

ENVIRONMENTAL ASSESSMENT

SILVER BELLS PROJECT

NV-040-04-022

Submitted by:

David Free

September 2004

I. Introduction

David Free has submitted a plan of operation pursuant to 43 CFR 3809. The proposed plan outlines the methods to be used to remove the pozzolanic material and then reclaim the disturbed areas.

Geologic estimates of pozzolanic ash deposits with less than 15 feet of overburden are approximately 80 million cubic feet or 4,000,000 tons on the White Sand claims alone. It is estimated that approximately 100 tons of material could be processed per day. This represents about 5 semi-tractor trailer loads per day (20 tons per truck load). Life of the project is expected to be approximately 12 years.

The ash occurs most often as a white, continuous layer not more than 15 feet thick resting comfortably above the Panaca Bed. Typically above the ash layer lies varying thickness' of alluvium containing silt, sand, and gravel. Alluvium directly above the Panaca Bed usually indicates that the ash layer is not present.

While textures of the volcanic ash vary with location, the pure ash is white and granular. The ash has hardened in some locations, but is still easily fractured. If the ash layer is not contaminated with clay, it would break apart easily in the hand to the consistency of very fine sand. (Klomp 2002)

Need for Proposal

The proposed action would help meet the demand for cement additives in southern Nevada and elsewhere in the Southwestern United States. It would provide economic opportunity and is part of the multiple- use of public lands.

Relationship to Planning

The plan of operation is in conformance with 43 CFR 3809 and the Caliente Management Framework Plan approved in 1982. Objective 1.0, under minerals, states "...encourage the search for and production of locatable minerals in the planning area. Consider mining to be the primary use of lands (especially around known mining districts) that are shown to contain valuable minerals in commercial quantities. Specifically, mining areas listed in URA Step3.42A, para-marginal and sub-marginal resources and undiscovered resource areas classified and hypothetical and speculative (also shown on the overlay). Work with operators to assure that environmental damage is commensurate with potential value.... The following are mines and Mining Districts in the planning unit that are considered to belong to the Para-marginal category ... SE 5-9 Panaca Pozzolan Deposits....". The proposed action would be in this category.

The proposed action is consistent with the Lincoln County Master Plan Public Land and Natural Resource Management Element, updated 1997, which states "...it is the policy of Lincoln County to encourage mineral exploration and development consistent with custom and culture and to eliminate unreasonable barriers to such exploration and development....". The proposed action is also consistent with custom and culture element and community stability element of aforementioned master plan.

Issues

Potential VRM issue identified. Proposed project is within the view shed of Cathedral Gorge State Park in a VRM class II area.

II. Description of Proposed Action and Alternatives

A. Proposed Action

Mining

The proposed operations are located in Lincoln County, Nevada, in Township 1 South, Range 68 East, western one-half of section 19 and Range 67 East south one-half of section 16 of the Pioche Mining District (Mount Diablo Range and Meridian). The claims are Chain Claims 1-8 (hereafter referred to as west site) and White Sand 1 to 10 (hereafter referred to as the portal site). (See Map 1) The Portal Site was mined previously during the 1950s and 60s and the material used in the construction of Glen Canyon Dam. (See Photo 1)

The proposed action is to remove pozzolanic ash in bulk from 1 acre cells. No more than 5 acres would be disturbed at any given time. Total number of acres that would be disturbed by the proposed action would be 12. The bulk material would be removed for commercial processing off site. When all the pozzolanic material is removed from a cell another cell would be opened.

Since the material is in level deposits, a bulldozer (probably a cat D8) would be used to remove the surface growth medium (top 12 inches) as well as the remaining overburden. The surface growth medium would be stockpiled at the edge of the area to be disturbed to allow it to remain until the non-growth medium overburden is replaced following removal of the pozzolanic ash. The same bulldozer can then rip the pozzolanic material (ash) to break it up and make it readily available to be loaded into dump trucks with a wheel loader. The bulldozer would also move the ash into raised furrows to facilitate use of the wheel loader to load the trucks.

