myotis *Myotis volans*  
Yuma Myotis *Myotis yumanensis*  
Western Red Bat *Lasiurus blossevillii*  
Hoary Bat *Lasiurus cinereus*  
Silver-haired Bat *Lasionycteris noctivagans*  
Western Pipistrelle *Pipistrellus hesperus*  
Big Brown Bat *Eptesicus fuscus*  
Townsend's Big-eared Bat *Corynorhinus townsendii*  
Pallid Bat *Antrozous pallidus*

**Family: Molossidae (Freetail Bats)**

Brazilian Free-tailed Bat *Tadarida brasiliensis*

**Order: Lagomorpha (Pikas, Hares, Rabbits)**

**Family: Leporidae (Hares, Rabbits)**

Black-tailed Jackrabbit *Lepus californicus*  
Mountain Cottontail *Sylvilagus nuttalli*  
Pygmy Rabbit *Brachylagus idahoensis*

**Order: Rodentia (Rodents)**

**Family: Sciuridae (Squirrels)**

Least Chipmunk *Tamias minimus*  
Cliff Chipmunk *Tamias dorsalis*  
Uinta Chipmunk *Tamias umbrinus*  
Yellow-bellied Marmot *Marmota flaviventris*  
White-tailed Antelope Squirrel *Ammospermophilus leucurus*  
Great Basin Ground Squirrel *Spermophilus mollis*  
Golden-mantled Ground Squirrel *Spermophilus lateralis*

**Family: Geomyidae (Gophers)**

Botta's Pocket Gopher *Thomomys bottae*  
Northern Pocket Gopher *Thomomys talpoides*  
Townsend's Pocket Gopher *Thomomys townsendii*

**Family: Heteromyidae (Kangaroo Rodents)**

Little Pocket Mouse *Perognathus longimembris*  
Great Basin Pocket Mouse *Perognathus parvus*  
Dark Kangaroo Mouse *Microdipodops megacephalus*  
Ord Kangaroo Rat *Dipodomys ordii*  
Chisel-toothed Kangaroo Rat *Dipodomys microps*

**Family: Castoridae (Beavers)**

American Beaver *Castor canadensis*

**Family: Cricetidae (Mice, Rats, Voles)**

Western Harvest Mouse *Reithrodontomys megalotis*  
Canyon Mouse *Peromyscus crinitus*  
Deer Mouse *Peromyscus maniculatus*  
Piñon Mouse *Peromyscus truei*  
Northern Grasshopper Mouse *Onychomys leucogaster*  
Desert Woodrat *Neotoma lepida*  
Bushy-tailed Woodrat *Neotoma cinerea*  
Montane Vole *Microtus montanus*  
Long-tailed Vole *Microtus longicaudus*  
Sagebrush Vole *Lemmiscus curtatus*  
Muskrat *Ondatra zibethica*

**Family: Zapodidae (Jumping Mice)**

Western Jumping Mouse *Zapus princeps*  
**Family: Erethizontidae (New World Porcupines)**  
North American Porcupine *Erethizon dorsatum*

### Order: Carnivora (Flesh-Eaters)

#### Family: Canidae (Dogs)

Coyote *Canis latrans*  
Common Gray Fox *Urocyon cinereoargenteus*  
Kit Fox *Vulpes velox*  
Red Fox *Vulpes vulva*

#### Family: Procyonidae (Racoons and Allies)

Ringtail *Bassariscus astutus*  
Common Raccoon *Procyon lotor*

#### Family: Mustelidae (Weasels and Allies)

Ermine *Mustela erminea*  
Long-tailed Weasel *Mustela frenata*  
Mink *Mustela vison*  
Northern River Otter *Lontra canadensis*  
American Badger *Taxidea taxus*  
Striped Skunk *Mephitis mephitis*  
Western Spotted Skunk *Spilogale gracilis*

#### Family: Felidae (Cats)

Mountain Lion *Felix concolor*  
Bobcat *Lynx rufus*

### Order: Artiodactyla (Hoofed Mammals)

#### Family: Cervidae (Deer)

Mule Deer *Odocoileus hemionus*

#### Family: Antilocapridae (Pronghorn)

Pronghorn *Antilocapra americana*

#### Family: Bovidae (Bison, Sheep, Goats)

Desert Bighorn Sheep *Ovis canadensis nelsoni*

### Reptiles

### Order: Squamata (Lizards, Snakes)

#### Family: Iguanidae (Iguanas and Allies)

Common Zebra-tailed Lizard *Callisaurus draconoides*  
Long-nosed Leopard Lizard *Gambelia wislizenii*  
Western Fence Lizard *Sceloporus occidentalis*  
Sagebrush Lizard *Sceloporus graciosus*  
Common Side-blotched Lizard *Uta stansburiana*  
Greater Short-horned Lizard *Phrynosoma hernandesi*  
Desert Horned Lizard *Phrynosoma platyrhinos*

