



United States Department of the Interior  
Bureau of Land Management  
Final: March 2007



Environmental Assessment NV-040-06-060

## **ELY ENERGY CENTER PROJECT GEOTECHNICAL SOIL BORING**

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***Location: Steptoe Valley, White Pine County, Nevada***

**Applicant/Address: Nevada Power Company - Las Vegas, Nevada and Sierra Pacific  
Power Company – Reno, Nevada**

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## ACRONYMS

ACEC	Area of Environmental Concern
AUM	Animal Unit Month
BLM	Bureau of Land Management
BMP	Best Management Practice
CEA	Cumulative Effects Area
EA	Environmental Assessment
EEC	Ely Energy Center
EIS	Environmental Impact Statement
EPM	Environmental Protection Measure
FLPMA	Federal Land Policy and Management Act
MW	Mega Watt
NDEP	Nevada Division of Environmental Protection
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
O&G	Oil and Gas
RMP	Resource Management Plan
ROW	Right-of-Way
SHPO	State Historic Preservation Office
SOP	Standard Operating Procedure
TCWC	Tri-County Weed Control
TECS	Threatened, Endangered, Candidate, and Sensitive
VRM	Visual Resource Management

## 1.0 Background Information

### 1.1 Introduction

Nevada Power Company and Sierra Pacific Power (the “Companies”) filed a Land Use Application and Permit with the Ely Field Office, Bureau of Land Management (BLM), in September 2006 to conduct geotechnical soil testing (the Project). The soil tests are required to finalize siting and design for a power generation plant, known as the Ely Energy Center (EEC) Project. An Environmental Impact Statement (EIS) is being prepared for the EEC to address potential impacts of a net 2,500 mega watt (MW) coal-fired power-generating plant, power transmission lines, and associated facilities. The Project area is located in Steptoe Valley, Nevada (**Table 1-1** and **Figure 1-1**); the South Steptoe (preferred site) and North Steptoe sites are approximately 20 miles and 48 miles north of Ely, respectively. The permit is requested for a two year period from date of issuance. It is anticipated that once work commenced, it would take approximately 14 weeks to complete, depending on weather and crew availability. After the initial fieldwork is completed, crews would need to revisit the site to coordinate water quantity/quality monitoring and reconfirm boring results during the two year permit period.

**Table 1-1 Legal Locations and Land Status**

Site	Legal Location	7.5' Topographic Map Name	Land Status
South Steptoe	T19N R64E Sections 13, 16, 17, 18, 20, 21, 28, & 29	McGill, NV Steptoe, NV	BLM
North Steptoe	T24N R64E Sections 10, 11, 14, 15, 16, 21, 22, & 23	Cherry Spring, NV	BLM

There would be four phases to the fieldwork: (1) field resistivity tests, (2) drilling soil borings, (3) drilling water monitoring wells, and (4) crosshole seismic tests. Existing roads and trails would be used as access whenever possible; otherwise access would be limited to overland or cross-country travel to the test locations. Any vehicular tracks resulting from the overland travel would be used for ingress and retraced for egress.

### 1.2 Purpose and Need

The purpose of the federal action is to respond to a request from the “Companies” for granting a permit to conduct geotechnical soil testing. The Proposed Action is needed to provide geotechnical soil data necessary for analysis, development, and subsequent construction of the proposed EEC power generation plant.

The recently signed National Energy Policy Act 2005 seeks to provide reliable, affordable energy to our nation’s consumers, and to lessen the impact on Americans of energy price volatility and supply uncertainty. The demand for electricity in the U.S. is projected to increase by 45% over the next 20 years (National Energy Policy website). To meet the growing need for electricity, reduce reliance on natural gas, increase system reliability, and reduce imports from outside of Nevada, the “Companies” have proposed to construct a power generation plant, the proposed EEC. The National Energy Policy Act promotes such improvements in the productive and efficient use of energy. Geotechnical soil borings must be conducted to ascertain structural properties of the subsurface soils in order to determine an appropriate site for the power generation plant.

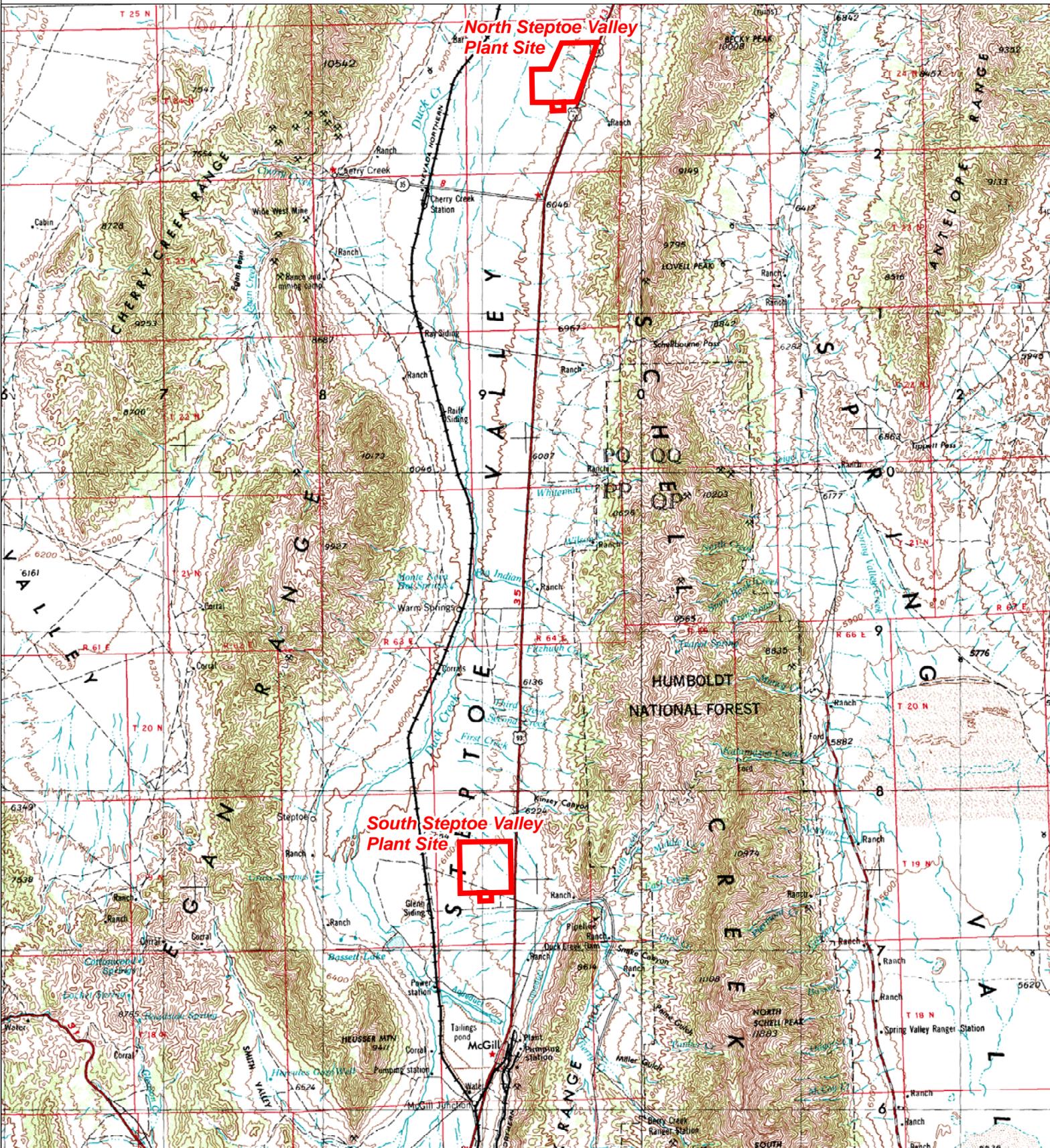
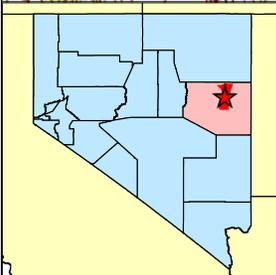


Figure 1-1. General Project Location

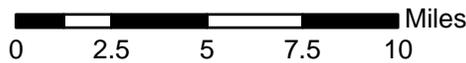


Nevada Power  
Ely Energy Center  
Well Boring EA

White Pine County, NV



1 inch equals 5 miles



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USGS 250k Quad



The purpose of this EA is to evaluate the potential environmental consequences of granting a permit to conduct geotechnical soil testing on federal lands.

### **1.3 Authorizing Actions**

The Project would occur on public lands administered by the BLM, Ely Field Office. The “Companies” would thus comply with regulations administered by the Ely Resource Management Plan (BLM 2005).

The Project would also comply with the White Pine County Public Land Use Plan.