The following mitigation measures would be employed to control dust if it becomes a problem:

1. Concurrent reclamation would prevent more than 5 acres (including mine site access roads) from being exposed at any specific time.
2. Because of the small scale of the operation, no more than five truckloads would be mined and hauled per day.
3. Dusty portions of access roads would be graveled or addressed through additional measures.
4. Roads would be watered, as necessary.
5. Haul trucks would be covered to prevent the pozzolanic material from blowing out.

In order to minimize visual impacts of the proposed action mining equipment and trucks would be parked and stored out of sight of the highway and the state park.

No fuel or oil would be stored on site. Fueling of machinery on site would be in accordance to

with Nevada Department of Environmental Protection (NDEP) recommendations and guidelines. Fuel or oil spills would be taken care of on an as needed basis in accordance with NDEP regulations.

Access Roads

Access routes would involve existing roads. There is an existing road (already in place for fifty years) from Highway 93 to the Portal Site. Haul trucks would use Highway 93 to haul to an offsite processing facility. To access West Site trucks would use the Pan American Mine road and then turn south on a county road. It is estimated that 1,555 feet of road would be constructed to access the West Site. The road would be 12 feet wide and would be reclaimed following the closure of the cells to which it leads. This results in 18,660 square feet of area to be reclaimed. The existing county road would be bladed and maintained. As mining operations proceed and additional roads are needed to access areas immediately adjacent to the claim area, these short "access corridors" would be placed directly above unmined cells. Thus, when reclamation is completed, all traces of such corridors would be gone as the surface growth medium is replaced and the area seeded according to the stated plan.

Reclamation

Reclamation for this site would involve concurrent reclamation of those portions of the disturbed areas that would not be disturbed further. The idea of performing required reclamation of disturbed lands as the Plan of Operation proceeds is not a new one, but one which in this instance lends itself to this particular application. Seeding of re-contoured areas would of necessity occur between October 1 and March 15 of any given year due to germination timetables and growth year constraints. Since some re-vegetative and permanent stabilization procedures may require more than one growing season to become completely established, such an on-going program can provide ample information for evaluation and monitoring over the long term of an extended project. Monitoring should occur through site visitation and inspection by the appropriately qualified BLM personnel for 2 growing seasons.

Utilizing this concept of concurrent reclamation, this proposed action would actually involve opening of "cells" where removal of the pozzolanic ash material would occur following the removal and storage of the surface growth medium and then the remaining overburden. Each "cell" would be accessed from an adjoining cell or from an access track on an unmined cell. Thus, as the material is removed and then the overburden is replaced and re-contoured, followed by the replacement of the surface growth medium and its re-contour and the seeding, all traces of the disturbance would be removed simultaneously. Mined cells and access corridors would thus be reclaimed and restored to their previous undisturbed state, as far as possible.

As a "cell" is opened, the surface growth medium would first be carefully removed and placed on an adjacent cell or along the edge of the cell being opened until it is needed to be replaced on the original cell following replacement and re-contouring of the overburden which was removed to expose the ash for removal. Upon replacement of the surface growth medium it would be given a finish contour using a smaller (an 8-N ford tractor, for example) landscaping-type tractor prior to broadcast seeding of the area to be reclaimed. This would be done in order to more accurately restore the original contours and grading and to minimize the impact and change of contour of the area as it was prior to the disturbance of the cell.

Care would be taken to avoid importation of seeds of noxious weeds and other non-native invasive species into the area. If haul trucks or other mining equipment transverse an area of noxious weed infestation then the trucks and equipment would be cleaned prior to entering the project area. The area to be traversed by the haul trucks is currently stable. Cheatgrass (*Bromus tectorum*) is part of the vegetative component in the project area. The percentage of cheatgrass can fluctuate wildly on an annual basis in response to precipitation timing and amount. Research has shown that seeding and establishment of perennial vegetation is effective in controlling cheatgrass. Therefore, while seeds of cheatgrass (*Bromus tectorum*) are present, the net amount of cheatgrass should not increase due to the concurrent reclamation. If noxious weeds are encountered in the project area then the operator would take measures to control or eradicate them ie. spray with appropriate herbicide, mechanical or hand removal, use grazing animals.

