

**CALIFORNIA ENVIRONMENTAL QUALITY ACT
INITIAL STUDY**

The Department of Toxic Substances Control (DTSC) has completed the following document for this project in accordance with the California Environmental Quality Act (CEQA) [Pub. Resources Code, div. 13, § 21000 et seq] and accompanying Guidelines [Cal. Code Regs., tit. 14, § 15000 et seq].

PROJECT TITLE: ARSENIC RELATIVE BIOAVAILABILITY STUDY		CALSTARS CODING: 14968 900223 83
PROJECT ADDRESS: EMPIRE MINE STATE HISTORIC PARK	CITY: GRASS VALLEY	COUNTY: NEVADA
PROJECT SPONSOR: Department of Toxic Substances Control (DTSC)	CONTACT: Perry Myers, DTSC Project Manager	PHONE: (916) 255-3708

APPROVAL ACTION UNDER CONSIDERATION BY DTSC:

Initial Permit Issuance Permit Renewal Permit Modification Closure Plan
 Removal Action Workplan Remedial Action Plan Interim Removal Regulations
 Other (specify):
 Surface Soil Sampling Investigation Activities

STATUTORY AUTHORITY:

California H&SC, Chap. 6.5 California H&SC, Chap. 6.8 Other (specify):

DTSC PROGRAM/ ADDRESS: 8800 CAL CENTER DRIVE SACRAMENTO, CA 95826-3200	CONTACT: Perry Myers, DTSC Project Manager	PHONE: (916) 255-3708
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PROJECT DESCRIPTION:

EXECUTIVE SUMMARY:

The Department of Toxic Substances Control (DTSC) has prepared this Initial Study to evaluate the potential environmental effects of a proposed Field Sampling Plan (FSP) at the Empire Mine State Historic Park (EMSHP), Nevada County, California. The FSP was prepared to establish protocol for conducting soil sampling activities as part of an Arsenic Relative Bioavailability Study (Study) being conducted by DTSC in accordance with an United States Environmental Protection Agency (EPA) Brownsfield Training, Research and Technical Assistance Grant. The term bioavailability is defined as the amount of chemical that is actually absorbed into the human body. DTSC is a public agency with primary approval authority over the proposed FSP, and the designated lead agency as defined by the California Environmental Quality Act (CEQA) Public Resources Code (PRC) 21000 et seq., and CEQA Guidelines, California Code of Regulations (14 CCR) 15000 et seq.

The goal of the Study is to determine the range of arsenic bioavailability that may exist in contaminated soil at former abandoned mine land (AML) sites and develop better methods to determine the proposed human health effects caused by exposure to arsenic. The Study is also intended to develop an assessment tool that would allow risk assessors to reliably predict the relative risk based bioavailability of arsenic in soil in a scientifically sound, defensible and cost effective manner. DTSC intends to produce an arsenic bioavailability guidance document in addition to the assessment tool that will assist in the proper characterization of arsenic at former AML sites.

DTSC has consulted with the Department of Parks and Recreation (DPR) to allow for the proposed sampling investigation at the Empire Mine State Historic Park (EMSHP) located in Grass Valley, Nevada County, California. The proposed sampling action will consist of the collection of 30 to 60 soil samples and be conducted in two separate events, each event lasting no longer than 3 to 5 working days. The proposed project does not make any provisions for DTSC to make any remedial action decisions or conduct any remedial action activities; the Study's funding was provided solely for the specified investigation and research activities.

In addition to the FSP, DTSC has prepared a Quality Assurance Project Plan (QAPP), and Site-specific Health and Safety Plan (HASP) to allow for the proposed collection of soil samples at the EMSHP. The FSP, in conjunction with the project QAPP and Site-specific HASP constitute the proposed Project's decision document. In accordance with the California Environmental Quality Act (CEQA), DTSC has prepared an Initial Study and draft Negative Declaration for the proposed soil sampling action project.

PROJECT BACKGROUND: Arsenic is the main chemical of concern at a majority of former gold mines in the California Mother Lode and the Southern California desert areas. The California Department of Conservation has identified more than 47,000 abandoned mines in California which present potential threats to human health and the environment from arsenic, mercury and other heavy metals, acid mine drainage and physical hazards. At a majority of these sites, arsenic has been determined as the primary threat to human health.

At present, the only available techniques for estimating the relative bioavailability of arsenic are time consuming and expensive. While animal studies (in vivo bioavailability) can be conducted for a specific site, the associated cost and time requirements are generally prohibitive. Bioavailability is a term used by several branches of scientific study to describe the way chemicals are absorbed by humans and other animals if swallowed. In general, most risk assessments assume that the site-specific relative bioavailability of arsenic in soil is 100%. However, DTSC believes that the majority of naturally occurring arsenic sites have significantly reduced arsenic relative bioavailability. Therefore, using the customary default of 100% relative bioavailability leads to an overestimation of risk and excessive cleanup costs. Consequently, many public and private entities avoid the remediation and redevelopment of arsenic contaminated sites in favor of uncontaminated sites.

The objective of the Study is to determine the range of arsenic bioavailability that may exist in contaminated soil at former mine sites, and to develop better methods for determining the human health effects caused by exposure to arsenic at mine sites, calculating health risk, and developing health based cleanup goals for arsenic. As previously mentioned, the proposed project does not make any provisions for DTSC to make remedial action decisions or conduct remedial action activities. The project's Grant funding was provided solely for specified investigation and research activities.

Local Setting: The EMSHP is located at 10791 East Empire Street in Grass Valley, Nevada County, California. Situated on the western slope of the north-central Sierra Nevada Mountain range, the Park is located approximately 50 miles northeast of Sacramento. East Empire Street traverses the Park in an east-west direction. North Empire Street (also known as State Route 174) traverses the Park from northwest to southeast and then extends along the eastern boundary of the Park and the Union Hill area. The approximately 856 acre EMSHP is surrounded by a variety of land uses which include limited commercial, industrial, open space and residential.

Area Setting: The EMSHP has many natural features, including forested areas, riparian habitat along Little Wolf Creek and the South Fork of the Wolf Creek, and an extensive trail system used for recreational purposes. The EMSHP contains several abandoned mine and mill operations which were consolidated during the Empire Mine's 100 years of operation and closed in 1956 prior to the state's acquisition of the property. Also present at the EMSHP are a wide variety of cultural and archeological resources associated with the historic mining and mill operations.

Site History: In California, and throughout the western United States, abandoned mine lands pose a major threat to human health and the environment, and present a significant challenge to the revitalization of adjacent communities. Many of these former mine sites are situated within California's high growth and expanding population areas. The threats posed by these mine sites are complex, and unfortunately often overlooked, or unrecognized. This situation presents a threat to the safety, development and economic vitality of these communities.

From 1851 to its closing in 1956, the Empire Mine was the oldest, largest and most productive gold mine in California. Added to the State Park System in 1975, the 856 acre Empire Mine property contains numerous historic (i.e., cultural) and biological resources, and 12 miles of public hiking trails. During the Empire Mine's one hundred year span of operation, arsenic containing waste rock and slurry tailings derived from mining processes were deposited across the EMSHP property. DTSC selected the EMSHP as the first Study investigation location due to the extensive number of former mine sites and elevated concentrations of arsenic present within the property boundaries.

PROJECT ACTIVITIES: DTSC, as the recipient of the EPA Grant, coordinated with DPR in the preparation of the QAPP, FSP and HASP. DPR would assist DTSC with the sampling effort and provide on-site consultation to ensure that sampling activities would not impact any sensitive archeological, cultural or biological resources. The proposed field sampling action would be conducted in two separate events with the goal of obtaining sufficient sample material to conduct the Study.

First Field Sampling Event

All soil excavation and soil sampling will be completed under observation of a DPR approved archeologist and biologist as required by DPR. It is expected that samples will be collected from trenches using a small back-hoe or rubber tracked excavator and that 30 samples (3 samples each from 10 locations) would be collected. The individual samples would be placed in 5-gallon containers and field logged by a geologist consistent with ASTM Method D 2488 Standard Practice for Description and Identification of Soil (Visual-Manual Procedure). The samples will be sent off-site under chain of custody for additional processing and analysis. Any remaining sample material will be archived at an appropriate storage area for the duration of the project. The first round of analysis will include in-vitro (laboratory) analysis, wet chemistry and mineralogical determination using XRF and X-Ray Diffraction (XRD). These results will be analyzed to determine which samples will undergo further analysis and, if necessary, the location and scope of the second round of sampling.

Second Field Sampling Event

If evaluation of the results from the first sampling event indicate an insufficient number of those samples are candidates for in vivo bioavailability testing, or that other locations identified within the EMSHP have a higher probability of providing samples for in-vivo bioavailability testing that would provide more useful information to the Study, a second sampling event would be conducted. The second sampling event is expected to explore five additional sample locations, but a maximum of ten locations may be identified for this event to meet the needs of the Study. All soil sampling will be completed under observation of an EMSHP approved archeologist and biologist as required by DPR. It is expected that these samples will be collected from trenches using a small back-hoe or rubber tracked excavator and that 15 (3 samples from each location) will be collected. The samples will be analyzed in a manner similar to the first field sampling event, and will include in-vitro analysis, wet chemistry and mineralogical determination using XRF and XRD. These results will be analyzed to determine which samples will undergo in-vivo analysis.