### **1.4 Relationship to Planning (Conformance with Applicable Land Use Plan)**

The Proposed Action would be in conformance with land use plan terms and conditions of the Egan Resource Management Plan (1987), the Egan O&G Amendment, and the White Pine County Land Use Plan as required by 43 CFR 1610.5.

A FLPMA Title V right-of-way (ROW) Grant will be issued for this project, if approved.

### **1.5 Issues**

The BLM determined that public scoping was not necessary for the Project. However, the Project was internally scoped by BLM resource specialists. No issues were evident in initial Project scoping other than the need for a cultural resource inventory.

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## **2.0 Description of the Proposed Action and Alternatives**

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### **2.1 Proposed Action – South Steptoe and North Steptoe sites**

The actual soil testing activities would disturb less than 20 acres for the South Steptoe site (**Figure 2.1**) and less than 2 acres for the North Steptoe site (**Figure 2.2**). Due to density of soil boring in a portion of the South Steptoe site, a 52-acre block (**Figure 2.1** General Access) could potentially be disturbed since overland access would be required. The total area of disturbance for the Project when cross-country or overland access is included would be 87 acres for the South Steptoe site and about 5 acres for the North Steptoe site. The sites are approximately 28 miles apart along Highway 93. Both sites are on the west side of Highway 93.

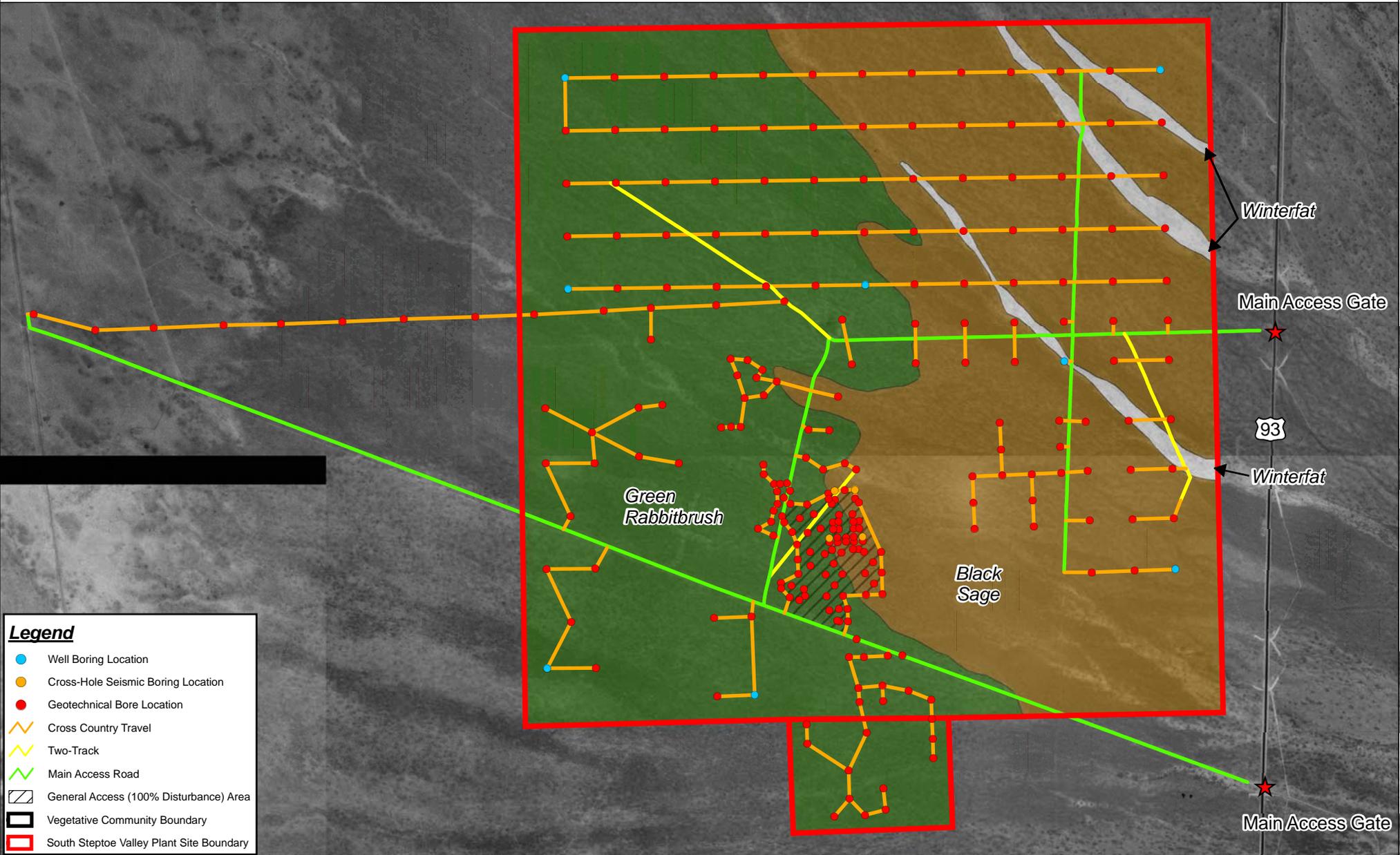
Geotechnical soil testing would provide an accurate estimation of soil and rock parameters needed to engineer the proposed EEC. Test results would be made available to the BLM. Four types of soil testing would be conducted including: field resistivity, soil boring, water monitoring wells, and crosshole seismic testing.

#### **Field Resistivity**

Field resistivity testing is performed on the ground surface using non-invasive methods and do not require the use of the geotechnical soil borings. Field resistivity testing, which measures the corrosion rate by passing electrical current through ground soils, would be performed at both sites. The South Steptoe site would require 6 tests and the North Steptoe site would require 2 tests. Resistivity sites would be located at identified boring sites. Field resistivity testing would involve one small truck and two people for approximately 3 to 4 working days in the field. Disturbance during field resistivity testing would be limited to existing tracks, if tracks were present within about 300 feet of the test location. Equipment would be carried to the boring site. Disturbance would then be limited to two people walking to the test locations. The trucks would pull out of the area using the same pathway, therefore minimizing disturbance. The boring sites where resistivity testing would take place would be determined during soil boring activities and would occur at the same locations of the soil boring sites.

#### **Soil Boring**

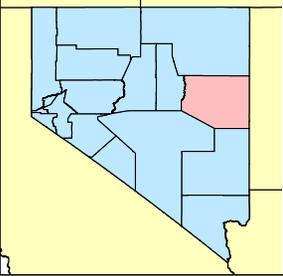
Geotechnical soil borings would be drilled to investigate the subsurface conditions. Soil borings would be performed at both sites. Soil borings would be approximately six to eight inches in diameter and 50-100 feet deep. For each drill rig on site, a crew of three would travel to the predetermined site, set up equipment, and begin. Drill sites would measure 50 feet by 50 feet (0.06 acre). The project sites are in a relatively flat area; the drill pads will not be scraped, rather the drill would just stop, level, and drill. Therefore only a small area (approximately 15 by 15 feet) would be disturbed within the pad area. Within the drill pad area, a small reserve or mud pit would be constructed for the cuttings. Topsoil would be scraped off and reserved for reclamation. Relatively few cuttings would be generated, approximately one cubic yard of cuttings for every 75 feet of depth. The time spent at each site would depend on the type of soil encountered.



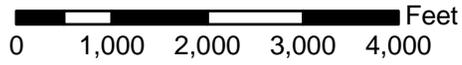
**Legend**

- Well Boring Location
- Cross-Hole Seismic Boring Location
- Geotechnical Bore Location
- Cross Country Travel
- Two-Track
- Main Access Road
- General Access (100% Disturbance) Area
- Vegetative Community Boundary
- South Steptoe Valley Plant Site Boundary