Care would be taken to minimize potential soil erosion due to wind and water. The potential for water erosion is low due to infrequent precipitation. Catch basins would be constructed in ephemeral drainages to catch soil material in case of a rainfall event. Potential wind erosion is minimized by concurrent reclamation of the mining cells. If stockpiled growth medium is not replaced on a mining cell by the second growing season then the growth medium would be seeded with a short-lived perennial to maintain agronomic characteristics of the soil.

Migratory bird nest surveys would be conducted if mining operations begin in a previously unmined area during nesting season (1 May to 15 July).

B. No Action Alternative

Under the no action alternative the proposed mining project would not take place.

C. Alternatives Considered But Eliminated From Detailed Analysis

The characteristics of the deposit do not lend themselves to other methods of mining (tunneling for example). Therefore other methods were eliminated from consideration as being uneconomical or impractical.

III. Affected Environment and Environmental Consequences

A. Proposed Action

The proposed action is not anticipated to impact special status species (Federally listed, proposed or candidate Threatened or Endangered Species, Nevada and BLM sensitive species); air quality, forestry resources; flood plains, wetlands, and riparian areas; livestock grazing; recreation; wilderness values, areas of critical environmental concern, and wild and scenic rivers; prime or unique farmlands; environmental justice, cultural, paleontologic, and historical resource values; water quality; wild horses; Native American religious concerns; wastes, hazardous and solid; hazardous fuels/urban interfaces, wildlife and migratory birds.

Location and General Setting

The Ely district is located in the east central portion of Nevada. The proposed mining operation is located in Lincoln county Nevada in Range 67 East, Township 1 South, south one-half of Section 16 and Range 68 East Township 1 South, west one-half of Section 19. The proposed project is located in the Highland Peak grazing allotment and the Highland Peak Herd Management Area. Elevations range from 5800 feet to 6000 feet. Precipitation is 8-12 inches per year.

Soils and Vegetation

Soils are Ursine-Denmark-Sierocliiff association. These soils range shallow to moderately deep, well-drained, nearly level to moderately steep soils on terrace tops, terrace side slopes, and alluvial fans. The characteristics of these soils severely limit any type of commercial development (agricultural, residential or recreational) or other application except for their present application, which is range land. The in depth analysis can be found in "A Soil Survey of Meadow Valley Area, Nevada-Utah," (USDA, USDI , University of Nevada 1971)

The mining claims fall within three range sites; Semi-desert Limy Terraces, Semi-desert Shallow Terraces and Semi-desert Loamy Slope. A range site is a unique combination of soil and vegetation. Soils are gravelly, well-drained. Elevations range from 5800 feet to 6000 feet. Precipitation is 8 - 12 inches per year. Semi-desert Limey Terraces and Semi-desert Shallow Terraces represent 95 percent of the area. Dominant vegetation includes black sagebrush, Utah juniper and grasses. The Semi-desert Loamy Slope range site represents a small percentage (5 percent or less) of the area. Dominant vegetation includes big sagebrush and perennial grasses. The in depth analysis can be found in "A Soil Survey of Meadow Valley Area, Nevada-Utah," (USDA, USDI , University of Nevada 1971)

Soils and Vegetation Consequences

It is anticipated that the reclaimed areas would support vegetative communities similar in species composition and structural diversity to the pre-mining vegetation. For areas with existing soil cover and vegetation, the goal is to have an average distribution of two perennial plants per 4 square feet. Personnel would monitor the plant dispersal and adjust the seed mix, if appropriate, to meet this goal. At the Portal Site, there is presently little or no available soil cover and correspondingly little vegetation due to previous mining operations. This area is not expected to meet this goal, since there is no available growth medium to recover these areas. Post reclamation re-vegetation is expected to be sparse in this area.

Some soil loss would occur due to wind and water erosion of the access roads and mining cells prior to reclamation. Adequate mitigation measures are discussed in the proposed action.

Procedures in the proposed action would prevent the loss of agronomic characteristics of the stockpiled growth medium.

Water Quality

There is no perennial surface water. Ephemeral drainages are found throughout the area. Depth to the underground aquifer is greater than 300 feet.