Sample Locations and Medium: Because the objective of the Study is to develop an assessment tool that will allow consultants and risk assessors to reliably predict the in vivo relative bioavailability of arsenic from mine sites, only soil samples will be collected. Specific sample locations are subject to change based on a number of factors including, but not limited to restrictions by DPR, inconsistencies with arsenic concentrations as detected by field XRF and/or the identification of more suitable sampling locations. The general areas proposed for sampling at the EMSHP include; the Betsy Mine, Conlon Mine, Empire Mine waste dump, Pennsylvania Mine, Prescott Hill Mine, Sebastopol Mine, Sand Dam area, Woodbury Mine, Power Line Trail (several areas along this trail segment) and Stacy Lane Pond.

Locations will be trenched, if possible, and samples taken along the exposed vertical profile. The trench depth will be approximately four feet or encountered bedrock. Specific sample locations are dependent on the physical characteristics of each general location (e.g., presence of waste rock and tailings, access for equipment). It is anticipated that a maximum of three depth discrete samples will be taken at each specific sample location if the soil characteristics change with depth.

The maximum estimated number of sample locations will yield an expected total of 30 individual soil samples from each of the two sampling events (a maximum of 10 locations with 3 samples at each location for each event). The individual soil samples will be approximately 5 gallons in volume, yielding an expected maximum volume of 15 gallons per sampling location. The maximum number of soil samples will not exceed 60 and the maximum volume removed from the EMSHP is expected to be no larger in volume than six 55 gallon drums in total. Sampling will commence after completion of a satisfactory CEQA review and access permission is granted by the DPR.

Field Activities: Field work will require a minimum of two DTSC employees and up to two DTSC designated sub-contractors. Soil sampling will be implemented using an excavator and hand tools from layers identified during excavation to a maximum depth of four feet below ground surface. Backhoe or small track excavator work will be completed by a DTSC designated contractor. Each sampling event is expected to last 3-5 days and will be conducted during daylight hours Monday through Friday.

A primary staging location for equipment will be established in consultation with DPR. Each sampling location will have a secondary staging location that is expected to encompass a few hundred square feet. The total area used for staging and excavation for all sampling events is expected to be less than 10,000 square feet. Equipment will be limited to that necessary to complete sampling activities, and will include a small rubber tracked excavator towing a trailer with a water tank, two “gator” vehicles to transport equipment and personnel, and a standard pickup truck to transport samples.

During the sample collection, water will be employed as needed to maintain dust control in the area. The HASP includes dust action levels and air monitoring for the protection of sampling personnel that are also protective of the public. All field work will be conducted under the oversight of DPR, in accordance with the FSP, QAPP, and HASP.

ENVIRONMENTAL IMPACT ANALYSIS:

1. Aesthetics

Project Activities Likely to Create an Impact: None.

No activities associated with the proposed project have the potential to impact aesthetics.

Description of Baseline Environmental Conditions: The Park is located in a mixed evergreen forest predominantly consisting of second growth ponderosa pines, incense cedar and Douglas-Fir.

Mining activities that took place in the 1800's and 1900's have altered the natural landscape and created features such as old mining trails, shafts, and abandoned artifacts which contribute to the historic character of the Park. The scenic quality of the Park has been preserved through the establishment of open space areas, public forests, conservation areas and State Route (SR) 174, a state-designated scenic highway (Nevada County 1996), which bisects the Park property. Numerous official and user created (i.e. volunteer) trails traverse the Park, and heavy recreational use of specific areas has resulted in the creation of erosion scars.

The General Plan for the Park (DPR 1978) identifies two Panoramic View overlooks which are defined as designated locations for the public to observe expansive vistas of the surrounding landscapes. However, DPR reports that since 1978, these overlooks have become overgrown with vegetation and no longer provide Park visitors with expansive vistas.

Analysis as to whether or not project activities would:

- a. Have a substantial adverse effect on a scenic vista.

Impact Analysis: The proposed Project will consist of the collection of limited soil samples from specified areas of the Park. Limited equipment will be required for the proposed project, and if any project related material, or equipment requires overnight storage, it will be stored outside of the view of State Route 174. The proposed sampling action is of short duration, requires minimal equipment and will have no impact on any existing scenic vistas with expansive vistas. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway.

Impact Analysis: The proposed Project will consist of the collection of limited soil samples from DPR approved areas of the EMSHP. DTSC will coordinate the sampling event with DPR to ensure that the sampling action will be conducted in a manner that will not cause damage to any scenic resources located within the Park. No impact.

Conclusion:

- Potentially Significant Impact

- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

c. Substantially degrade the existing visual character or quality of the site and its surroundings.

Impact Analysis: The proposed Project will consist of the collection of limited soil samples from specified areas of the EMSHP. Any tailing piles disturbed during the proposed sampling event would be re-graded to their historic formation. DTSC will coordinate with DPR to ensure that the proposed Project will not impact designated cultural, historical or archeological resource areas, and will not impact or degrade the existing visual character or quality of the EMSHP or surrounding area. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Impact Analysis: The proposed Project will not require the installation of new lighting. All project related soil sampling activities are scheduled to occur during daylight hours, thereby eliminating the need for new lighting, or associated glare. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

2. Agricultural Resources

Project Activities Likely to Create an Impact: None.

The following activities have the potential to impact agricultural resources:
 No activities associated with the proposed project have the potential to impact agricultural resources.

Description of Baseline Environmental Conditions:
 The EMSHP is located in Nevada County, California. The Nevada County General Plan (1996) defines goals, objectives and policies that support the conservation of land designated as Open Space. County Open Space includes agricultural land, areas with mineral and other natural resources and outdoor recreational values.

The Nevada County General Plan (1996) reports the abundance of agricultural resources within the county, including specialized farmlands, grazing and timber operations. The EMSHP does not support any agricultural operations or farmlands.

Analysis as to whether or not project activities would:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

Impact Analysis: As previously addressed in the Description of baseline Environmental Conditions, the EMSHP does not support agricultural operations or farmlands. Implementation of the proposed project would not affect any category of California farmland. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

b. Conflict with existing zoning or agriculture use, or Williamson Act contract.

Impact Analysis: There is no land designated under the Williamson Act contract located within the EMSHP (California Department of Conservation, 2008). The proposed project does not contain any activity that would conflict with existing zoning for agricultural use. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural uses.

Impact Analysis: No farmland is present within or near the EMSHP. Therefore, implementation of the proposed project would not result in the conversion of farmland to non-agricultural use. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

3. Air Quality

Project Activities Likely to Create an Impact:

The following activities have the potential to impact air quality:

No activities associated with the proposed project have the potential to impact air quality.

Description of Baseline Environmental Conditions:

The EMMHP is located in the Mountain Counties Air Basin (MCAB) which is under the jurisdiction of the U.S. Environmental Protection Agency (USEPA) Region IX. A portion of the MCAB, including Sierra, Nevada and Plumas counties comprise the Northern Sierra Air Quality management District (NDAQMD) (California Air Resources Board 2008a). The EMSHP, site of the proposed project is located in western Nevada County.

Property owners and land managers are subject to air quality planning programs required by the federal Clean Air Act of 1970 (CAA), its 1990 amendments, and the California Clean Air Act of 1988 (CCAA). Both the federal and state clean air statutes provide for ambient air quality standards pertaining to air pollutants, timetables for progressing towards achieving and maintaining ambient standards, and the development of plans to guide air quality improvement efforts by state and local agencies. Ambient air pollutants, called criteria pollutants are pollutants for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set.

The USEPA is responsible for setting National Ambient Air Quality Standards (NAAQS) and established national area designations for six criteria pollutants after the passage of the Clean Air Act of 1970. These pollutants include carbon monoxide (CO), ozone (O³), nitrogen dioxide (NO²), sulfur dioxide (SO²), lead, particulate matter 10 microns or less in diameter (PM¹⁰), and particulate matter 2.5 microns or less in diameter (PM^{2.5}). If an area does not meet (or contributes to an ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard

for the pollutant, it is designated as “non-attainment.” If an area meets the national primary or secondary ambient air quality standard for the pollutant it is designated in “attainment.” An area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant is designated “unclassifiable.”

The California Air Resources Board (CARB) is the lead state agency responsible for air quality and assisting local air districts in California. CARD has set California area designations for ten criteria pollutants including ozone, PM¹⁰, PM^{2.5}, CO, NO², SO², Sulfates, lead, hydrogen sulfide, and visibility reducing particulates (VRPs). If a pollutant concentration is lower than the standard, the area is classified as “attainment” for that pollutant. If an area exceeds the standard, the area is classified as “non-attainment” for that pollutant. If there is insufficient available data to determine whether the standard is exceeded in an area, then the area is designated “unclassifiable” (CARB 2008b).

NSAQMD is the local regulatory agency that develops and implements air quality plans to identify air pollution levels, sources of air pollution, and attainment strategies for the region where the proposed FSP at the EMSHP will be implemented.