**Figure 2-1. South Steptoe Site Proposed Activity Locations and Access**



1 inch equals 2,000 feet



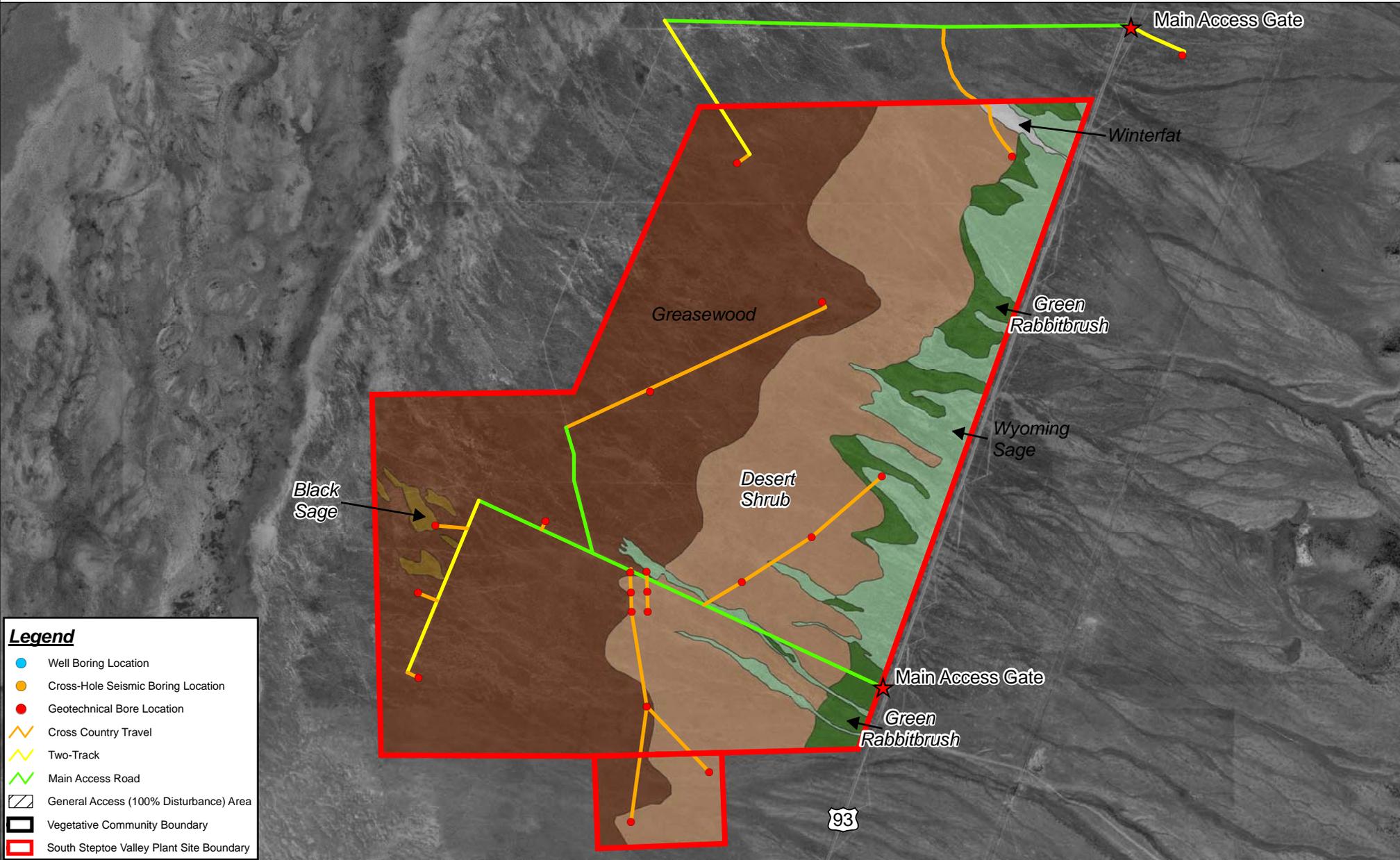
**Nevada Power  
South Steptoe Valley  
Plant Site**

White Pine County, NV

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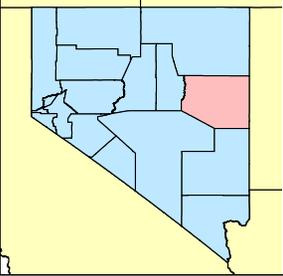




**Legend**

- Well Boring Location
- Cross-Hole Seismic Boring Location
- Geotechnical Bore Location
- Cross Country Travel
- Two-Track
- Main Access Road
- General Access (100% Disturbance) Area
- Vegetative Community Boundary
- South Steptoe Valley Plant Site Boundary

**Figure 2-2. North Steptoe Site Proposed Activity Locations and Access**

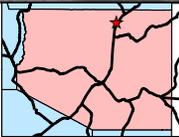


1 inch equals 2,500 feet



**Nevada Power  
North Steptoe Valley  
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The Companies plan to perform an equal number of borings at both sites for “fatal flaw” analysis; however, given that the South Steptoe site is the Preferred site by the Companies, they are proposing to perform additional soil borings to further aid in the detailed design. Performing all borings at once saves the Companies additional mobilization and processing fees. The South Steptoe site would require 139 borings (total drilling length of approximately 8,920 feet) and the North Steptoe site would require 20 borings (total drilling length of approximately 1,435 feet), see **Figures 2-1 and 2-2**. Eight of the soil boring locations included in the South Steptoe site would be for the proposed EEC railroad lead. The subcontractor can drill approximately 75 feet per day per drilling rig, yielding a total of approximately 138 rig days for the current effort. Total time in the field would depend on weather and the number of drill rigs mobilized to the site. If two rigs were mobilized, it is anticipated that the total time required would not exceed 14 weeks.



**Photo 2.1 Typical truck mounted drilling equipment**

The drill rig would access the area using existing roads and trails; however some locations may require driving overland or cross-country to the boring location. The above photograph (see **Photo 2.1**) shows typical truck mounted drilling equipment. All roads and pads would be located on relatively level ground and would not require cut or fill.

When water is encountered within a hole in cohesionless material, rotary wash drilling methods with bentonite or polymer slurry would be used. When complete, the boring holes would be backfilled with the soil cuttings or cement-bentonite grout in accordance with the requirements of the local regulations and depending on the depth of exploration. It would be the responsibility of the geotechnical subcontractor to backfill the borings as required by the appropriate regulations. Upon completion of backfilling the boring holes, the crew would go to the next boring site to set up. At no time during the work would the holes be left open or unsupervised by the drilling crew. The locations of the proposed boring sites are shown on **Figure 2-1** and **Figure 2-2**.

In addition to the drill rig, two pickup trucks would be needed to carry additional drilling equipment and workers, for a total of three vehicles and three people. The area disturbed by drilling would be limited to where the vehicles drive, the actual boring location, and the area that the drillers would stand in at the back of the rig. The drill rig would be approximately 8 feet in width, and approximately 20 to 50 feet in length. An estimated .06 acres of disturbance would occur at each boring site.

For standard augered borings, use of water is generally not necessary. If water were used, it would be for rotary wash drilling methods, used when groundwater is encountered in cohesionless soil. Based on the assumption that the depth to groundwater is in the range of 50 to 150 feet, it is not anticipated that rotary wash methods would need to be utilized. If it is necessary at any time to utilize rotary wash drilling methods, some water would be “lost” to the surrounding soil throughout drilling and additional water/slurry would be introduced throughout the drilling process. At the completion of any boring utilizing wash rotary methods, the slurry would be pumped into a tank and reused in the next boring as necessary. Any water brought onto the site would arrive in one of the pickups already on site or by water truck. Water would be obtained from private sources.

### **Monitoring Wells**

Monitoring wells would be constructed using selected deepened soil borings. Eight water monitoring wells would be drilled at the South Steptoe site. Each well would be drilled a sufficient distance below the existing water level to permit monitoring of water levels and collection of water samples throughout the year. Whenever possible, monitoring wells would be installed in augered borings as part of the geotechnical subsurface investigations. Each monitoring well would be approximately 6 inches in diameter with a 2-inch inner diameter PVC installed. Depth of the well would be dependant upon depth to the water table. The same equipment and manpower used for the soil borings would be used for the monitoring wells. The monitoring well sites are shown on **Figure 2-1**. The well pad areas for the monitoring wells would be 50 by 50 feet in size (0.06 acre), the same as the soil boring pads.

### **Crosshole Seismic Testing**

The crosshole seismic testing would utilize cased soil borings drilled for the geotechnical soil investigation plus one additional cased soil boring drilled specifically for the crosshole testing. Crosshole seismic tests would be conducted at the South Steptoe site. Approximately four tests would be required at this time. At each location, a total of three borings would be installed (one sampled and two non-sampled) to a depth of 100 feet. The three borings would be arranged in a straight line and spaced apart from one another a distance of 10 to 15 feet. Each boring would be completed with a 3 to 4-inch diameter PVC or aluminum casing (full length) set with grout inside a borehole that has a maximum diameter of 6.5 inches. The crosshole seismic test sites are shown on **Figure 2-1**. The crosshole seismic tests would utilize down-hole tools for the measurements; this equipment is self contained and would be removed from the site after testing.

### **Access Roads**

Existing roads (improved dirt and two-tracks) would be utilized where possible to access testing locations. However, some overland or cross-country travel would be necessary. No improvements would be made to existing roads. Any vehicular tracks resulting from the overland travel would be used for ingress and retraced for egress. Gravel could be placed on access roads to reduce rutting, especially on roads to monitoring wells that would be accessed on a more regular basis. If gravel were used, it would be obtained and supplied from an off-site

aggregate supplier in the Ely area. No additional roads would be developed and cross-country routes would be completely renaturalized after wells were removed.

The South Steptoe site would utilize a total of approximately 45,800 feet of access. Existing roads amount to approximately 14,400 feet. Cross-country travel would include approximately 31,400 linear feet resulting in a 14.4 acre disturbance (20 foot width). See **Table 2-1** and **Figure 2.1**.