Water Quality Consequences

Implementation of the proposed action would not impact water quality. The Army Corps of Engineers has reviewed the mining plan of operation and have determined that the two mine sites would not involve any discharge of dredged or fill material into the waters of the United States. Catch basins are in place in the ephemeral drainages that drain the area of proposed disturbance at the Portal Site. These catch basins have been tested by previous rainfall events and have proven effective in keeping material from washing down into the main wash. Catch basins would be constructed at the West Site in the ephemeral drainages to perform the same function.

Air Quality

The project area is designated as a Class II airshed and is generally considered good. Some criteria pollutants are generated in southern California and Las Vegas, Nevada and are transported by prevailing southwest winds to the project area. Other pollutants are generated by smoke from wildfires and transported into the area, however are temporary in nature and do significantly impact overall air quality in the region.

Air Quality Consequences

Impacts to air quality would inevitably occur during mining. They would be transitory and temporary, limited in duration, and would end at the completion of the proposed action. Long-term impacts to air quality are not anticipated. Changes likely to occur in the local air quality would be caused by exhaust emissions from mechanized equipment and fugitive dust emissions from paved and unpaved roads and mining operations. Exhaust emissions would be significantly lower, quantitatively small in comparison to fugitive dust emissions and would not affect regional air quality.

Fugitive dust would originate through vehicle travel, land clearing, ripping the pozzolanic material, truck loading operations, hauling, and wind erosion from cleared areas along with naturally occurring desert wind events. Dust control mitigation measures would be implemented for the duration of the project and are expected to maintain adequate air quality levels. Once the reclamation process has been completed, fugitive dust emissions from operations would cease and typical air quality standards would return to background levels.

Recreation

Recreation opportunities are those that involve more rural pastimes. Limited amounts of sight seeing, off-road vehicle operation, camping, hiking, hunting, trapping, and wildlife viewing are among the recreational uses in the area. South of the project area is Cathedral Gorge State Park, which is a popular destination with approximately 60 visitors per day. Cathedral Gorge offers more structured recreational opportunities with overnight camping facilities, picnic areas, improved hiking trails and interpretive rangers.

Recreation Consequences

The area of disturbance by the proposed mining operation is small enough that it would not impact recreational opportunities in the area.

Visual Resources

The proposed action is located within a VRM Class II. The objective of Class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. The project area has been classified as a VRM Class II due to its proximity to Cathedral Gorge State Park.

Visual Resource Consequences

Due to the fact that the proposed action could not be seen from any established trails or roads within the State Park, it was determined that the Class II VRM objectives were satisfied.

The mitigation measures outlined in the proposed action section of this EA, which include re-contouring and re-seeding, utilizing visual design techniques, would lessen the visual impacts of the proposed action from US 93 north of the State Park and elsewhere in the region.

Wetlands/Riparian

There are no wetlands or riparian areas located on or near the claims.

Cultural Resources

Cultural resource survey was conducted 19 July 2004. This inventory located some isolated finds. These isolated finds are not eligible for the National Register of Historic places, per the State Protocol Agreement between the Bureau of Land Management and the Nevada State Historic Preservation Office. Therefore this project would have no effect on historic properties.

Livestock Grazing

The proposed project area is in the east central portion of the Highland Peak grazing allotment, which is grazed by sheep from about January into March.

Livestock Grazing Consequences

The proposed operation would occur in the extreme east-central portion of the allotment near the allotment boundary. The BLM would notify the permittee of the mining operation prior to his seasonal use of the area. He would herd his sheep to circumvent any pozzolan mining operations. There would be a short-term loss of grazing for the duration of the project. Once reclamation is completed, there would be no long-term impact to grazing.

Invasive, Non-native Species (Including Noxious Weeds)

When the project area was visited in 2004 no noxious weeds were observed in the proposed mining area or along the access roads to the sites. However; previous noxious weed surveys in the Panaca and Caselton areas identified tamarisk, Dalmatian toadflax and spotted knapweed.

Cheatgrass occurs in the project area at a cover density estimated to be less than 10 percent. Disturbed and un-reclaimed areas elsewhere in the Panaca region may be dominated by cheatgrass.