Table 1: Air Quality Standards Based on 2006 Nevada County Air Quality Designations

Pollutant	State Designation	National Designation
Ozone	Non-attainment	Non-attainment (Western Nevada County)
		Unclassified/Attainment (Eastern Nevada County)
PM ¹⁰	Non-attainment	Unclassified
PM ^{2.5}	Unclassified	Unclassified/Attainment
Carbon Monoxide	Unclassified	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	Not Applicable (N/A)
Lead	Attainment	N/A
Hydrogen Sulfide	Unclassified	N/A
Visibility Reducing Particles	Unclassified	N/A (CARB 2007b)

Sensitive Receptors: Federal and state air standards specify the concentration of pollutants the public could be exposed to without experiencing adverse health effects. Individuals or groups who are especially reactive to criteria air pollutants are considered sensitive receptors. Sensitive receptors include children, the elderly, individuals susceptible to respiratory distress, and those who are acute or chronically ill.

Two public facilities where sensitive receptors could visit are situated within several hundred feet of the eastern boundary of the EMSHP. The facilities include the Grass Valley Seventh Day Adventist Church on Osborne Hill Road and the Calvary Bible Church of Grass Valley on State Route 174.

Analysis as to whether or not project activities would:

- a. Conflict with or obstruct implementation of the applicable air quality plan.

Impact Analysis:

The soil sampling collection activities as proposed under the FSP would not conflict with, or obstruct the fulfillment of any applicable air quality plan for the NSAQMD, or the MCAB. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Impact Analysis:

The collection of soil samples as proposed under the FSP is scheduled to occur during the end of the dry season and beginning of the rainy season. The proposed project would not emit air contaminants at a level that would violate any air quality standard or contribute to a permanent or long term increase in any air contaminant. Potential generation of short-term fugitive dust emissions would be minimized through implementation of measures mandated by the Site-specific Health and Safety Plan. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- c. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Impact Analysis:

The collection of soil samples as proposed under the FSP would not emit any air contaminants at a level that would violate any air quality standard or contribute to permanent long term increase in any air contaminant. In accordance with the Site-specific Health and Safety Plan, perimeter air monitoring will be conducted to evaluate the concentration of total airborne particulates during any activity that disturbs potentially contaminated soils. In addition, the following protective measures would be implemented during the proposed sampling event to ensure to minimize fugitive dust emissions:

All active sampling activity areas will be lightly sprayed with water at least twice daily during dry, dusty conditions to reduce dust without causing run-off.

All gasoline powered equipment will be maintained in good mechanical condition (according to the manufacturer's specifications), and in compliance with all State and federal requirements.

Excavation and sampling activities will be suspended when sustained winds exceeding 15 miles per hour (mph), instantaneous gusts exceed 25 mph, or dust from excavation related activities could obscure driver visibility on park roads.

For specific information on the proposed action levels and personal protective equipment required for the project, please refer to the Site-specific Health and Safety Plan, Section 9.0. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- d. Expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis:

Two public church facilities where visitors could congregate are located several hundred feet outside the eastern boundary of the EMSHP. DTSC will employ dust mitigation measures during the sampling action to prevent the exposure of sensitive receptors to site related fugitive dust. Site control will be maintained by DTSC through an exclusion zone to prevent any unauthorized Park visitors or personnel from coming into contact with the sampling

activity. These project specific conditions, combined with implementation of the required Site-specific Health and Safety Plan will result in no impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- e. Create objectionable odors affecting a substantial number of people.

Impact Analysis:

The proposed project would not result in the long term generation of odors; although vehicle related emissions could result in the short term generation of diesel exhaust odor. However, the proposed soil sampling collection activities would be short term and any odorous vehicle emissions would be limited and dissipate rapidly in the air with increased distance from the source. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- f. Result in human exposure to Naturally Occurring Asbestos

Impact Analysis: Serpentine rocks and soils contain naturally-occurring asbestos. Fibers of naturally-occurring asbestos could become airborne, and lead to a potential health risk, when disturbed. The World Health Organization (WHO), the federal Department of Health and Human Services (HHS), and the U.S. Environmental Protection Agency (USEPA) have determined that asbestos is a human carcinogen, although scientists are not yet certain how much exposure could result in development of an asbestos-related disease (USEPA 2008).

Serpentine rock is known to occur within Nevada County, but does not occur within EMSHP (Clark 1970). Serpentine soils, however, are indicated as occurring within the extreme northern end of EMSHP on a Nevada County Planning Department serpentine soils map (Nevada County 2002), but there is no indication that these soils occur within the areas proposed for sampling.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

4. Biological Resources

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions:

The EMSHP was one of the most productive and longest operating gold mines in the western United States, and still bears clear signs of its past historic use as evidenced by numerous mines, tailing piles, waste rock piles, mining roads, and other alterations. In addition to being a highly significant historic site, the EMSHP also provides valuable habitat for plants and animals. At 2500 to 2900 feet above sea level, the EMSHP is situated within a transition zone between the lower foothills and the higher Sierra Nevada Mountains.

The EMSHP showcases one of the most productive and longest operating gold mines in the West from the gold mining era. The landscape still shows clear signs of past uses including roads, mines, tailing piles, waste rock piles, ditches, buildings, equipment, dams, approximately sixteen acres of formal gardens, and other alterations.

The entire EMSHP area was once dominated by ponderosa pine (*Pinus ponderosa*) but sustained significant changes at the hands of early settlers during the mining operations. The habitat types covering the EMSHP Area, today, are characterized as a Mixed Conifer Alliance with several patches of the White-leaf Manzanita Alliance.

Special-Status Species: Sensitive biological resources that occur, or potentially occur in or near the proposed project site are discussed in this section. Sensitive species are defined as plants and animals that are legally protected or that are considered sensitive by federal, state, or local resource conservation agencies and organizations. Specifically, this includes species listed as state or federally Threatened or Endangered, those considered as candidates for listing as Threatened or Endangered, species identified by the United States Fish and Wildlife Service (USFWS) and/or California Department of Fish and Game (DFG) as Species of Special Concern, animals identified by DFG as Fully Protected or Protected, other protected or sensitive animals, and plants considered by the California Native Plant Society (CSPS) to be rare, threatened, or endangered. Also included are habitats that are considered critical for the survival of a listed species, or have special value for wildlife species and plant communities that are unique or of limited distribution.

DTSC utilized existing DPR documentation to evaluate all sensitive species and their habitats for potential impacts from the proposed project. The data included information collected and reviewed by DPR personnel to determine the locations of sensitive plants, animals, and their habitats at the EMSHP. DTSC also utilized an existing DPR query of the DFG's Natural Diversity Database (CNDDDB) for sensitive species and habitats within the Grass Valley and eight surrounding 7.5-minute U.S. Geological Society (USGS) quadrangle maps (DFG 2008). These nine maps were also used to generate a USFWS species list for the area and a CNPS Inventory of Rare and Endangered Plants of California list of potentially occurring special-status plant species (CNPS 2008).

Special-status plant species and wildlife species are described below, along with the likelihood of their potential to occur at the proposed sampling areas and the impacts the proposed project could cause to each species.

Plant Species: The EMSHP trails network runs through Mixed Conifer and White-leaf Manzanita alliances. The CNPS inventory produced a list of fifteen plant species with the potential to occur within Grass Valley and the surrounding eight 7.5-minute quadrangle maps. Suitable habitats for five of the species on the CNPS list are not present within the project footprint. The online USFWS species list and CNDDDB species list for Grass Valley and the surrounding eight 7.5-minute quadrangle maps did not produce any additional special-status plant species with the potential to occur at the project site.

DPR personnel conducted sensitive plant surveys throughout the EMSHP site in March, April, and May of 2008 when the species were either blooming or in an identifiable life state. Two CNPS List 4 species were identified on the project site during DPR sensitive plant surveys, bringing the total number of plant species evaluated for their potential to occur at the project site to seventeen.

A total of seventeen special-status plant species have been documented in the EMSHP along with species that potentially could occur at, or near the project site due to the proximity of previously recorded sightings (DFG 2008).

Wildlife Species: Wildlife is abundant in EMSHP considering the past land uses and close proximity to urban areas. The EMSHP Resource Management Plan lists a number of species found in the Park, including: mule deer (*Odocoileus hemionus*), black-tailed jackrabbit (*Lepus californicus*), brush rabbit (*Sylvilagus bachmani*), western gray squirrel (*Sciurus griseus*), raccoon (*Procyon lotor*), turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), western scrub-jay (*Aphelocoma californica*), Stellar's jay (*Cyaocitta stelleri*), northern flicker (*Colaptes auratus*), and Pacific tree frog (*Hyla regilla*) (DPR, 1978).

The trail network system in the EMSHP area runs through forest and chaparral habitats. DTSC utilized DPR's existing documentation from the USFWS species list and the Department of Fish and Game's Natural Diversity Database species list for Grass Valley and the surrounding eight 7.5-minute quadrangle maps to obtain a list of special-status species for the proposed project. Special-status wildlife species that have been documented in the EMSHP or could potentially occur in or near the project site are described below.

Wildlife Species Known to Occur in Empire Mine SHP and Known to be Present on the Project Site

Nesting Raptors and Migratory Birds are protected by the federal Migratory Bird Treaty Act (16 U.S.C 703-712), and by the state Department of Fish and Game Code (Sections 3503, 3503.5 and 3513). Under these laws, all raptors and migratory birds and their nests are protected. A wide variety of migratory birds and several raptor species potentially occur at the project site and excavation and sampling activities, if not carefully conducted and monitored, could impact nesting birds if conducted during the breeding season.