**Table 2-1 Access Roads, South Steptoe Site**

Type of Access	Length in Feet
Main Existing Access Road (improved dirt)	11,647
Existing Two-track Roads	2,730
Cross-country Travel	31,446
Total Access Road	45,823

The North Steptoe Site would utilize a total of approximately 14,880 feet of access. Existing roads amount to approximately 8,300 feet. Cross-country travel would be approximately 6,600 linear feet resulting in a 3 acre disturbance (20 foot width). See **Table 2-2** and **Figure 2.2**.

**Table 2-2 Access Roads, North Steptoe Site**

Type of Access	Length in Feet
Main Existing Access Road (improved dirt)	5,913
Existing Two-track Road	2,371
Cross-country Travel	6,598
Total Access Road	14,882

The total disturbance for the South Steptoe site would be 87 acres (soil testing locations, block area, and cross-country access) and the total disturbance for the North Steptoe Site would be 5 acres (soil testing locations and cross-country access) for an overall disturbance of 92 acres.

### Reclamation

Topsoil would be scraped off and reserved during testing activities. Drill cuttings would be placed in a reserve or mud pit within the 50 foot square drill pad. Cuttings would be used to backfill holes, as allowed by the State of Nevada, and the remainder would be left in the reserve or mud pits. These pits would need to dry out prior to revegetation. Topsoil would be applied to the backfilled drill hole and the pit, the soil scarified, and then reseeded with an approved seed mix.

## 2.2 No Action Alternative

In accordance with BLM guidelines (H-1790-1, Chapter V), this EA evaluates the No Action Alternative. The objective of the No Action Alternative is to describe the environmental consequences that would result if the need for the Project was not met. The No Action Alternative forms the baseline environmental data from which the impacts of all other alternatives can be measured.

Under the No Action Alternative, geotechnical soil boring would not be conducted at either the South Steptoe or North Steptoe sites. Without this data, the “Companies” would not be able to evaluate the locations to ascertain the most appropriate site for the proposed power generation

plant. Further, the No Action Alternative would result in the inability to effectively engineer the foundations for the proposed EEC which would cause unnecessary costs and disturbance required for over-engineered foundations.

### **2.3 Standard Operating Procedures/Environmental Protection Measures**

The BLM would inspect the Project during and after soil boring activities, and when reclamation has been completed to ensure compliance with Standard Operating Procedures (SOPs), Best Management Practices (BMPs), Environmental Protection Measures (EPMs), and other requirements.

Implementation of the Proposed Action would comply with all applicable federal and state laws. The following agency-approved Standard Operating Procedures (BLM 1981) and applicant-committed Environmental Protection Measures that include Best Management Practices (NSCC 1994) would apply to the agency selected Alternative.

#### **BLM Standard Operating Procedures**

Removal of vegetation would be held to the minimum necessary for soil testing activities, access, and to provide for safety. Any plants found at bore hole sites would be avoided where feasible.

Monitoring for invasive and non-native weed species would be implemented during Project activities and after reclamation.

Workers would be instructed not to drive or park vehicles where catalytic converters could ignite dry vegetation and to exhibit care when smoking in natural areas. Vehicles would carry water and shovels or fire extinguishers.

Measures would be taken to minimize air quality impacts including an enforced speed limit of 25 mph on unpaved roads within the work area and minimal idling of vehicles.

Soil testing activities would be limited to times when soils are not wet or saturated, to lessen soil compaction by equipment. In addition, soil boring activities may be delayed by the authorized officer due to severely dry conditions, to prevent unnecessary erosion of soil resources.

Access would be via existing roads and trails whenever possible. Where existing roads are not available, cross-country travel would be kept to the minimum necessary. No paint or permanent discoloring agents would be applied to rocks or vegetation during work activities.

All equipment would be washed before entering the Project Area and equipment would be cleaned off before moving it within the Project Area.

If the need to use, store, and/or dispose of hazardous materials arises, which is not identified in this EA, the authorized Project person(s) would notify and seek authorization from the BLM.

Prior to work activities, all personnel would be instructed on the protection of cultural, paleontological, and ecological resources.

Any outdoor lighting used would be shielded and directed downward to the extent possible.

Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the authorized officer by telephone, with written confirmation immediately upon discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined at 43 CFR 10.2). Further pursuant to 43 CFR 10.4 (c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

All equipment and assorted materials associated with the Project must be removed within 30 days after completion of the Project. Project area cleanup would be accomplished by removing all refuse to an approved sanitary landfill. The “Companies” would likely request up to an additional 30 days to remove all equipment and materials after completion of the Project or longer if weather was prohibitive.

The placement of bore holes and vehicle movement would avoid individual animals. Any burrows or nests identified during travel to the sites and at the bore sites would be avoided.

The “no activity” period for all management actions in migratory bird habitat is from May 1<sup>st</sup> to July 15<sup>th</sup> unless a survey is done to determine no migratory bird breeding or nesting is occurring in the area. For any activity scheduled between May 1<sup>st</sup> and July 15<sup>th</sup> the following must take place: area which is going to be disturbed must be clearly identified on appropriate maps. The wildlife team would conduct breeding bird surveys to identify if migratory bird breeding or nesting is occurring in the area.

Management direction for permitted activities near sage grouse leks are as follows: 1) no surface occupancy within ¼ mile of a lek, and 2) no surface activity allowed within 2 miles of a lek from March 1<sup>st</sup> through May 15<sup>th</sup>. For sage grouse wintering grounds, disturbance should be avoided from November 1<sup>st</sup> to March 31<sup>st</sup>. No wintering grounds have been identified at either site.

## **Environmental Protections Measures**

### **Air Quality**

The generation of fugitive dust from surface activities would be controlled by BMPs (NSCC 1994). Examples include direct water application and revegetation of disturbed areas. A 25 mph speed limit would be enforced on dirt/gravel roads during fieldwork, as would minimization of idling work vehicles. All Project activities would comply with the Clean Air Act, National Ambient Air Quality Standards.

### **Soils**

No soil boring activities would take place during or immediately following rain events when the soil is too wet to adequately support equipment. However, the “Companies” would be willing to place gravel on access roads to reduce rutting and potentially allow soil boring activities to continue, especially on those roads to monitoring wells that would be accessed on a more regular basis. If gravel were used, it would be obtained and supplied from an off-site aggregate supplier in the Ely area. Should work equipment create surface ruts in excess of six inches deep, activities in the area would be delayed until the soils dried out adequately enough to prevent deep rutting. Although not anticipated, if necessary, disturbed sites would be re-graded to restore the site to approximately the original contour following work. Silt fences and/or straw bales would be used to minimize erosion if needed. No erosion hazards are anticipated.

## **Vegetation**

Upon completion of soil boring activities (including routine visits to monitoring wells), the disturbed areas would be cleaned, restored, and revegetated. Steps would be taken to regrade, minimize erosion, minimize compaction, restore natural ground cover, reestablish plant growth, and allow natural surface drainage. Rehabilitation measures planned for the disturbed areas include raking of soil and revegetation via broadcast seeding. A site-specific seed mixture would be provided by BLM.

In addition, to minimize the potential for the spread of noxious weeds, all equipment that would be used during construction activities would be washed prior to entering the Project Area.

Cacti and succulents would be avoided where possible. In areas where it is not possible to avoid, all species of cactus would be transplanted to the perimeter of the disturbance area. At the conclusion of soil boring activities, these plants would be replaced to their original locations.

## **Cultural Resources**

All construction and subsequent maintenance activities would be restricted to the cleared areas. Although not anticipated, if during the construction activities cultural resources were uncovered, the BLM would be notified and work in the area would halt until documentation and evaluation by a BLM approved archaeologist was conducted. Adverse effects to eligible properties would be avoided or mitigation measures implemented prior to resuming construction within the area of the discovery.

## **Wildlife**

Construction activities would not occur during wildlife restriction periods or pre-construction surveys would be conducted as appropriate. Migratory bird surveys are required for activities that occur between May 1 and July 15.

If construction activities were to commence during the breeding season for burrowing owls (mid-March to August), a survey to identify active nests would be conducted by a qualified biologist. However, if authorization for the Project is provided prior to the breeding season of burrowing owls; all burrows, holes, crevices, or other cavities potentially used by burrowing owls on the construction site would be collapsed after a qualified project biologist thoroughly checks them for inhabitants. This would discourage owls from breeding on the construction site.

## **Grazing**

Construction activities would be completed by September 30<sup>th</sup> in order to avoid conflicts with livestock turnout on winter pastures.

## **Hazardous Materials and Hazardous Waste**

Diesel fuel, hydraulic fluids, and engine oil products would be the only hazardous material liquids used on site. The only significant source of potential petroleum spills would be from mobile equipment. Any spills from mobile equipment would be promptly cleaned up and disposed of appropriately according to applicable Nevada Division of Environmental Protection (NDEP) and federal regulations.