Invasive, Non-native Species (Including Noxious Weeds) Consequences

A noxious weed assessment for the project area determined that the potential for a noxious weed problem is low. Successful establishment of perennial vegetation during post-mining reclamation efforts, plus implementation of the mitigation measures contained in the proposed action, would inhibit potential establishment of noxious weeds on this site. The re-establishment of some cheatgrass is expected. However, it is anticipated that there would be no net increase of cheatgrass.

Wildlife and Migratory Birds

Various wildlife species including large and small mammals, avian species and reptiles common to the Great Basin can be found in the project area. Mule deer, coyotes, bobcats rabbits, and various rodents are the prominent mammals in the project area. Common avian species include sparrows, larks, jays and ravens. Reptiles include western rattlesnakes, gopher snakes and various lizards.

Special Status Species

The area provides no suitable habitat for federally listed threatened and endangered species found in Lincoln County. Elevation is above 3800 feet which is outside desert tortoise habitat. The lack of perennial water results in the absence of aquatic and riparian habitats. The southwest willow flycatcher is found south of the 38th parallel and is dependent on riparian habitat. The location of the proposed project is north of the 38th parallel. Federally listed fish species are dependent on perennial water.

The Nevada Natural Heritage Program maintains a list of sensitive species. The BLM sensitive species list is taken from the Nevada Heritage Program list. No sensitive species have been encountered in the project area. Schelessner pincushion cactus has been documented west and south of Cathedral Gorge State Park near the project area. Rayless tansy aster has been documented on the Pan American road approximately 2-3 miles northwest of the project area. Long calyx egg-vetch has been documented north of the project area. The soils and vegetation in the project area do not provide habitat for these sensitive species. (See <http://heritage.nv.gov/atlas> for descriptions of habitat.)

Wild Horses

The proposed project would be located along the extreme eastern boundary of the Highland Peak Herd Management Area (HMA). Appropriate Management Level is 20-33 wild horses. Approximately 40 wild horses use this general area on a year-long basis.

Wild Horse Consequences

The proposed action would result in a minimal short term loss of habitat. Following reclamation, habitat would be restored. Due to small area of disturbance, the wild horses can easily avoid the area during mining operations. Total disturbance would not exceed 5 acres at any given time.

Socio-Economic

The proposed project is located in Lincoln County Nevada. The population of Lincoln County as of the 2000 census was 4,165 people organized into 1540 households and 1010 families. Most of the county's population is found in the communities of Caliente, Panaca, Pioche and Alamo. Sixteen point five percent of the population lives below the poverty line. Government is the largest employer in the county. Good paying jobs in private industry are few. Agriculture is the largest private industry in the county. Unemployment hovers around 10 percent. No immediate project offers new employment near existing communities, many residents travel over 100 miles one way a day to their employment in Clark County or the Nevada Test Site. Lincoln County was forced to eliminate 2 jobs this year because of shrinking tax revenues.

Socio/Economic Consequences

Implementation of the proposed action would provide economic benefits to Lincoln County and its residents. It is anticipated the project would create 15-20 jobs at \$10-20/hour rate. The project would increase the tax base of the county and increase economic activity. The new jobs would generate approximately \$1.5 million of economic activity using a multiplier of 3. The custom and culture element of the Lincoln County Master Plan are met by the creation of new mining jobs, which reflect customary employment. The project would increase the tax base of the county and increase economic activity. Yet the scale of the proposed project is small enough that there would be no impact on existing infrastructure (housing, roads, schools, etc).

Paleontological Resources

In 1975 bison bones were discovered in Cathedral Gorge State Park. Subsequent investigation by Desert Research Institute in 1996, 1998 and 1999 revealed 5 more sites. Bones recovered to date are those of females and young. Bones are unbroken and show no signs of being processed by native peoples for meat. It is postulated that the bison died elsewhere and were carried into the park by a flood event. The bones are pre-historic in age 650-800 years old. Bones at some sites are separated by a hundred years of sediment. (Rhode 2004)

No paleontological resources were located in the cultural resource inventory conducted over the project area. Techniques used in this survey were such that most cultural and paleontological resources existing in the project area visible to surface examination should have been found. If however, cultural or paleontological resources are subsequently discovered that could be adversely affected by project related activities the Ely District Manager would be immediately informed.