California Spotted Owl: (*Strix occidentalis occidentalis*). This California Species of Special Concern is resident in mixed-conifer and oak-conifer forests in the western slope region of the Sierra Nevada, often with a large tree component and in the canyons or on north facing slopes in close proximity to water. Removing or fragmenting suitable habitat or conducting construction activities during the breeding season could result in potential impacts to this species. A recent study conducted by DPR biologists determined that no California Spotted Owls are currently present at the EMSHP property.

Sensitive Natural Plant Communities: Sensitive natural plant communities are communities that are especially diverse, regionally uncommon, or of special concern to local, state, and federal agencies. Removal or substantial degradation of these communities would constitute a significant adverse impact under CEQA. A search of the CNDDDB did not result in any records for sensitive natural plant communities within the Grass Valley and surrounding eight 7.5-minute quadrangle maps (DFG 2008).

Tree Preservation and Protection Ordinance: Since DPR is a State entity, it is exempt from city and county ordinances. However, DPR biologists reviewed and took into consideration local ordinances during the DTSC's project planning phase. The Nevada County Zoning Regulations aim to minimize tree removal through protection and preservation (Nevada County 2007). The County strives to minimize development projects in landmark and heritage groves (Nevada County 2007). These are defined respectively as groves associated with a historically significant structure or groves of historical value, those that have unusual species, or those that have outstanding specimens (Nevada County 2007). The Grass Valley Ordinance requires a tree removal permit if the trees scheduled for removal are over eighteen inches in diameter-at-breast-height (DBH) on any public land (City of Grass Valley 2004).

The proposed DTSC project is not a development project; the project would allow only for the proposed limited sampling and collection of soil at the EMSHP. Dominant tree and large shrub species within the EMSHP include incense cedar, ponderosa pine, Douglas-fir, black oak, and strands of mature Manzanita. There are no landmark or heritage groves at the project site or that would be affected by project implementation.

Wetlands and Waters of the United States: The U.S. Army Corps of Engineers (ACOE) defines wetlands as areas that are inundated or saturated by surface or ground water at a frequency and during sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The majority of ACOE jurisdiction wetlands meet three wetland delineation criteria: (a) hydrophytic vegetation, (b) hydric soil types, and (c) wetland hydrology.

There are no jurisdictional wetlands at the proposed project site. The park road that could be used to access the project site crosses Little Wolf Creek which is considered a "Waters of the United States" under ACOE jurisdiction. DPR biologists identified Little Wolf Creek as a "Waters of the United States" by the presence of a scoured steamed and ordinary high water mark.

The proposed sampling activities will not be located in proximity to Little Wolf Creek, therefore, it is unlikely that any fugitive dust generated by the project could enter Little Wolf Creek, or the riparian strip upstream/ downstream sections where the creek flows through the Sand Dam area. No impact.

Analysis as to whether or not project activities would:

- a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Impact Analysis:

The proposed project would allow for the excavation and collection of soil samples of mine related waste material at specified areas of the EMSHP. DTSC met with DPR staff in the early project planning stages to ensure that the proposed sampling action would not be conducted in areas of the EMSHP where sensitive biological resources were potentially present. In order to reduce impacts to sensitive, candidate, or special status species to a level of no impact, all field sampling location decisions will be made by a DPR-qualified biologist in conjunction with DTSC. The proposed sampling activities will avoid all wetland and sensitive habitat areas, and in the event that a candidate, sensitive or special status species is encountered, all work in that location will be halted until the DPR Project Manager is contacted and the DPR-qualified biologist are consulted for further direction. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated

- Less Than Significant Impact
 No Impact

- b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Impact Analysis:

The proposed project would allow for the collection of soil samples of mine related waste material at specified areas of the EMSHP. In order to avoid adverse effects on any riparian habitat, or other sensitive natural community identified in local or regional plans, policies, or regulations by the California Department of Fish and Game, or the U.S. Fish and Wildlife Service, all final sampling location approval decisions would be made by DTSC in conjunction with a DPR-qualified biologist. In the event that a riparian habitat or other sensitive natural community is encountered, all work in that location would be halted until the DPR Project Manager is contacted and the DPR-qualified biologist is consulted for further direction. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Impact Analysis: No wetlands would be directly impacted as a result of the proposed sampling activities. The proposed sampling activities will not be located in proximity to Little Wolf Creek, and DTSC will employ dust control measures to ensure that no wind borne dust or excavation related debris enter Little Wolf Creek or the Sand Dam Area. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Impact Analysis: The proposed project would not impede, or in any way interfere with fish passage or wildlife movement at the EMSHP. The proposed project would consist of the short term collection of soil samples of mine related waste material at specified DPR approved areas of the EMSHP. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- e. Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact Analysis: The proposed project would allow for the collection of soil samples in areas of the EMSHP specifically authorized by a DPR-qualified biologist, and will be conducted in a manner consistent with all local policies and ordinances protecting biological resources, including tree preservation policies. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impact Analysis: The proposed project would allow for the excavation and collection of soil samples in areas of the EMSHP specifically authorized by a DPR-qualified biologist, and will be conducted in a manner consistent with all adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

5. Cultural Resources

Project Activities Likely to Create an Impact:

Description of Baseline Environmental Conditions:

Ethnographic Context

The EMSHP is within the territory of the Hill Nisenan, or Southern Maidu, a “sub-tribe” of the Maidu language/culture group. Nisenan territory once included the lands encircling the lower reaches of the Yuba, the American, and the Feather rivers to the east bank of the Sacramento River and extending to the 10,000-foot Sierra crest. The Nisenan territory bordered that of the Konkow, Patwin, Miwok, Washoe, and Maidu.

The Hill Nisenan lived in multi-family villages or in extended-family hamlets, several of which could be grouped together under coordination of a leader who generally occupied the largest village. Villages tended to locate below 3,000 feet in elevation, usually in small valleys and open canyons. Families aggregated in villages for the winter, but generally were dispersed to logistical camps at various times from the spring through fall. This pattern of seasonal aggregation and dispersal was characteristic of most Native American peoples living along the western slope of the Sierra Nevada.

The Hill Nisenan were overrun by gold seekers flocking to the foothills during the Gold Rush that began in 1849. Within a period of two to three years, Hill Nisenan suffered widespread death and destruction with the few surviving Nisenan living at the margins of foothill towns. Those who remained found work in agricultural, logging, ranching, and domestic industries. Rapid disruption of the Native American central Sierra territories during the Gold Rush precludes precise pre-contact population estimates. Kroeber (1925) estimates about 9,000 persons while Cook (1964) approximates a figure of 8,000 individuals, although these estimates pertain to the entire Maidu population, including Nisenan.

Historic Context: In 1848, shortly after Marshall’s discovery of gold in Coloma, prospectors from California and Oregon explored the region and by 1849, mining camps began to grow at locations of the rich strikes. Soon, miners from around the world spread out across the foothills of the Sierra Nevada Range with individual mining claims. During this time, placer gold was found in Wolf Creek, at present day Grass Valley, Nevada County, and extracted using tools such as picks, shovels, and pans.

As miners depleted the easily obtained placer deposits, prospectors continued their quest for deeper and more dispersed deposits throughout the region. In 1850, George McKnight discovered gold bearing quartz on the Gold Hill Ledge about one mile west of what would become the Empire Mine. This discovery and the flurry of hard rock mine prospecting that followed helped Grass Valley become one of California’s premier hard-rock mining districts in California. Other quartz ledges included Massachusetts Hill, Ophir Hill, and Rich Hill; Ophir Hill ledge, also discovered by George McKnight, would eventually become Empire Mine. The workings of mines such as Empire Mine consistently set the production standard in California for over a century.

In 1974, DPR acquired 770 acres of land for the creation of EMSHP. The acquisition included the remaining Empire holdings such as all standing buildings, structures and the remnants of mining operations that spanned over 100 years.

The purchase price, however, excluded mineral rights up to 250 feet deep in some places. In the spring of 1975, the property, at that time named Empire Mine State Park, became a unit of the State Park System. DPR reclassified the unit as a state historic park in 1976 and nominated it for listing on the National Register of Historic Places. The areas of significance noted on the nomination are identified as historic archaeology, architecture, and industry. The nomination focused on the historic architecture and buildings within the park unit, but also elaborated on the continuous mining operations from 1850-1956.

Land survey maps from the U.S. Department of the Interior General Land Office (GLO) show that road alignments, buildings, and other mining structures existed on claims in the EMSHP area. In addition to the mining infrastructure, the mining survey maps also show road alignments already established in the areas of the Jefferson Conlon (i.e., Conlon), Daisy Hill, New Ophir, Sanders Ledge, Nevada Quartz, Brockington, and Happy Jack mines. Developed shafts were numerous in these areas as exemplified at the Heuston Hill Quartz Mine where six were constructed by 1885 and at Prescott Mine where more than a dozen were constructed. Additionally, mineral survey maps detail the existence of fences (e.g., Nevada Quartz, Happy Jack, and others) and additional waste rock and tailing dumps (e.g., Daisy Hill and others). These mines were smaller in scale than the Empire Mine and were eventually consolidated as part of the Empire Mine operation. They included the above-mentioned features as well as stamp mills, adits, shaft fences, tailing piles and other mining related features, buildings and structures. These mines were all part of the DPR park unit property acquisition.