## **2.4 Alternatives Considered but Eliminated**

No other alternatives met the Purpose and Need.

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## 3.0 Affected Environment and Environmental Consequences

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### 3.1 Introduction

The Project Area is located in White Pine County and is accessed via Highway 93, north of Ely, Nevada. The general area is part of the Central Nevada Basin and Range; the topography in the region is characterized by generally north-south trending basins and ranges. The Project Area is within the Steptoe Valley flanked by Schell Creek Range on the east and Egan and Cherry Creek ranges on the west. Vegetation in the general area consists of shrubland. Duck Creek runs through the valley and numerous springs in the adjacent mountain ranges drain into it. Elevations in the valley range from 5,800 to 6,300 feet amsl.

The following tables (**Tables 3-1 and 3-2**) list the BLM Critical Elements and other resources/concerns that were eliminated from further analysis within the EA and provide a brief rationale for that determination. Those critical elements and/or natural resources that are present in the Project Area or could potentially be affected are then discussed throughout this chapter beginning in **Section 3.2**.

**Table 3-1 Critical Elements Eliminated From Further Analysis in EA**

CRITICAL ELEMENT	RATIONALE FOR ELIMINATION FROM FURTHER ANALYSIS
Air Quality	No impacts to air quality are anticipated. SOPs and EPMs ( <b>Section 2.3</b> ) would be utilized during boring for fugitive dust.
Areas of Critical Environmental Concern (ACECs)	There are no existing Areas of Critical Environmental Concern near the Project Area.
Environmental Justice	There would be no impacts to Environmental Justice as no low-income or minority populations would be adversely affected.
Prime or Unique Farmlands	No Farmlands occur within the Project Area.
Floodplains	No Floodplains occur within the Project Area.
Wastes (Hazardous or Solid)	No wastes would be generated or disposed of within the Project Area.
Wetlands/Riparian Zones	No wetlands or riparian zones occur within the Project Area. A small perennial drainage was discovered in the extreme southern portion of the North Steptoe site during baseline survey, but no impacts to this drainage from the soil boring activities would occur.
Wild and Scenic Rivers	There are no designated or proposed Wild and Scenic Rivers within or near the Project Area.
Wilderness or Wilderness Study Areas	The Project would not be in Wilderness or Wilderness Study Area.

**Table 3-2 Other Resources/Concerns Eliminated From Further Analysis in EA**

OTHER RESOURCES	RATIONALE FOR ELIMINATION FROM FURTHER STUDY
Rangeland Health Standards and Guidelines	The Proposed Action is consistent with Rangeland Health: Standards and Guidelines for Healthy Rangelands (BLM 1997). The Proposed Action would not affect any of the four Fundamentals of Rangeland Health (i.e., watershed function, ecological processes, water quality, and special status species' habitats).
Woodland/ Forestry	There are no woodland/forestry resources in the Project Area, therefore there would be no woodland/forestry impacts.
Recreation	There are no existing recreation sites in or near the Project Area.
Visual	The Proposed Action is within a VRM Class III area. The Project meets the objectives of VRM Class III.
Geology/Mineral Resources	No mining claims or mineral leases occur within the Project Area. With a 92-acre area of disturbance, there would be no impacts to Geology/Mineral Resources.
Paleontology	There are no known paleontological sites/resources in the Project Area. Fossils are unlikely in the alluvial deposits of the valley floor. Fossils are not anticipated to be present within the Project Area.
Lands/Access	There would be no changes to land status or changes in access as a result of the Project.
Fuels/Fire Management	The risk of the Project creating a wildland fire would be negligible.
Socioeconomics	The Project would require approximately 10 workers for 14 weeks with periodic visits to the monitoring wells by 1-2 workers subsequent to that. There would be no socioeconomic impacts as a result of the Project.
Wilderness Characteristics	The Project would not be in a Wilderness Study Area.

Critical Elements and Other Resources/Concerns Carried Forward in EA:

Cultural Resources

Native American Religious Concerns

Soils

Water

Vegetation, including Invasive Species and Noxious Weeds

Wildlife, including Migratory Birds

Threatened, Endangered, Candidate, and Sensitive (TECS) Species

Wild Horses/Burros

Livestock Grazing

Potential impacts are discussed in this section following the description of the affected environment and are described in terms of duration (short or long term) and intensity.

## 3.2 Cultural Resources

### Affected Environment

Cultural resources are defined as any definite location of past human activity identifiable through field survey, historical documentation, and/or oral evidence. Cultural resources include archaeological or architectural sites, structures, or places, and places of traditional cultural or religious importance to specified groups whether or not represented by physical remains.

The National Historic Preservation Act (NHPA) of 1969, as amended, and its implementing regulations (36 CFR 60 and 800) require that federal agencies take into account the effects of their undertakings on cultural resources that are listed or eligible for listing to the National Register of Historic Places (NRHP); eligible or listed resources are labeled “historic properties.”

Section 106 of the NHPA requires consultations among federal agencies, like BLM, the state historic preservation office (SHPO), culturally affiliated American Indian Tribes, and other affected parties, including private land owners, to develop and evaluate alternatives or modifications to proposed undertakings, in order to avoid, minimize, or mitigate adverse effects on historic properties. Federal regulations at 36 CFR 800.5 and 800.6 detail the process by which the consulting parties determine whether undertakings will adversely affect historic properties and how the agencies consult to avoid, minimize, or mitigate the adverse effects in order to meet Section 106 requirements.

According to the Draft RMP (BLM 2005), numerous cultural resource sites have been recorded in the Spring-Steptoe Valleys hydrologic sub-basin boundary including 384 prehistoric sites, 153 historic sites, 42 multi-component sites, and 1,150 sites classified as other.

A Project-specific cultural resource inventory was conducted (Far Western 2006) on both the South and North Steptoe sites. The inventory identified a total of 16 cultural resource sites within the two Project areas.

#### South Steptoe Site

Eleven sites were recorded in this parcel, including two small prehistoric sites, eight historic trash scatters or features, and one multi-component prehistoric/historic site. The prehistoric sites were tested for subsurface cultural deposits; none were identified. One historic site, the Nevada Northern Railroad, has not been fully evaluated at this time for eligibility to the NRHP, however the BLM is recommending it as eligible to the NRHP. The remaining sites are all recommended not eligible for the NRHP.

#### North Steptoe Site

Five sites were recorded within the inventoried portion (100-meter wide corridor along proposed access roads and bore holes) of this parcel including four prehistoric sites and one historic site. The prehistoric sites were tested for subsurface cultural deposits; none were identified. All five sites are recommended not eligible for the NRHP.

### Environmental Consequences

#### Proposed Action

No NRHP-eligible cultural resource sites would be impacted by the soil boring activities. Of the 16 sites recorded during the Project-specific inventory, all but one are recommended not eligible

for the NRHP. The Nevada Northern Railroad has not been fully evaluated for the NRHP at this time; however, the BLM is recommending it as eligible for the NRHP. Therefore, this site would be avoided by Project activities. Implementation of the proposed SOPs and EPMs, as discussed in **Section 2.3**, would restrict activities to areas that have been cleared and provide protocol for discoveries.

#### No Action

Under the No Action Alternative, there would be no Project related impacts to any NRHP-eligible cultural resource sites.

### **3.3 Native American Religious Concerns**

#### **Affected Environment**

Through consultation with tribal governments (BLM 2005), 164 places of geographic interest to the Western Shoshone, Goshute Shoshone, and Southern Paiute tribes (Tribes) have been identified within the Ely District (BLM 2005; Woods 2003). Within the Steptoe Valley, a total of 13 sites were identified by the Western Shoshone and Goshute Shoshone including 5 habitation/procurement/festival sites, 2 festival/ceremonial sites, 1 burial/ceremonial site, 1 ceremonial site, 3 mythology sites, and 1 battle site. It was noted that pine nuts were gathered on both sides of the valley in the foothills and slopes of the Egan and Schell Creek ranges, rabbit and antelope drives were held in various places in the valley, some crops were grown in the valley, and deer were hunted individually and communally. No sites in the Steptoe Valley were identified by the Southern Paiute.

#### South Steptoe Site

One of the 13 places of geographic interest to the Tribes within Steptoe Valley is located near the proposed Project Area. Recorded as Site WS-131/fc (Steptoe), just south of the proposed South Steptoe site, this site was identified as the location of festivals or gatherings and a ceremonial site (Woods 2003:52). No other information was provided about this site and, therefore, it is not possible to determine its NRHP eligibility.

#### North Steptoe Site

None of the 13 known places of geographic interest to the Tribes within Steptoe Valley are located near the proposed North Steptoe site.

#### **Environmental Consequences**

#### Proposed Action

No known places of geographic interest to the Tribes would be impacted by the soil boring activities.

#### No Action

There would be no Project-related impacts to places of geographic interest to the Tribes under the No Action Alternative.