#### Family: Scincidae (Skinks)

Great Basin Skink *Eumeces skiltonianus utahensis*

#### Family: Teiidae (Whiptails)

Western Whiptail *Cnemidophorus tigris*

#### Family: Boidae (Boas, Pythons)

Rubber Boa *Charina bottae*

#### Family: Colubridae (Solid-toothed Snakes)

Ringneck Snake *Diadophis punctatus*  
Striped Whipsnake *Masticophis taeniatus*  
Western Yellow-bellied Racer *Coluber constrictor mormon*  
Great Basin Gopher Snake *Pituophis cantenifer deserticola*  
Common Kingsnake *Lampropeltis getulus*  
Long-nosed Snake *Rhinocheilus lecontei*  
Western Terrestrial Garter *Thamnophis elegans*  
Ground Snake *Sonora semiannulata*  
Night Snake *Hypsiglena torquata*

#### Family: Viperidae (Vipers)

Great Basin Rattlesnake *Crotalus viridis lutosus*

### Amphibians

### Order: Anura (Frogs and Toads)

#### Family: Pelobatidae (Spadefoots)

Great Basin Spadefoot Toad *Spea intermontana*

#### Family: Ranidae (True Frogs)

Columbia Spotted Frog *Rana luteiventris (L.E.)*  
Northern Leopard Frog *Rana pipiens*  
Bullfrog *Rana catesbeiana*

#### Family: Bufonidae (Toads)

Boreal Toad *Bufo boreas boreas*

#### Family: Hylidae (Treefrogs)

Pacific Chorus Frog *Pseudacris regilla*

### Fish

### Order: Salmoniformes

#### Family: Salmonidae (Salmon and Trout)

Rainbow Trout *Oncorhynchus mykiss*  
Lahontan Cutthroat *Oncorhynchus clarki henshawi(L.E.)*  
Brook Trout *Salvelinus fontinalis*  
Brown Trout *Salmo trutta*

### Order: Scorpaeniformes

#### Family: Cottidae (Sculpins)

Paiute Sculpin *Cottus beldingii*

### Order: Cypriniformes

#### Family: Cyprinidae (Carp and Minnows)

Speckled Dace *Rhinichthys osculus*  
Redside Shiner *Richardsonius balteatus*  
Tui Chub *Gila bicolor*  
Asiatic Carp *Cyprinus carpio*

#### Family: Catostomidae (Suckers)

Mountain Sucker *Catostomus platyrhynchus*

### Order: Siluriformes

#### Family: Ictaluridae (Catfish)

Channel catfish *Ictalurus punctatus*

### Order: Perciformes

#### Family: Percidae (Walleye)

Walleye *Sander vitreus vitreus*

#### Family: Centrarchidae (Bass and allies)

Largemouth Bass *Micropterus salmoides*  
Bluegill *Lepomis macrochirus*

L.E. = Locally Extirpated

Note: This list is a combination of wildlife sight record data and our best effort to predict what wildlife species live in this area in all seasons and under optimum habitat conditions.

\*With the exception of the European Starling, House Sparrow, Eurasian Collared-Dove, Ringed Turtle-Dove and Rock Dove, all birds are protected in Nevada by either the International Migratory Bird Treaty Act, Endangered Species Act or as game species. Several mammal, reptile and amphibian species are also protected as either game, sensitive, threatened or priority species. For further information on a species status, visit our web site at [NDOW.ORG](http://NDOW.ORG).

Updated: January 2011 - Peter V. Bradley  
Nevada Department of Wildlife - Elko, Nevada.