Analysis as to whether or not project activities would:

- a. Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5.

Impact Analysis: During the proposed project planning stage, DTSC consulted with DPR staff to avoid locating potential sampling actions within areas of sensitive cultural resources. Prior to the start of the proposed sampling action, a DPR qualified cultural resources specialist will identify any cultural resources present within the proposed investigation area. All proposed soil sampling activities will be conducted by DTSC under the direction of a DPR qualified archeologist and cultural resources specialist. The sampling action will be limited in nature and conducted in a manner that avoids all areas of known cultural resources. Less Than Significant Impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- b. Cause a substantial adverse change in the significance of an archeological resource pursuant to 15064.5.

Impact Analysis: Prior to the start of the proposed sampling action, a DPR qualified archeologist and cultural resources specialist will identify any cultural resources present within the proposed investigation area. If intact cultural features are uncovered during the proposed sampling action, the DPR qualified cultural resources specialist will record and evaluate the find, and implement avoidance, preservation, or recovery methods. If avoidance is required, DTSC staff will modify the sampling location area to avoid the previously unknown resources at the direction of the DPR qualified cultural resources specialist and in coordination with any necessary regulatory agencies. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impact Analysis: In the event that the DPR qualified cultural resources specialist determines that significant, previously undocumented/flagged cultural resources (included but not limited to dark soil containing shellfish, bone, flaked stone, ground stone, or deposits of historic material) are encountered during the proposed excavation and sampling action, the DTSC Project Manager will put the work on hold at that specific location. A DPR qualified archeologist and, or cultural resources specialist will record and evaluate the find, and work with the DPR and DTSC Project Managers to implement avoidance, preservation, or recovery measures as appropriate prior to any work resuming in that specific location.

In the event that the DPR qualified archeologist and, or cultural resources specialist determines that these finds are significant cultural resources, a qualified historian, archeologist, and/or Native American representative (if appropriate) will monitor all subsurface work including trenching, excavation and soil sample collection in that area. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- d. Disturb any human remains, including those interred outside of formal cemeteries.

Impact Analysis: In many of California's historic town sites and rural communities, discoveries have been made of Native and non-Native Americans human bones. While burials have not been documented or recorded within the proposed sampling areas at the EMSHP, there is always the potential of unanticipated discoveries of human bone. If any human remains or burial artifacts are identified during the proposed sampling action, work will cease immediately in the area of the find and the DTSC Project manager will notify DPR. The DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with section 7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (NAHC) will be notified within 24 hours of the discovery if the Coroner determines the remains are Native American. The NAHC will designate the "Most Likely Descendent" (MLD) of the deceased Native American. The MLD will recommend an appropriate disposition of the remains. If a Native American monitor is on site at the time of the discovery and that person has been designated the MLD by the NAHC, the monitor will make the recommendation of the appropriate disposition.

No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

6. Geology and Soils

Project Activities Likely to Create an Impact: The proposed sampling investigation work could possibly cause an impact.

Description of Baseline Environmental Conditions: The EMSHP lies within the foothills of the Sierra Nevada Mountain Range. The western slope of the Sierra Nevada is characterized by north to northwest trending belts of metamorphic rocks, which pre-date the Sierra Nevada granitic rock that underlies the eastern and higher portion of the range. The geology of the metamorphic region is complex due to the juxtaposition of multiple accreted terranes, which are blocks of former ocean floor sediment and volcanic rock that have been added to the western margin of the North America continent over a long period of time.

Two fundamental groups of rocks are recognized in the Sierra foothills. The older group of rocks is called the "Bedrock Series" and consists of the older Paleozoic and Mesozoic metamorphic terranes. The younger group of rocks, called the "Superjacent Series," includes Tertiary gravels and lava flows that were deposited over the older rocks after a period of intense faulting, metamorphism, and granitic intrusion.

The Empire Mine and other mines in the EMSHP are part of the Grass Valley Gold Mining District, which is centered on the City of Grass Valley. The central part of the district is characterized by the Grass Valley pluton, which is an elongated north trending body of Mesozoic granodiorite that intrudes the older metamorphic rocks. The Grass Valley pluton is cut by various dike rocks that are heavily mineralized. The Grass Valley district was the most heavily mineralized and richest gold district in the state, with a number of productive veins.

Analysis as to whether or not project activities would:

- a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist –Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publications 42).
- ii) Strong seismic ground shaking
- iii) Seismic-related ground failure, including liquefaction
- iv) Landslides

Impact Analysis: The project site is located within the lower elevations of the Northern Sierra Nevada Range, an area relatively free of large earthquake events. No potentially active faults have been identified within the EMSHP.

- i) The project site is not located within an Alquist-Priolo Earthquake Fault Zone as designated by the California Geological Survey (CGS 2000), and the nearby Grass Valley has shown no displacement during the past 1.6 million years. Based upon the EMSHP’s geological history, the chance of a surface rupture of an earthquake fault near the project site is highly unlikely. Therefore, there would be impact from surface rupture of a known fault due to the proposed project. No impact.
- ii) The closest faults exhibiting earthquake activity in the region of the EMSHP are the Cleveland Hill Fault (located twenty five miles to the northeast), and the Dog Valley Fault (located fifty miles to the east), capable of generating Maximum Credible Earthquakes of Richter Scale magnitude of 6.5 and 7.3, respectively (Peterson 1996). The expected ground acceleration at the project site is 0.1 to 0.2 force due to gravity (CGS 2008). The project Site could be subject to strong seismic ground shaking from local or more distant faults; however, this is an existing condition and there would be no increased risk to the public due to this project. No impact.
- iii) Seismic-induced ground failure, such as liquefaction, usually occurs in unconsolidated granular soils that are water saturated. These conditions do not exist at the proposed project site areas. No impact.
- iv) Landslides could occur at the project site where slopes are steep and soils are erodible. However the proposed excavation activities would be restricted to relatively flat surface areas and limited to a maximum depth of four feet below ground surface. The associated sampling action would be of limited duration and volume, thereby greatly minimizing any contribution to potential landslides at the project site. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- b. Result in substantial soil erosion or the loss of topsoil.

Impact Analysis: The proposed excavation and soil sampling action would be limited in both scope and duration, and would not result in a temporary increase in soil erosion and sedimentation, or loss of topsoil due to the associated ground disturbing activities. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Impact Analysis: Based upon available data, DTSC has determined the proposed project site is not located within a geologic unit or on soil that is known to be unstable. The site, in conjunction with the proposed excavation and sampling activities pose no potential for instability due to liquefaction, and the potential for lateral spreading, subsidence or collapse is minimal. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

Impact Analysis: The EMSHP is underlain by Sites Series soils, which are loams with a moderate potential for soil expansivity. These soils have been rated with no limitations for DPR’s development of recreational paths and trails in regard to shrink-swell properties (NRCS 2008). Therefore, DTSC’s proposed sampling activities would not create substantial risks to life or property. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of water.

Impact Analysis: The proposed project would not involve the installation of a septic tank or leach field. Therefore, there would be no impact to onsite soil from this project. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- f. Be located in an area containing naturally occurring asbestos

Impact Analysis: Naturally-occurring asbestos is contained in Serpentine rocks and soils commonly found in areas of the Sierra Nevada Mountains. When disturbed, fibers of naturally-occurring asbestos could become airborne, and lead to a potential health risk. The World Health Organization (WHO), the federal Department of Health and Human Services (HHS), and the U.S. Environmental Protection Agency (USEPA) have determined that asbestos is a human carcinogen, although scientists are not yet certain how much exposure could result in development of an asbestos-related disease (USEPA 2008).

Serpentine rock is known to occur within Nevada County, but does not occur within Empire Mine SHP (Clark 1970). Serpentine soils, however, are indicated as occurring within the extreme northern end of Empire Mine SHP on a Nevada County Planning Department serpentine soils map (Nevada County 2002), but there is no indication that these soils occur within the proposed sample location areas. No Impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

7. Hazards and Hazardous Materials

Project Activities Likely to Create an Impact: Soils to be collected contain arsenic.

Description of Baseline Environmental Conditions: The EMSHP was the site of numerous individual mines that operated from the mid-1800’s to mid-1900’s, and many of the park’s existing recreational roads and trails are old routes that were

used by miners to access the various mines. Historic operations within the EMSHP have left behind pockets of mine related materials containing elevated levels of metals at numerous locations throughout the Park property.

The proposed project would consist only of soil sampling activities and would not make any provisions for DTSC to make remedial action decisions or conduct remedial action activities. The project's Grant funding was provided solely for specified investigation and research activities.

Currently, DPR is preparing a park-wide Programmatic Environmental Impact Report (EIR) for a project to remediate elevated metal concentrations in various areas of EMSHP that resulted from historic mining activities. The project consists of remediation activities that are required to abate risks in areas of EMSHP

The EMSHP was the site of numerous individual mines that were operated from the mid-1800 to mid-1900's. Many of the existing recreational roads/trails on Osborne Hill are old routes used by miners to access the various mines in the area. Charles H. Osborne and others located multiple claims in 1852. Other early mines included the Betsy, Orleans, Prescott Hill, Daisy Hill, Conlon and many others. Consolidation of individual claims under the Empire Mining Company name began in the mid to late 1850's (Selverston 2008). Additional claims were added to the Empire holdings during the Osborne ownership period and continued after Empire-Star Mines Company became the owners in 1929. The Cultural Resources section of this document contains a more detailed description of the Empire Mine's mining history.