## 3.4 Soils

### Affected Environment

Within the Ely District, soil types can be generalized by landform and physiographic location (BLM 2005). Valley areas are typified by unconsolidated sedimentary deposits, including alluvial and lakebed deposits. Mountain ranges are composed generally of sedimentary, metamorphic, and igneous rocks. Areas adjacent to mountain ranges are composed of alluvial fans and related features.

The Project Area is within the basin floor of the Steptoe Valley and is relatively flat. The Geologic Map of Nevada indicates that both the South Steptoe and North Steptoe sites are located in Quaternary alluvial deposits (Stewart and Carlson 1978). However, the North Steptoe site is flanked on the west with sand dunes, categorized as locally eroded playa, marsh, and alluvial flat deposits on the Geologic Map of Nevada.

The basin floors are generally level or have gentle slopes and soils can be very deep. Soil texture ranges from moderately coarse to fine-grained. There is generally little soil profile development, although accumulations of soluble salts or silica occur at depths in some cases. Only a few basin floors are subject to high water tables and they are seldom flooded (BLM 2005).

### Environmental Consequences

#### Proposed Action

Implementation of the Proposed Action would disturb approximately 92 acres of soils. The disturbance would mainly be minor, temporary, and short-term. Access to the eight monitoring wells and the small areas around the actual monitoring well sites themselves would be left unreclaimed until an adequate level of data is collected from these wells. Temporary disturbance within the Project Area would be negligible to minor and include compaction of the soil, soil boring, and the possibility of erosion as a result of soil boring activities. The SOPs and EPMs described in **Section 2.3** would be implemented during construction activities to minimize temporary disturbance to soils. Proper drainage and sediment discharge control measures would be instituted if necessary.

#### No Action

All previously undisturbed soils would remain unaltered under the No Action Alternative. Naturally occurring erosion would continue at the present rate.

## 3.5 Water Resources

### Affected Environment

The Project Area is within the Steptoe Valley Hydrographic Basin (No. 179). It is a designated groundwater basin (BLM 2005) indicating that permitted groundwater rights approach or exceed the average annual recharge, therefore water resources are being depleted or require additional administration. Duck Creek courses through Steptoe Valley, well west of the Project Area.

### South Steptoe Site

Three unnamed intermittent drainages are located in this area. There are no wetlands or Waters of the United States on the South Steptoe site.

### North Steptoe Site

Five unnamed intermittent drainages are present in this area. A small flowing drainage was observed in the extreme southern portion of the North Steptoe site, outside of any proposed boring activity areas.

## **Environmental Consequences**

### Proposed Action

There would be no impacts to water resources. For standard augered borings, the use of water is generally not necessary. Each boring would be 50-100 feet deep. If water were used, it would be for rotary wash drilling methods, used when groundwater is encountered in cohesionless soil. Based on the assumption that the depth to groundwater is in the range of 50 to 150 feet, it is not anticipated that rotary wash methods would need to be utilized. If it is necessary at any time to utilize rotary wash drilling methods, some water would be “lost” to the surrounding soil throughout drilling and additional water/slurry would be introduced throughout the drilling process. At the completion of any boring utilizing wash rotary methods, the slurry could be spread at the ground surface or pumped into a tank and reused in the next boring as necessary. There is no available water source within or adjacent to the Project Area. Any water needed would be brought onto the site via one of the pickups already in-use for the Project.

If water were encountered within a hole in cohesionless material, rotary wash drilling methods with bentonite or polymer slurry would be used. When complete, the boring holes would be backfilled with the soil cuttings or cement-bentonite grout in accordance with the requirements of the local and state regulations and depending on the depth of exploration.

### No Action

There would be no impacts to water resources under the No Action Alternative.

## **3.6 Vegetation, Including Invasive Species and Noxious Weeds**

### **Affected Environment**

According to the Draft RMP Major Vegetation Land Cover Types (BLM 2005), the Steptoe Valley falls into the Shrub Lands vegetation type. Shrub lands consist of many plant communities including blackbrush, shadscale, salt desert scrub, winterfat, and sagebrush.

Noxious weeds are those species listed by the State of Nevada per Nevada Administrative Code 555.010. Field surveys were conducted on both the South and North Steptoe sites in October 2006 (JBR 2006). In addition, JBR also reviewed existing data provided by the Tri-County Weed Control (TCWC) program.

### South Steptoe Site

The South Steptoe site is located approximately 20 miles north of Ely, Nevada on the western side of Highway 93. This site is flatter than the North Steptoe site, located mostly on alluvial fan skirts (see **Photo 3.1**) and ranges in elevation from 6,117 feet at the northwest corner to 6,264 feet in the southeast. There are two dominant vegetation types at this site. The black

sagebrush vegetation type, dominated by black sagebrush (*Artemisia nova*), starts at the eastern boundary of the site and grades into the green rabbitbrush vegetation type to the west (**Figure 2-1**). These two vegetation types are located on the same soil type, a gravelly loam of mixed alluvium. Both vegetation types have similar herbaceous species mostly dominated by bunchgrasses. There are small inclusions of winterfat (*Krascheninnikovia lanata*).



**Photo 3.1 South Steptoe Valley Site.**

Several invasive plant species including cheatgrass, halogeton, and Russian thistle were found within the South Steptoe site, mostly along roads and in overgrazed areas such as water trough sites (JBR 2006). Only one noxious weed species, Tamarisk, was found. There were four occurrences of Tamarisk on the South Steptoe site along a dirt road that accesses the southern portion of the area. TCWC data showed one occurrence of whitetop (*Cardaria draba*) approximately 650 feet east of the eastern boundary of the South Steptoe site. Three other whitetop locations were noted in the TCWC data, ranging between 0.75 to 1 mile of the southern boundary of the South Steptoe site. One occurrence of spotted knapweed (*Centaurea masculosa*) was observed 1 mile southeast of the site boundary. A number of other whitetop occurrences were observed along the Northern Nevada Rail Line, approximately 1.5 miles to the west of the project area. No other weed occurrences within 2 miles of the South Steptoe site were noted in the TCWC database.

#### North Steptoe Site

The North Steptoe site is located approximately 48 miles north of Ely, Nevada on the western side of Highway 93. The site ranges in elevation from 5,871 feet along the western boundary to 5,986 feet at the eastern boundary near Highway 93. The soils and vegetation types change along this elevation gradient. The site is positioned on the lower toe of alluvial fans and in bottom valley land (see **Photo 3.2**). The soils on the alluvial fan are sandy, gravelly loams. The vegetation along the eastern boundary is mostly Wyoming sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), this type grades down into the valley following the drainages. Between the fingers of Wyoming sagebrush there are upland areas dominated by green rabbitbrush (*Chrysothamnus viscidiflorus*) (**Figure 2-2**). The understory of both these vegetation types are

similar with bunchgrasses such as Indian ricegrass (*Achnatherum hymenoides*) and Squirreltail grass (*Elymus elymoides*) scattered throughout the site.

The green rabbitbrush (*Chrysothamnus viscidiflorus*) vegetation type grades into the low salt desert scrub vegetation type, still located on the gravelly, sandy loam soil type of the alluvial fan. The salt desert scrub type is dominated by shadscale (*Atriplex confertifolia*) with spiny hopsage (*Grayia spinosa*), green rabbitbrush, and a number of bunchgrasses. As the soil type and geographical position changes to valley bottom alkaline sandy loam, the vegetation type changes to greasewood (*Sarcobatus vermiculatus*) (**Figure 2-2**). This type also has other salt desert scrub species such as shadscale and in some areas there are small, almost pure stands of shadscale within the greasewood. Farther to the west within the greasewood vegetation type there are inclusions of Great Basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*). Some of these inclusions are mapped while others are too small to map (**Figure 2-2**). There are fewer grasses and other herbaceous plants within the greasewood and Great Basin big sagebrush vegetation types perhaps due to the high salinity of the soil.



**Photo 3.2 North Steptoe Valley Site.**

Several invasive plant species including cheatgrass, halogeton, and Russian thistle were found within North Steptoe site mostly along roads and in overgrazed areas such as water trough sites (JBR 2006). No noxious weed species were located in this area. TCWC data showed two instances of bull thistle (*Cirsium vulgare*) approximately 1.5 miles southeast of the North Steptoe site, and no other observances within 2 miles of the site.

## **Environmental Consequences**

### Proposed Action

The Proposed Action would disturb a total of 87 acres in the South Steptoe site and 5 acres in the North Steptoe site. All of the 92 acres would eventually be reclaimed; therefore impacts to vegetation resources would be minor, temporary, and short term. The SOPs and EPMs described in **Section 2.3** would be implemented during construction activities to minimize

temporary disturbance to vegetation, avoid the spread of noxious weeds, and avoid impacting any Special Status plant species. Further, impacts to Special Status plant species are not anticipated as proposed soil boring locations would be situated out of preferred habitat types and all cacti species would be either relocated/transplanted or avoided by design. Based on the relatively undisturbed nature of the sites and the low numbers of observed non-native invasive species within the habitat (JBR 2006), the introduction, spread, and establishment of noxious weed species within either of the sites is low. SOPs and EPMs (**Section 2.3**) would minimize the potential for the spread and establishment of noxious weeds.