B. No Action Alternative

Under the no action alternative the impacts described above would not occur.

C. Cumulative Impacts, Visual Resources

According to the BLM handbook Guidelines for Accessing and Documenting: Cumulative Impacts (1994) the amount of analysis that is necessary can be greatly reduced by limiting cumulative analysis only to those issues and resource values identified during scoping that are of major importance. The issue and resource value of major importance or public concern, which would be analyzed for cumulative impacts, is impacts to visual resources.

Cumulative impacts result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertake such other actions. Cumulative impacts could result from individually minor, but collectively significant actions, taking place over a period of time (Council on Environmental Quality, Regulations for Implementation of NEPA, 1508.7).

Past Actions

Cathedral Gorge State Park was established in 1935 to draw attention to and preserve the unusually well formed erosional features of the Tertiary Lake bed sediments of the Panaca Formation. The Miller Point overlook offers scenic views directly into the gorge and on southward into the Panaca Valley.

An inactive pozzolan mine, located immediately north of the Park, has been intermittently worked since the mid-1950s when an effort was made to supply pozzolan to the Glenn Canyon Dam project (Lory Free, personal communication). This inactive pozzolan mine immediately north of the Park was re-sampled under a mining notice, and is now awaiting a possible Plan of Operations, environmental review, and appropriate bonding for renewed mining. Reclamation under the notice has not yet been initiated.

Present Actions

There is one pozzolan mine north of the proposed project. The area is used for casual OHV use and some organized OHV events. Agricultural activity in the area is winter grazing of sheep.

David Free has submitted a Plan of Operations with an environmental assessment. He wants to work the claims along the proposed park expansion boundary. He plans to mine five acres in one acre increments.

Reasonably Foreseeable Future Actions

The Nevada Division of State Park has submitted a Recreation and Public Purpose (R&PP) application to expand the Cathedral Gorge State Park an additional 3/4 miles to the north. Within this addition, the proposed mine areas would not be visible from U.S. Highway 93, but could be seen from the extreme northwest corner of the addition along the access road to the Portal site.

OHV activity around the Park could increase due to the improved access along the pole line road. Riders could more easily find or develop unauthorized routes into the Park. Future OHV

races may travel over portions of the power line road.

Should there be an increase in demand and price for this type of pozzolanic material, the proposed project could be expanded. Other parties may be attracted to the area to initiate additional pozzolan mining operations.

Impacts-Proposed Action

Past and present actions (pozzolan mining and OHV use) have contributed to “visual resource impact” to Cathedral Gorge State Park. Reasonably foreseeable future actions would also contribute to such impacts.

The northern portions of the pole line road would be more easily seen from the potential future Park addition than from within the existing Park boundaries. Mitigation measures for dust control and re-vegetation, addressed in the proposed action, would be applicable to the proposed Park addition.

Impacts-No Action Alternative

The no action alternative would not contribute to cumulative impacts to visual resources.

IV. Proposed Mitigation Measures

Appropriate mitigation has been included in the Proposed Action. No additional mitigation is proposed based upon the results of the impact analysis.

V. Monitoring

Appropriate monitoring has been included in the Proposed Action. No additional monitoring is proposed based upon the results of the impact analysis.

References:

<http://heritage.nv.gov/atlas>

Free, Lory M. Provo Utah. Personal communication

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Morefield, J.D. 2004. Nevada Natural Heritage Program. Personal communication

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USDA, USDI, University of Nevada. 1971. Soil Survey of Meadow Valley Area, Nevada-Utah. 167p.