Historic mining operations within EMSHP have left behind pockets of mine and mill materials containing elevated metal levels at various locations within the park unit. Due to the presence of elevated metals, several interim remedial actions have been conducted at EMSHP to protect the visiting public, DPR personnel, and the environment. Remedial actions to date include: 1) covering the "Red Dirt Pile", a former mill tailing pile area that was a source for elevated metals and low pH contamination in storm water runoff, with a cap; 2) soil testing of road/trail surfaces resulting in closure of certain recreational road/trail alignments to the public and covering other road/trail segments with a crushed aggregate rock cap in order to maintain public access; and 3) soil testing around DPR park personnel residences (DTSC 2007).

In 2006, metal concentrations of existing roads/trails throughout EMSHP, including the Osborne Hill Project site, were measured in the field using the in-situ field x-ray fluorescence (XRF) technology and by laboratory analysis of soil samples collected onsite. At the Osborne Hill project site, metal concentrations were also measured in 2007 on the major user created trails being considered for incorporation into the official trail network and on the proposed new trail alignments. The same methodology was used to collect this data in 2006 on the existing roads/trails. The soils were analyzed for the following metals and their concentrations on the site: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, zinc, and mercury. Of these seventeen metals, arsenic was considered to be the only constituent of interest on road/trail surfaces within the Osborne Hill project site when compared with the residential California Human Health Screening Level (CHHSL). CHHSLs were developed using the standard exposure assumptions and chemical toxicity values published by the U.S. Environmental Protection Agency (EPA) and California EPA (California EPA 2005). Thresholds of concern used to develop CHHSLs are an excess lifetime cancer risk of one-in-one-million (10^{-6}) and a hazard quotient of 1.0 for noncancer health effect. The residential CHHSL value for arsenic is 0.07 milligrams/kilogram (mg/kg). Metal concentrations below the residential CHHSL values are appropriate for residential CHHSL values are expected to be conservatively below thresholds for risk to human health from road/trail use and are not considered constituents of interest. Additionally, the DTSC Human and Ecological Risk Division (HERD) has developed an arsenic screening level of 270 mg/kg for road/trail use. Arsenic levels greater than 200 mg/kg (clean up goal) were used to identify areas where mine and mill material could exist on road/trail surfaces and could pose a potential exposure risk to DPR personnel and park visitors. This value is less than and more conservative than the DTSC remediation goal of 270 mg/kg.

The highest levels of arsenic concentration within the Osborne Hill project site are located in the vicinity of historic mining activities: along the Osborne Hill Loop Trail north of the Prescott Hill Mine; along the Prescott Hill Crosscut Trail and the Osborne Hill Loop Trail located south of the Prescott Hill Mine; along the Osborne Hill Loop Trail and the Hard Rock Trail near their intersection in the vicinity of the Prescott Hill Mill site; along the Daisy Hill Mine Trail; along the Conlon Mine Trail and the user created trails that cross the Conlon Mine waste rock pile; and along the existing Power Line Trail boundary of the EMSHP.

As a component of the current project scope, remediation efforts would be conducted on roads/trails of the Osborne Hill trail network to address elevated levels of metals in the soil. DPR would remove soil berms adjacent to roads where feasible. DPR would treat reconstructed and new road/trail with up to six inches of compacted fill; soil would be from the road berms where metal concentrations are not elevated and from clean imported fill from outside the park unit. The purpose of applying fill is to raise road/trail grades so that they are level with the surrounding soil surface and minimize erosion of the road/trail surface during rain events. The remediation efforts would also include; 1) permanent closure of

road/trail alignments in areas containing elevated metals or where trails are not sustainable; 2) covering segments of previously closed official trails containing elevated metals with an aggregate cap so that they could be reopened; 3) formalizing several user created trails to replace closed trails; and 4) installing new official road/trail segments to replace closed alignments and reestablish visitor access.

Serpentine rocks and soils contain naturally-occurring asbestos. Fibers of naturally-occurring asbestos could become airborne, and lead to a potential health risk, when disturbed. The World Health Organization (WHO), the federal Department of Health and Human Services (HHS), and the U.S. Environmental Protection Agency (USEPA) have determined that asbestos is a human carcinogen, although scientists are not yet certain how much exposure could result in development of an asbestos-related disease (USEPA 2008). Serpentine rock is known to occur within Nevada County, but does not occur within Empire Mine SHP (Clark 1970). Serpentine soils, however, are indicated as occurring within the extreme northern end of Empire Mine SHP on a Nevada County Planning Department serpentine soils map (Nevada County 2002), but there is no indication that these soils occur within the areas proposed for DTSC's sampling action.

Airports: Nine municipal airports, private airfields, and heliports exist throughout Nevada County (Hometown Locator 2008, USGS 2006). Of these, two private heliports are within two miles of the park unit boundary. The Grass Valley Service Center Heliport is less than 0.5 mile west of the park unit boundary and about 1.25 miles west of the project site at Osborne Hill. The Shaws Hill Heliport is approximately 1.25 miles north of the park unit boundary and the Osborne Hill respectively. Nevada County Air Park is located approximately 2.8 miles northeast of the project site off Loma Rica Drive in the Loma Rica Industrial Park (Google Maps 2008). EMSHP does not occur within any of the five air park safety areas which extend a total of 5,000 feet from the runway surface (Quad Knopf 1999)

Schools: Hennessy Elementary School and Union Hill Elementary School are approximately one mile northwest and one quarter mile northeast of the EMSHP, respectively (Google Maps 2008). Lyman Gilmore Middle School is located approximately one mile northwest of the EMSHP.

Fire: DPR has an emergency response protocol for the Osborne Hill area within EMSHP. The plan includes information about first responders and Incident Command (IC) in the event of fire, as well as law enforcement and medical emergencies within the park unit (DPR).

The project site, located within a forested area of EMSHP, is bounded on the east, west, and south sides by private land, much of it containing homes on large lots in wooded areas. The City of Grass Valley, all structures within EMSHP, and many homes and their occupants in the surrounding area could be at immediate risk if a fire started in or migrated through the park unit. In the event of a fire, people using the park trail system could be trapped and in danger of being harmed.

If a fire should occur during implementation of the proposed excavation and sampling investigation, the California Department of Forestry and Fire Protection (CalFire) has primary jurisdiction for fire suppression in units of the State Park System, including EMSHP. Three local fire protection agencies, including the Grass Valley Fire Department (GVFD), Nevada County Consolidated Fire District (NCCFD), and Ophir Hill Fire District (OHFD, provide service within the Grass Valley General Planning Area (Quad Knopf 1999). OHFD would likely respond first to a fire emergency at EMSHP (DPR); however, firefighting units from any of the three local agencies could be the first responders depending upon availability. Any local first responder agency would relinquish command to Calfire upon arrival of its crews and equipment on scene.

In addition, DPR fire crews stationed in the Lake Tahoe area could be activated to assist in fire suppression operations (DPR). DPR rangers would have primary responsibility for directing any necessary evacuations, designating routes of ingress, egress and staging areas for fire control, and for traffic control and public safety.

Analysis as to whether or not project activities would:

- a. Create a significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials.

Impact Analysis: The proposed project would involve ground disturbance of soils known to contain elevated levels of arsenic. All proposed excavation and sampling activities would be conducted in accordance with the Site-specific Health and Safety Plan that provides guidelines for safe work practices to prevent any hazards to the public, DTSC and DPR personnel, or the environment from the release of hazardous materials or waste (biological and chemical). The Site-specific Health and Safety Plan, Quality Assurance Project Plan and Field Sampling Plan also contain procedures for the management, transport and storage of any hazardous waste generated as part of the proposed project. Additionally, all field workers will have completed a 40 hour training program in Hazardous Waste Operations and Emergency Response (i.e., 29 CFR 1910.120).

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact Analysis: During project related work, the dispersal of arsenic from areas containing elevated concentrations to other areas both within and outside the EMSHP could occur. However, DTSC will establish decontamination areas for vehicles and equipment at any point of entrance or exit at the project site. The decontamination areas will be designed to completely contain all residual material generated by washing the vehicles and equipment before exiting the areas of elevated metals, the project site and the EMSHP. Residuals material will be disposed of in a manner consistent with industry standards. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

As noted in the Environmental Setting, the Union Hill Elementary School is located within one-quarter mile of the EMSHP. The school is located at 11638 Colfax Highway (State Route 174) northeast of the EMSHP. All activities associated with the proposed project would occur within the boundaries of the EMSHP.

The proposed sampling action would be conducted in accordance with the site-specific Health and Safety Plan, thereby limiting the emission of contaminated dust and preventing transmission off-site. The transportation of soil containing elevated levels of arsenic concentrations has the potential to release hazardous materials into the environment and expose the public in areas located off the site. Decontamination of all vehicles and equipment will be conducted prior to removal from the EMSHP, and transport of the arsenic contaminated soil will be conducted in sealed containers in a manner consistent with Department of Transportation (DOT) and DTSC requirements. No Impact. No Impact.