#### No Action

There would be no vegetation disturbed by Project-related activities under the No Action Alternative.

### **3.7 Wildlife**

#### **Affected Environment**

Available water and vegetation coverage are the limiting factors for wildlife within the Ely District. Small mammals, birds, amphibians, and reptiles inhabit the area. Big game species in the Ely District include Rocky Mountain elk, mule deer, pronghorn antelope, and desert bighorn sheep. Of these, only pronghorn antelope occur on a regular basis in the Project Area which contains pronghorn range and a pronghorn migration corridor (BLM 2005).

Pronghorn antelope are found in all major valleys in White Pine County (Nevada Department of Wildlife 2003). They prefer gently rolling to flat topography in sagebrush/grassland habitat. Pronghorn forage on grasses, forbs, and browse plants. Within the Ely District, pronghorn depend on sagebrush for both food and cover (BLM 2005). Pronghorn are widely distributed throughout the valleys and mountain foothills in the summer and are associated with low sagebrush habitat with mixed vegetation.

Raptor species likely use the areas for foraging opportunities, but no nests or nesting activities were observed in the Project Area during field visits. American kestrels (*Falco sparberius*) and northern harriers (*Circus cyaneus*) were the most common raptors seen in the areas, although several burrowing owls (*Athene cunicularia hypugea*), a BLM sensitive species discussed below, were also observed at the South Steptoe site. Other wildlife species commonly observed during site visits to each area included horned larks (*Eremophila alpestris*), meadow larks (*Sturnella neglecta*), and black-tailed jackrabbits (*Lepus californicus*).

There is no live water, riparian areas, or wetlands near the proposed geotechnical soil boring locations to support fisheries or aquatic wildlife.

#### South Steptoe Site

There is bighorn sheep range to the east and west, in the Schell Creek and Egan ranges, outside the Project Area. There is no black bear range within this site. There is “potential distribution” of elk across the site. The closest mule deer crucial winter range is located to the east in the Schell Creek Range; however, none is present within the site. A small herd of mule deer were observed in the Steptoe Slough area approximately five miles to the south. The site provides year-round habitat for pronghorn antelope, along with a pronghorn migration corridor along Highway 93 that parallels this site.

### North Steptoe Site

There is bighorn sheep range to the east and west, in the Schell Creek and Cherry Creek ranges, outside the Project Area. Mule deer range occurs in the mountains to the east and west of the site, outside the Project Area. There is no black bear range within this site. There is “potential distribution” of elk across the site. The site provides year-round habitat for pronghorn antelope, along with a pronghorn migration corridor along Highway 93 that parallels this site.

## **Environmental Consequences**

### Proposed Action

Some wildlife in the Project Area would be directly impacted by soil boring activities. Slower animals (reptiles) and any small mammals in burrows may be run over or buried during actual activities. More mobile animals, such as birds and larger mammals, would likely be displaced into similar and adjacent habitats. Impacts on the wildlife communities in the Project Area would be minor, temporary, and short-term.

Although there is year-round habitat for pronghorn antelope within both sites, only 92 acres would temporarily be disturbed. This represents a very small amount in comparison to the many acres of suitable habitat outside these areas. Temporary displacement during soil boring activities would likely occur due to the noise and the presence of workers and equipment. Impacts would be minor, temporary, and short-term.

The SOPs and EPMs described in **Section 2.3** would be implemented during construction activities to minimize temporary disturbance to wildlife.

### No Action

There would be no impacts to wildlife species under the No Action Alternative.

## **3.8 Threatened, Endangered, Candidate, and Sensitive (Special Status) Species**

### **Affected Environment**

#### Federally Listed Species

Of the federally listed animal species in the Ely District, the yellow-billed cuckoo, southwestern willow flycatcher, and desert tortoise do not occur in White Pine County (BLM 2005). Although bald eagles (*Haliaeetus leucocephalus*), do occur in the general area (Threatened), there is no bald eagle habitat within the Project Area. The bald eagle roosts and nests near large bodies of water that provide a good source of the eagle’s preferred food, fish. Suitable habitat for roosting is not present in the vicinity of either of the proposed sites, nor within a several mile radius of the sites, although bald eagles are known to occur around Bassett Lake, in Steptoe Valley, during the winter months. It is likely that bald eagles could occasionally use the South Steptoe site for foraging opportunities, although Bassett Lake would be the preferred location.

The greater sage grouse, listed as Potentially Threatened, is also a BLM sensitive species. The Project Area does provide potential sage grouse habitat, but no wintering grounds have been identified at either site. Sage grouse typically occupy sagebrush communities and breed in relatively open strutting grounds or leks. Summer habitat consists of mixed sagebrush with areas of wet meadows, riparian habitat, or irrigated agriculture fields. No summer range occurs at either site. Further discussion on this species is provided below.

No federally listed plant species occur in White Pine County (BLM 2005).

### BLM Sensitive Species

#### Plants

Based upon BLM and Nevada Natural Heritage Program (2006) data requests, none of the seven BLM sensitive plant species with the potential to occur in White Pine County, occur within the Project Area. However, both sites contain cactus species, which are protected by the State of Nevada.

In addition to cactus species, Eastwood milkweed (*Asclepias eastwoodiana*) and Monte Nevada paintbrush (*Castilleja salsuginosa*) are both listed as special status species with the BLM. Eastwood milkweed occurs in drainages and moisture accumulating microsites within the more alkaline soil types in barren areas (NNHP 2001). There is potential for the Monte Nevada paintbrush to occur in Steptoe Valley; however, Monte Nevada paintbrush is wetland dependant (NNHP 2001) and suitable habitat does not exist at the Steptoe Valley sites. Suitable habitat is not present at the proposed sites for any of the other special status plant species listed for White Pine County.

#### Animals

Several BLM sensitive animal species have the potential to be in the Project Area and are listed in the following table.

**Table 3-3 BLM Sensitive Animal Species**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Habitat Type</b>
Pygmy rabbit	<i>Brachylagus idahoensis</i>	Sagebrush, Mohave desert vegetation
Northern goshawk	<i>Accipiter gentiles</i>	Conifer-aspen, riparian-wetlands, sagebrush
Golden eagle	<i>Aquila chrysaetos</i>	All habitats
Western burrowing owl	<i>Athene cunicularia hypugea</i>	Sagebrush, Mohave desert vegetation
Ferruginous hawk	<i>Buteo regalis</i>	Pinyon-juniper, riparian-wetland, Mohave desert vegetation, sagebrush
Swainson's hawk	<i>Buteo swainsoni</i>	Pinyon-juniper, Mohave desert vegetation, sagebrush
Greater sage grouse	<i>Centrocercus urophasianus</i>	Riparian-wetland, sagebrush
Loggerhead shrike	<i>Lanius ludovicianus</i>	Pinyon-juniper, sagebrush
Black rosy-finch	<i>Leucosticte atrata</i>	Sagebrush
Vesper sparrow	<i>Pooecetes gramineus</i>	Sagebrush, Mohave desert, pinyon-juniper
Lucy's warbler	<i>Vermivora luciae</i>	Riparian-wetland, Mohave desert vegetation, sagebrush
Gray vireo	<i>Vireo vicinior</i>	Pinyon-juniper, Mohave desert vegetation, sagebrush
Sonoran mountain kingsnake	<i>Lampropeltis pyromelana</i>	Riparian-wetland, sagebrush, Mohave desert vegetation
Short-horned lizard	<i>Phrynosoma douglassii</i>	sagebrush, Mohave desert vegetation

Sage grouse are a BLM sensitive species distributed throughout the sagebrush biome that comprises much of the Great Basin (BLM 2004). While sage grouse habitat requirements differ throughout its life cycle; they are generally associated with areas dominated by species of big sage brush (*Artemisia tridentata ssp.*) (BLM 2004). As stated earlier, the Project Area does provide limited potential sage grouse habitat, but no wintering grounds have been identified at either site and no summer range is present.

The pygmy rabbit (*Brachylagus idahoensis*), a BLM sensitive species, is the smallest North American rabbit and is found within big sagebrush (*Artemisia tridentata ssp.*) communities in the Great Basin and adjoining states (Gabler et al. 2001). It is one of only two rabbit species in North America that excavates its own burrows; the other being the volcano rabbit in Mexico (Siegel Thines et al. 2004). Pygmy rabbits are a sagebrush obligate found primarily in areas of soft soil and tall, dense stands of primarily big sagebrush. Typical habitat varies with location but typically consists of at least 25% *Artemisia tridentata ssp.* (Rauscher 1997). Pygmy rabbits may be patchily distributed across the landscape; inhabiting islands of dense sage found in areas of soft soils such as washes, small swales, roadside berms, etc. (Rauscher 1997).