## **Appendix C:**

### **Surface Management Plans Located Partially or Wholly within the CESA**

<b>Closed Surface Management Plans</b>					
<b>BLM Serial Number</b>	<b>Name</b>	<b>Type of Activity</b>	<b>Approved Acres</b>	<b>Acres Disturbed</b>	<b>Acres Reclaimed</b>
NVN 066801	M.I. Drilling Fluids	Surface Management Notice – Barium/Barite	1.00	1.00	1.00
NVN 066850	M.I. Drilling Fluids	Surface Management Notice – Gold	3.00	3.00	3.00
NVN 066856	Cortez Joint Venture and Newmont USA Ltd.	Surface Management Notice - Gold	4.00	4.00	0.00
NVN 066872	Milchem	Surface Management Notice - Barium/Barite	1.00	1.00	1.00
NVN 066889	C-E Minerals Combustion Engineering Inc.	Surface Management Notice – Barium/Barite	1.60	1.64	1.64
NVN 066905	Western States Minerals Corp.	Surface Management Notice – Gold	1.80	1.80	1.80
NVN 066913	M.I. Drilling Fluids	Surface Management Notice – Gold	3.00	3.00	3.00
NVN 066945	Hampton, Andrew	Surface Management Notice - Gold	2.00	2.00	2.00
NVN 066948	Elquist, William	Surface Management Notice – Gold	1.00	1.00	1.00
NVN 066959	Ruskin Development Ltd.	Surface Management Notice - Gold	1.00	1.00	1.00
NVN 066964	Hampton, A.T.	Surface Management Notice – Gold	1.00	1.00	1.00
NVN 066993	M.I. Drilling Fluids	Surface Management Notice – Barium/Barite	1.00	1.00	1.00
NVN 067009	Edgar, J.M. and Sandoval, Sam	Surface Management Notice – Gold	4.00	4.00	0.00
NVN 067028	Hampton, Andrew	Surface Management Notice - Gold	1.00	1.00	1.00
NVN 067069	M.I. Drilling Fluids	Surface Management Notice – Barium/Barite	1.00	1.00	1.00
NVN 067097	Milchem and Milpark	Surface Management Notice – Gold	2.00	0.90	0.60
NVN 067115	United Chieftains Res. Inc.	Surface Management Notice – Gold	4.00	4.00	4.00
NVN 067127	Nerco Minerals Co.	Surface Management Notice – Gold	1.00	1.00	1.00
NVN 067159	Pegasus Gold Corp.	Surface Management Notice – Gold	7.30	7.30	7.30
NVN 067175	Placer dome US Inc.	Surface Management Notice - Gold	3.60	3.60	3.60
NVN 067206	Baker Hughes Inteq. and Milpark	Surface Management Notice – Barium/Barite	1.00	2.00	2.00

<b>Closed Surface Management Plans</b>					
<b>BLM Serial Number</b>	<b>Name</b>	<b>Type of Activity</b>	<b>Approved Acres</b>	<b>Acres Disturbed</b>	<b>Acres Reclaimed</b>
NVN 067210	Baker Hughes Inteq. and Milpark	Surface Management Notice – Barium/Barite	2.00	2.00	2.00
NVN 067227	Baker Resources USA	Surface Management Notice - Gold	6.00	6.00	6.00
NVN 067227	Baker Resources USA	Surface Management Notice – Gold	6.00	6.00	6.00
NVN 067316	Coral Resources Inc.	Surface Management Notice – Gold	4.90	4.90	0.00
NVN 067318	Pathfinder Mines	Surface Management Notice - Gold	0.50	0.50	0.50
NVN 067404	Alta Gold Co. and Centerra US Inc.	Surface Management Plan – Gold	10.70	10.70	10.70
NVN 067428	Placer Dome US Inc.	Surface Management Notice – Gold	4.80	4.80	4.80
NVN 067456	American Copper and Nickel Co. Inc.	Surface Management Notice – Gold	4.30	4.30	4.30
NVN 067464	Nerco Exploration Company	Surface Management Notice - Gold	0.40	0.40	0.40
NVN 067500	Centerra US Inc.	Surface Management Notice - Gold	2.30	2.30	2.30
NVN 067565	Idaho Resources	Surface Management Notice - Gold	0.10	0.10	0.10
NVN 067591	Asarco Inc.	Surface Management Notice – Gold	0.50	0.50	0.50
NVN 067603	Centerra US Inc.	Surface Management Notice – Gold	2.00	2.00	2.00
NVN 067692	Cyprus Metals Co.	Surface Management Notice – Gold	0.40	0.40	0.40
NVN 067785	Newmont Mining Corp.	Surface Management Notice - Gold	1.50	1.50	1.50
NVN 067831	First International	Surface Management Notice – Gold	1.00	0.14	0.14
NVN 067907	Amselco Explr Co., AngloGold USA Explr. Co, Cameco US Inc., and Centerra US Inc.	Surface Management Notice – Gold	1.00	0.92	0.92
NVN 067949	Cameco US Inc.	Surface Management Notice – Gold	0.50	0.00	0.00
NVN 077844	Excalibar Minerals	Surface Management Notice - Barium/Barite	0.18	0.18	0.18
NVN 078611	White Knight Gold US Inc.	Surface Management Notice – Gold	2.61	2.17	2.17
NVN 082401	Bravo Alaska Inc.	Surface Management Notice – Gold	0.11	0.91	0.64
NVN 085057	Coral Resources Inc.	Surface Management Notice – Gold	4.90	4.90	4.90
<b>Totals</b>			<b>83.6</b>	<b>101.86</b>	<b>88.39</b>