Impact Analysis:

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to public or the environment.

Impact Analysis: The EMSHP is included on the current site cleanup list of hazardous materials sites comprised by DTSC pursuant to the Government Code section 65962.5 (i.e., Cortese List). The EMSHP has areas where both soil and surface water have been impacted by metals (e.g., arsenic, lead, cadmium and mercury), low pH, and some residual cyanide related to past gold mining processes. Information on the status of the cleanup activities at the EMSHP is available on the DTSC EnviroStor website at: <http://www.envirostor.dtsc.ca.gov/public/profilereport.asp?globalid=29100003>. The proposed FSP will consist of two rounds of soil sampling, each comprising the collection of a maximum 30 shallow soil samples in specified areas of the EMSHP determined appropriate by the DPR. Implementation of the proposed sampling action will be conducted in accordance with the DTSC approved Health and Safety Plan, thereby reducing any potential impacts from exposure to elevated metals to the public and the environment to a level of no impact.

The proposed project does not make any provisions for DTSC to make remedial action decisions or conduct remedial action activities. The project's Grant funding was provided solely for specified investigation and research activities. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- e. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

Impact Analysis: The proposed project does not contain any component that would interfere with an adopted emergency response plan or emergency evacuation plan. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

8. Hydrology and Water Quality

Environmental Setting

Description of Baseline Environmental Conditions: The EMSHP is located within the Wolf Creek Watershed, a tributary to the Bear River. The Bear River flows into the Feather River, which drains into the Sacramento River system. Little Wolf Creek flows from east to west through the central part of the EMSHP, into the Sand Dam Area, and then continues westward to Wolf Creek. Small ephemeral drainages that carry water only during heavy storms are located throughout the EMSHP region.

Natural drainage patterns in the EMSHP have been modified and disrupted by past mining activities, which often involved channeling water into ditches for use in ore processing operations. The Little Wolf Creek drainage was modified during the mining era by the construction of the Sand Dam to prevent discharge of tailings materials. Little Wolf Creek now flows through the Sand Dam marsh area, which was created with the impounded tailing materials upstream of the dam.

Groundwater at the EMSHP occurs within a complex system of fractured bedrock and underground mine workings. Groundwater is present within the Empire Mine shaft at a water elevation of approximately 2,495 feet above mean sea level (amsl). Water from a 240-foot-deep vertical well is extracted from the main shaft for use in irrigation and other non-potable water uses within the EMSHP. This well water meets RWQCB water-quality criteria for agricultural use. Shallower perched-water zones likely exist within the EMSHP, but have not been explored. The Nevada Irrigation District (NID) supplies potable water for the EMSHP.

Climate and Precipitation: Empire Mine SHP is located within a semi-Mediterranean climatic zone, typical of the Sierra Nevada foothills. During the summer months, warm dry winds remove moisture from the vegetation and soil surface. Rainfall in the summer is rare and is usually generated from thunderstorms. Winters are generally mild and wet, with the majority of precipitation occurring from November through May. Rainfall averages fifty-five inches per year and is usually accompanied by a southwest wind. Averaging about thirty inches total per year, snow depth rarely reaches more than eight inches at any one time (DPR, 1978). Precipitation records are kept by the City of Grass Valley Public Works Department and have been collected at the Magenta Drain Portal since the summer of 2006 (DPR 2006).

Watershed: Empire Mine SHP is located within the Wolf Creek watershed, a tributary to the Bear River. The Bear River flows into the Feather River, which drains into the Sacramento River system. The majority of the EMSHP is within the Little Wolf Creek watershed, with a portion of the site draining directly into Wolf Creek towards the south. Small ephemeral drainages that carry water only during heavy storms are located on Osborne Hill.

Natural drainage patterns have been modified and disrupted by past mining activities, which often involved channeling of water into ditches for use in ore processing. The Little Wolf Creek drainage was modified during the mining era by the construction of the Sand Dam, most likely built in 1917 as a result of the California Debris Commission's requirement that tailing materials could not be discharged directly to a creek. Little Wolf Creek now flows through the Sand Dam marsh area, which was created with the trapped tailing materials upstream of the dam. The creek exits through the Sand Dam arrester (energy dissipation system). It eventually leaves the park unit approximately 1,150 feet below the Sand Dam and then flows approximately 2,500 feet before joining Wolf Creek west of State Route 49 (DPR 2006).

Flooding: No 100-year flood plain has been designated for Little Wolf Creek. High flows in Little Wolf Creek are contained within the creek bank. Creek flows spread out within the Sand Dam impoundment and are then released through the spillway.

Surface Water Quality

The Central Valley Regional Water Quality Control Board (CVRWQCB) regulates water quality in the region and provides water quality standards and management criteria as required by the Clean Water Act (CWA). These standards and criteria are presented in the Water Quality Control Plan (i.e., Basin Plan) for the Central Valley Region (CVRWQCB 1998) Water quality testing and field observations by qualified DPR staff have determined that surface water quality within EMSHP has been impaired by past mining activities. Deposits of mine (e.g., waste rock) and mill (e.g., tailing piles) materials are associated with historic mining at the EMSHP. Mine spoils material from underground mining activities contains the non-ore-bearing rocks and soil that were removed during mining and tunneling operations. Once removed, this material was not processed because it did not contain economically significant ores. Mill tailing materials are fine-grained deposits (sand size or smaller) that have been crushed in a stamp mill. Both mine waste rock and mill tailing materials have the potential to release metals into storm water. In addition, the mill tailing materials could contain inorganic contaminants such as mercury and cyanide (DPR 2006). The surface water sampling network, part of the industrial storm water pollution prevention plan (ISWPPP, General Permit #WDR-97-03-DWQ) for the EMSHP, included a sampling point down-gradient of the project site on the north side of Osborne Hill; to date, only low levels of metal of concern from surface water sampling have been detected on the north side of Osborne Hill (DPR 2008)

Groundwater Occurrence and Quality

Groundwater in EMSHP occurs within a complex system of fractured bedrock and underground mine workings. Shallower, perched water zones likely exist but have not been explored within the park unit. A vertical well extracts mine pool water from the main shaft at a depth of 240 feet below ground surface (bgs) for use as irrigation during dry month and other non-potable water use within EMSHP. The depth to groundwater/mine pool water is approximately 200 feet bgs. Water quality of mine pool water meets the CVRWQCB criteria for agricultural use (MFG and Clear Creek Consultants, Inc. 2008) The primary well (Well No.1) located in the EMSHP taps into the mine pool and runs at approximately 175 gallons per minute (gpm) and the rate of well recharge well recharge is 6 inches in a 24-hour period (Payne 2008).

Water Supply: Potable water for the park unit is supplied by the Nevada Irrigation water by the Nevada Irrigation District (NID). Mine pool water is extracted for use as irrigation water for the historic ground and for other non-potable uses, including fire suppression. DPR could obtain irrigation water from an irrigation well located within fire suppression. DPR could obtain irrigation water from an irrigation well located within the park unit for use in dust suppression during project construction. Five thousand gallons of water would be pumped at a time into a portable water tank up to ten loads per day.

Analysis as to whether or not project activities would:

- a. Violate any water quality standards or waste discharge requirements.

Impact Analysis: The proposed soil excavation and sampling action would not occur in proximity to Little Wolf Creek and would be conducted in compliance with all applicable water quality standards as specified in the CVRWQCB Basin Plan. For soil excavation and sampling activities that extend into the rainy season (October 15 – May 15), or if an un-seasonal storm is anticipated, DTSC would properly cover any stockpiled soils and install straw bail barriers around the stockpiles and areas of ground disturbances to prevent surface run-off. No work will be conducted in inclement weather. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficient in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Impact Analysis: The proposed project does not make any provisions for the construction of any facilities that would increase the groundwater usage, interfere with groundwater recharge, or lower the local groundwater table. There would be no groundwater impact as a result of the proposed projects implementation. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site.

Impact Analysis: DPR biologists have determined that drainage at the project site is predominantly ephemeral, with the exception of Little Wolf Creek. The proposed consists of limited soil excavation and sampling actions and would not be implemented in proximity to Little Wolf Creek. The proposed project does not make any provisions for DTSC to alter any existing drainage patterns at the EMSHP. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site.

Impact Analysis: The proposed project would consist of limited soil excavation and sampling activities and would not include any actions that could alter the existing drainage pattern at the EMSHP. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Impact Analysis: The proposed project would entail the limited excavation and sampling of soil in DPR approved areas of the EMSHP. The proposed project would not create or contribute to runoff water that would exceed the capacity of capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- f. Otherwise substantially degrade water quality.

Impact Analysis: The proposed project would entail the limited soil excavation and sampling action, and would not impact or in any way degrade water quality. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- g. Place within a 100-flood hazard area structures which would impede or redirect flood flows.

Impact Analysis: As described in the Environmental Setting, no part of the proposed project site would be located within a FEMA designated 100 year floodplain. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- h. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Impact Analysis: The proposed project would not place structures that would redirect or impede flood flows within a FEMA designated 100 year floodplain. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- i. Inundation by sieche, tsunami or mudflow.