Based on a review of the habitat requirements of other federal and state listed and BLM sensitive animals whose range includes White Pine and Eureka Counties (Nevada Natural Heritage Program 2006), the burrowing owl and the loggerhead shrike could occur in the area on a somewhat regular basis. The burrowing owl is found in dry, open areas and nests in burrows dug by other animals. During field visits in fall 2006, several burrowing owls were flushed from burrows at the South Steptoe site. Loggerhead shrikes select dense, relatively tall shrubs for nesting. In addition, many of the other BLM sensitive species, especially the bird species likely have passed through, occurred within, and/or have used either site for foraging opportunities.

#### South Steptoe Site

A historic sage-grouse lek (Glen Siding lek) is located near the southern boundary of the site. This site was surveyed on April 28, 2006 and it was reported that the site was not being used by sage-grouse and that existing habitat no longer supports this site as an active lek (Nevada Power 2006). The proposed subsurface investigations are not expected to have an impact on local sage-grouse populations.

As mentioned above, burrowing owls were observed at several locations within this southern site. Burrowing owls typically migrate south from this area from November through February/March.

#### North Steptoe Site

There are no Special Status Species found on the North Steptoe site location.

## **Environmental Consequences**

#### Proposed Action

No direct impacts to any Special Status plant or animal species are anticipated to occur from implementing the soil boring activities. Regarding plant species, soil boring activities would not take place in suitable habitat for either the Eastwood milkweed or the Monte Nevada paintbrush (*Castilleja salsuginosa*), thus no impacts are anticipated. In addition, as stated in **Section 2.3**, all cacti species would be avoided by design or relocated/transplanted. Regarding animals, any species using the area during construction activities would likely be displaced into similar and

adjacent habitats. Impacts to Special Status animal species from boring activities would be minor, temporary, and short-term.

The SOPs and EPMs described in **Section 2.3** would be implemented during construction activities to ensure that if construction activities were to commence during the breeding season for burrowing owls (mid-March to August), a survey to identify active nests would be conducted by a qualified biologist. Active nest areas would be avoided until after the chicks fledge. However, if authorization for the Project is provided prior to the breeding season of burrowing owls; all burrows, holes, crevices, or other cavities potentially used by burrowing owls on the construction site would be collapsed after a qualified project biologist thoroughly checks them for inhabitants. This would discourage owls from breeding on the construction site and allow soil boring activities to proceed as scheduled.

#### No Action

There would be no Project-related impacts to TECS species under the No Action Alternative.

### **3.9 Wild Horses/Burros**

#### **Affected Environment**

There are no wild horse ranges designated with the Ely District. However, 24 herd management areas have been delineated and encompass 5.36 million acres of BLM-administered land in the Ely District (BLM 2005).

#### South Steptoe Site

The South Steptoe site is not within or near a herd management area.

#### North Steptoe Site

The North Steptoe site is in the Antelope Herd Management Area (HMA) which includes 389,900 acres (BLM 2005).

#### **Environmental Consequences**

#### Proposed Action

Any wild horses near the North Steptoe site would likely be displaced into similar and adjacent habitats during soil boring activities. The North Steptoe site would impact five acres of land within the 389,900 acre herd management area. Impacts to wild horses would be negligible, temporary, and short-term.

#### No Action

There would be no Project-related impacts to wild horses under the No Action Alternative.

### **3.10 Livestock Grazing**

#### **Affected Environment**

Livestock grazing units in the Ely District are all classified as perennial allotments. The grazing allotments in the Project Area are within the Great Basin ecological system. Presently there are 239 grazing allotments and 139 grazing permittees in the Ely District, of which 129 are cattle

operators and 10 are sheep operators. Currently, evaluations of the allotments are being conducted to determine if the standards for rangeland health are being achieved (BLM 2005).

#### South Steptoe Site

The South Steptoe site is within the Duckcreek Flat Allotment (#412) and the Steptoe Allotment (#415). The Duckcreek Flat Allotment includes 32,406 acres supporting 1,347 cattle animal unit months (AUMs). The season of use is from March 1<sup>st</sup> to June 15<sup>th</sup> and August 1<sup>st</sup> to February 28<sup>th</sup> (spring/summer/fall/winter). This allotment has been evaluated and is listed as management category Maintain. The Steptoe Allotment includes 44,025 acres supporting 2,836 cattle AUMs. The season of use is from March 1<sup>st</sup> to February 28<sup>th</sup> (spring/summer/fall/winter). This allotment has been evaluated and is listed as management category Maintain.

#### North Steptoe Site

The North Steptoe site is within the Cherry Creek Allotment (#403) which includes 153,107 acres supporting 6,562 cattle AUMs. The season of use is from May 1<sup>st</sup> to February 28<sup>th</sup> (spring/summer/fall/winter). This allotment has been evaluated and it falls into the management category of Improve.

### **Environmental Consequences**

#### Proposed Action

Under the Proposed Action, 87 acres of the Duckcreek Flat Allotment and 5 acres of the Cherry Creek Allotment would be disturbed. These disturbances amount to less than 1 percent of each allotment. Impacts to grazing would be negligible, temporary, and short-term. Cattle using these areas would be displaced during actual soil boring activities into other areas of the allotment.

#### No Action

There would be no Project-related impacts to livestock grazing under the No Action Alternative.

### **3.11 Mitigation and Monitoring**

Appropriate mitigation and monitoring has been included with the Proposed Action (see **Section 2.3**) and no additional mitigation is proposed based on the impact analysis.

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## **4.0 Cumulative Effects**

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Cumulative effects are those impacts to the environment that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). The Cumulative Effects Area (CEA), for this Project has been defined as the proposed boundaries of the South and North Steptoe sites, including a half-mile buffer around each site boundary. The CEA consists of over 6,000 acres of public land.

### **Past Actions**

Past activities in the CEA have included the construction of a meteorological tower and associated buried power line near the North Steptoe site, cattle grazing/range improvements, and likely minor recreational use such as hunting.

### **Present Actions**

Besides the proposed soil testing activities, ongoing cattle grazing activities/range improvements and recreational use occurs within the CEA.

### **Reasonably Foreseeable Actions**

Once the soil boring activities are completed, the “Companies” would utilize this information to aid in the siting and conceptual design of the EEC Project for a power generation plant. An EIS has been initiated that would assess the potential impacts of that Project.

### **Cumulative Effects**

The proposed soil boring activities on 92 acres (approximately one percent of the CEA) would be temporary and short-term with negligible to minor impacts; therefore it would not contribute cumulative effects to resources in the area. The Proposed Action is a precursor to support the proposed EEC power generation plant. The cumulative effects of the EEC power generation plant would be analyzed in an upcoming EIS.

## 5.0 Consultation and Coordination

### Intensity of Public Interest and Record of Contacts

There is general public interest in this type of development. The Proposed Project was posted on the Ely Field Office website ([http://www.nv.blm.gov/ely/nepa/ea\\_list.htm](http://www.nv.blm.gov/ely/nepa/ea_list.htm)).

### Summary of Public Involvement

Besides an internal review and approval by the Ely Field Office, and a posting of the Project on the Ely Field Office's NEPA Project website, no additional public involvement is planned.

**Table 5-1 Internal District Review**

Ely Field Office, BLM	Resource
Jack Tribble	Acting AFM
Doris Metcalf	Realty Specialist, Lands, NEPA
John Longinetti	Range
Nate Thomas	Cultural Resources, Native American Religious Concerns
Gary Medlyn	Soils, Water, Watershed
Ben Noyes	Wildhorse Specialist
Brad Pendley	Wildlife (including Migratory Birds, Raptors), TECS
Paul Podborny	Wildlife
Bonnie Waggoner	Vegetation, Weeds/Invasive non-native Species
Bruce Winslow	Recreation, Wilderness, VRM
Bill Wilson	Geology

**Table 5-2 List of Preparers**

Name	Title	Responsible for the Following Section(s) of this Document
<b>JBR Environmental Consultants, Inc.</b>		
Jenni Prince Mahoney	NEPA Specialist / Archaeologist	EA Document Preparation, Cultural Resources
Ryan Clerico	Senior Scientist	GIS Data
Greg Brown	Division Manager / Biologist	EA Document Preparation and Review, Vegetation, Wildlife, TES
<b>Far Western Anthropological Research Group, Inc.</b>		
Amy Gilreath	Project Manager	Cultural Resource Inventory
Gregory Seymour	Principal Investigator	Cultural Resource Inventory
<b>Nevada Power Company</b>		
Brenda Shank	Environmental Staff, Engineer	POD Preparation/Document Review/Project Management
Eileen Wynkoop	Manager, Environmental Services	Project Management/Document Review

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