Data source: LR2000 2012

<b>Expired Surface Management Plans</b>					
<b>BLM Serial Number</b>	<b>Name</b>	<b>Type of Activity</b>	<b>Approved Acres</b>	<b>Acres Disturbed</b>	<b>Acres Reclaimed</b>
NVN 066934	Mulvaney, Richard and Smith, Walter	Surface Management Notice - Gold	1.00	1.00	0.00
NVN 066947	Cole, Dolezal, Layton, and Layton	Surface Management Notice - Gold	1.00	1.00	0.00
NVN 067037	Coral Resources Inc. and Hoalst, Dean	Surface Management Notice - Gold	2.50	2.50	0.00
NVN 067478	St. George Metals Inc.	Surface Management Notice - Gold	4.90	4.90	4.90
NVN 067563	Cole, Dolezal, Layton, and Layton	Surface Management Notice - Gold	1.00	1.00	0.00
NVN 067570	Phillips Pet-Strat. and Trainer, Donald	Surface Management Notice - Gold	0.10	0.10	0.00
NVN 082038	Geoinformatics Exploration	Surface Management Notice - Gold	0.84	0.88	0.88
<b>Totals</b>			<b>11.34</b>	<b>11.38</b>	<b>5.78</b>

Data source: LR2000 2012

<b>Current Surface Management Plans</b>					
<b>BLM Serial Number</b>	<b>Name</b>	<b>Type of Activity</b>	<b>Approved Acres</b>	<b>Acres Disturbed</b>	<b>Acres Reclaimed</b>
NVN 067453 <sup>1</sup>	Newmont USA Ltd.	Surface Management Plan – Gold	150.00	15.00	50.00
NVN 067494 <sup>1</sup>	Newmont USA Ltd.	Surface Management Plan - Gold	1,400.00	2,930.00	2,051.00
NVN 067601	Baker Hughes Inteq and BH Oilfield Operations	Surface Management Notice - Gold	417.00	417.00	0.00
NVN 067813	Barrick Gold Exploration Inc. and Cortez Joint Venture	Surface Management Plan - Gold	92.00	10.00	0.00
NVN 089286	Baker Hughes Drilling Fluids	Surface Management Notice – Gold, Lode	0.33	0.33	0.00
NVN 089334	Baker Hughes Drilling Fluids	Surface Management Notice - Gold	4.53	4.53	3.17
NVN 089501	Halliburton Energy Services Inc.	Surface Management Notice - Gold	4.45	0.00	0.00
NVN 090375	Halliburton Energy Services Inc.	Surface Management Notice - Barium/Barite	0.06	0.00	0.00
<b>Totals</b>			<b>2,068.37</b>	<b>3,376.86</b>	<b>2,104.17</b>

<sup>1</sup> A majority of these projects are located outside of the CESA.

Data source: LR2000 2012

<b>Pending Surface Management Plans</b>					
<b>BLM Serial Number</b>	<b>Name</b>	<b>Type of Activity</b>	<b>Approved Acres</b>	<b>Acres Disturbed</b>	<b>Acres Reclaimed</b>
NVN 089482	Baker Hughes Drilling Fluids	Surface Management Plan - Barium/Barite	4.8	0	0
NVN 075049	Nevada Drilling Fluids	Surface Management Plan - Gold	72.9	11.7	5.85
<b>Totals</b>			<b>77.7</b>	<b>11.7</b>	<b>5.85</b>

Data source: LR2000 2012