Consultation and Coordination

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Jody Nartz- Wild Horses

Nathan Thomas- Archeology/Historic/Paleontological

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Lynn Bjorklund-Reclamation

Paul Podborny- Wildlife/Migratory birds/Special status plants and animals

Preparer(s)

Paladin Range Services

Highland Peak 7.5' Quads
 Pioche
 Bennett Pass
 Panaca

Figure 1 Silver Bells Pozzolan Mine Project Lincoln Co., Nevada

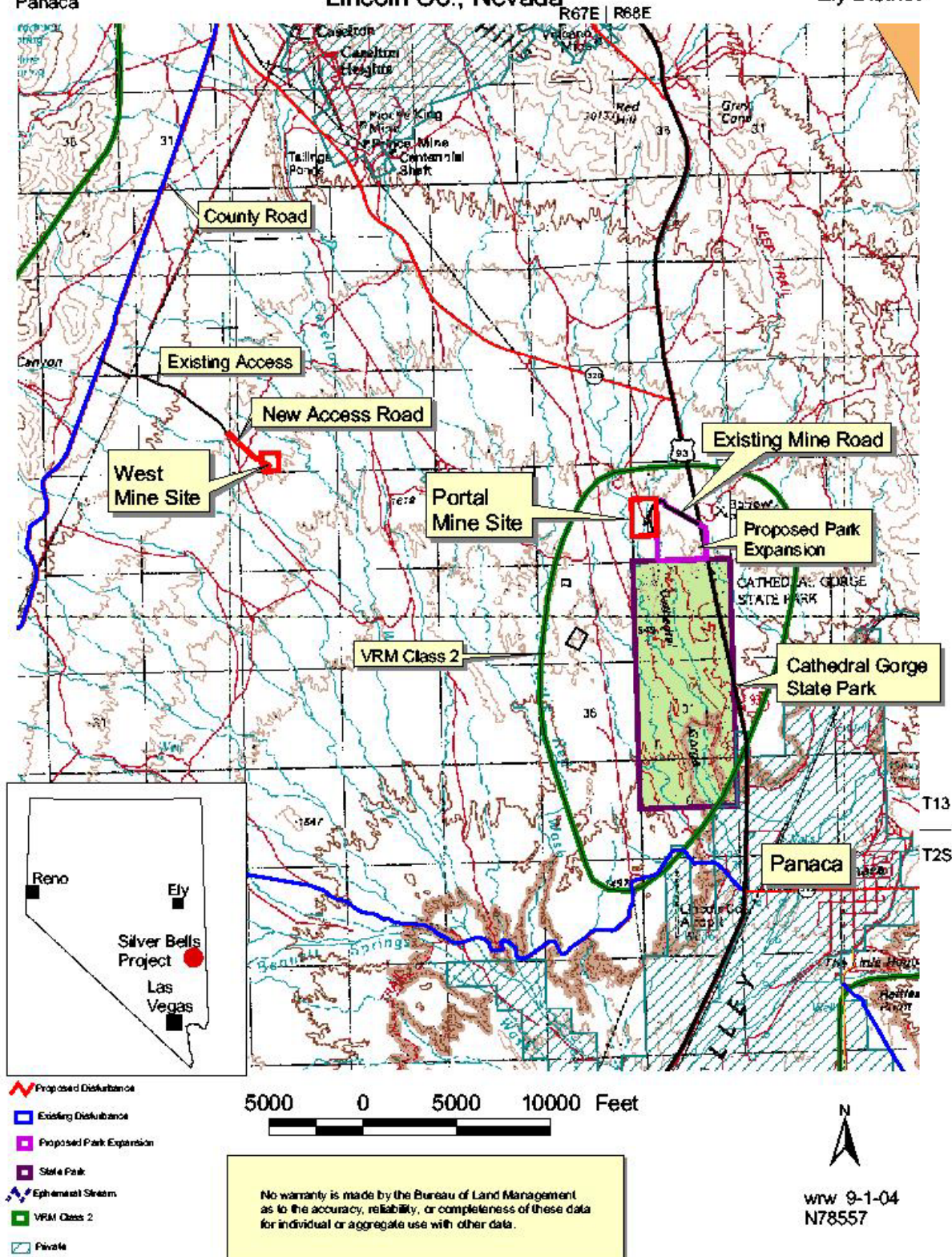


Photo 1. Silver Bells Project, Portal Site



Portal Site, looking southeast toward Panaca in top right. Cathedral Gorge State Park extends from the far right center of the gorge on southward (right). The Miller observation Point is barely visible on the far ridge of the Gorge. The graveled road, truncated by the left of the photo, is the existing access to the portal area mine site. Mining would occur in the low valley between the left center of the old mine area to about the left edge of the photo.