Impact Analysis: Topography characteristic of the proposed project site is relatively steep in some locations, but there is no history of large landslides or mudflows at the EMSHP. The project site is not located adjacent to a large body of water and would not be inundated by either a sieche or tsunami. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

9. Land Use and Planning

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions: The EMSHP is located south of the Grass Valley city limit in Nevada City. The EMSHP falls within the municipal Planning Area of the City and is considered part of the Grass Valley Community Region by the County (City of Grass Valley 2007, Nevada County 2004).

Nevada County: The Nevada County General Plan (1996) includes the following County land use designations; commercial, industrial, single and multi-family housing, agriculture/timberlands, and public lands. Land use in Nevada County is reflective of the historic resource-based rural economy, and agriculture and timberlands remain a significant contributor to the County's economic base. While much of the County remains rural, a transition has occurred over the past two decades towards greater commercial and industrial development. These changes in land use have occurred primarily within the City of Grass Valley and Nevada City.

Public lands fall under the designation of Open Space in the Nevada County General Plan and are primarily managed by the United State Forest Service (USFS), and the Bureau of land Management (BLM). Other public lands include, but are not limited to parks managed by the DPR, the County, and local municipalities such as the City of Grass Valley.

City of Grass Valley: The EMSHP is located within the City of Grass Valley Planning Area and is designated as Parks/Open Space in the 2020 General Plan Update Background Report (City of Grass Valley, 1998). The City Government Code [Section 65560(b)] defines Open Space as “any parcel or area of land or water which is essentially unimproved and devoted to an open space use.” Open space land use includes the preservation of natural resources; the managed production of resources such as forest land, range land, agricultural land, and other areas of economic importance; and outdoor recreation (City of Grass Valley 1998).

Empire Mine SHP (DPR): The Public Resources Code (PRC) Sections 540 and 541 authorizes a comprehensive planning program for the State Park System. In 1978, DPR completed the General Development Plan for the EMSHP, which provides general guidelines for the management and development of the park property, and amended the General Plan in 1996 to address the development of underground interpretive facilities. The General Guidelines for development within the EMSHP reflect its classification as a State Historic Park where the emphasis of development is related to historical values. The General Plan’s specific goals and objectives include but are not limited to the identification of cultural, natural and recreational resources in the EMSHP, and the determination of visitor activities / land uses that are compatible with the purpose of the park, available resources, and the surrounding area.

Analysis as to whether or not project activities would:

- a. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. No Impact.

Impact Analysis: As mentioned in the Environmental Setting, the proposed project site is located within the municipal Planning Area of the City of Grass Valley and is considered part of the Grass Valley Community Region by Nevada County. The City and the County both designate the EMSHP as Open Space, and recreation such as the hiking trails is an approved use in Open Space areas. The proposed project is consistent with the General Development Plan and General Development Plan Amendment for the EMSHP. The proposed sampling plan would not conflict with DPR’s General Development Plan and not directly affect future Park projects or development.

The proposed sampling plan contains control measures which would limit off-site impacts, and would therefore limit impacts to off-site land uses. No aspect of the proposed project would be in conflict with local zoning, regulatory policies, land use plans, conservation plans or ordinances. DTSC would consult with DPR, as appropriate to ensure that the proposed project would conform with all applicable local, state and federal requirements. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- b. Conflict with any applicable habitat conservation plan or natural community conservation plan.

Impact Analysis: As previously stated, the proposed project site is located within the municipal Planning Area of the City and is considered part of the Grass valley Community Region by the County (City of Grass Valley 2007, Nevada County 2004). No aspect of the proposed project is in conflict with the local zoning, regulatory policies, land use plans, conservation plans or ordinances. DTSC has conducted appropriate consultation in the planning of the proposed project with DPR, and project related sampling activities will be performed in compliance with applicable local, state, and federal requirements. No Impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

10. Mineral Resources

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions: The California Surface Mining and Reclamation Act (SMARA) of 1975 requires the State Geologist to classify land into Mineral Resource Zones (MRZs) according to the known, or inferred, mineral potential of that land without regard to land use or ownership. An MRZ-1 classification is given when there is enough information present to indicate that no significant mineral deposits are present or likely to be present. The MRZ-2 classification is given to areas that have significant mineral deposits that are known to be present or are inferred to be present based upon geologic information. The MRZ-3 classification is given if mineral deposits cannot be determined for the available data, and the MRZ-4 classification is given to areas that lack sufficient data to assign any other MRZ designation.

To date, gold and construction aggregate are the most important mineral resources from the Grass Valley area. The EMSHP is part of the Grass Valley South Area which is known to support a series of veins containing free gold and lesser amounts of lead, copper, zinc and tungsten. While many of the veins have been mined, it is assumed that significant amounts of gold still exist at deeper levels. Consistent with the State designations for mining lands, zones within the Grass Valley General Planning Area that have significant mineral resource deposits are classified as MRZ-2 (City of Grass Valley 1993). This designation includes the land that underlies the EMSHP. Although significant mineral deposits are expected to exist beneath the EMSHP, Public Resources Code, Section 5001.65 prohibits commercial exploitation of resources of the property of the State Park System.

Analysis as to whether or not project activities would:

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

Impact Analysis: The proposed project would not change land use activities on the site and therefore not result in the loss of availability of a known mineral resource or locally imported mineral resource recovery site. The proposed project would take place entirely within the boundaries of the EMSHP. As stated in the Environmental Setting, mining activities within any property of the State Park System is prohibited. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. No Impact.

Impact Analysis: The proposed project would not change land use activities on the site and therefore not result in the loss of availability of a known mineral resource or locally imported mineral resource recovery site. The proposed project would take place entirely within the boundaries of the EMSHP. As stated in the Environmental Setting, mining activities within any property of the State Park System is prohibited. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

11. Noise

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions: Sound is defined any detectable fluctuation in air pressure, and is generally measured on a logarithmic scale in decibels (dB). When unwanted sound (i.e., noise) is measured, and

electronic filter is used to de-emphasize extreme high and low frequencies to which human hearing has decreased sensitivity. Resulting noise measurements are expressed in weighting frequencies called A-weighted decibels (dBA). While zero dBA is the lowest threshold of human hearing, a sustained noise equal or greater than 90 dBA is painful and can cause hearing loss Table 2, (Bearden 2000).

Noise is further described according to how it varies over time and whether the source of noise is moving or stationary. Background noise in a particular location gradually varies over the course of a 24-hour period with the addition and elimination of individual sounds. Several terms are used to describe noise and its effects. The equivalent sound level describes the average noise exposure level for a specific location during a specific time period, typically over the course of one hour. The instantaneous maximum noise level is the highest sound level measured during a specific time period. Federal, state and local governments have defined noise and established standards to protect people from adverse health effects such as hearing loss and disruption of certain activities. Noise is defined in the California Noise Control Act, Health and Safety Code, California Code of Regulations (CCR) Section 46,022 as excessive or undesirable sound made by people, motorized vehicles, boats, aircraft, industrial equipment , construction , and other projects.

Table 2: Sound Levels Generated by Various Sources of Noise

Sound Level	dBA
Quiet library, soft whispers	30
Living room, refrigerator	40
Traffic light, normal conversation, quiet office	50
Air conditioner at 20 feet, sewing machine	60
Vacuum cleaner, hair dryer, noisy restaurant	70
Average city traffic, garbage disposal, alarm clock at 2 feet	80
Constant Exposure to the following sound levels can lead to hearing loss	
Subway, motorcycle, truck traffic, lawn mower	90
Garbage truck, chain saw, pneumatic drill	100
Rock band concert in front of speakers, thunder clap	120
Gunshot blast, jet plane	140
Rocket launching pad	180
	Bearden 2000

To promote compatibility among various land uses and protect health and safety, Nevada County has established zoning districts and exterior noise limits that control potential nuisances such as noise and vibration. County noise limits apply to discretionary and ministerial projects and limit noise for sensitive receptors such as residential areas, hospitals, schools, libraries and places of worship (Nevada County 1996). EMSHP is zoned in the Open Space District (Nevada County 2004) for which the exterior noise limits between 7:00 AM and 7:00 PM.

Analysis as to whether or not project activities would:

- a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Impact Analysis: The proposed soil sampling action would be of short duration (3 - 5 days) and involve limited equipment (a maximum of six vehicles and an excavator). Project related noise levels would fluctuate, depending on the type and number of vehicles and equipment in use at any given time. Depending on the specific project related activities being performed, short-term increases in ambient noise levels could result near the project site and might prove a short term annoyance to park visitors and staff. Project related activities will be limited to the daylight hours, Monday through Friday. The project work would not occur during weekends or holidays when the park visitation is highest. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- b. Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels. No Impact.

Impact Analysis: The proposed project related activities would not involve the use of explosives, pile driving or other intensive construction/demolition techniques that could generate significant ground vibration or noise. Minor vibration adjacent to mechanical equipment during the excavation work would be generated on a short term basis. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- c. A substantial permanent increase in ambient noise levels in the vicinity above levels existing without the project.

Impact Analysis: Once the proposed excavation action is completed, project related noises would cease. The proposed project would not create any source of noise that would contribute to a substantial permanent increase in noise levels in the vicinity of the project site. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Analysis: Please refer to discussions (a) and (c) above. No impact

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

12. Population and Housing

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions: The EMSHP is located within the Planning Area boundary for the City of Grass Valley, Nevada County (City of Grass Valley 2007). Land uses on the properties bordering the park unit include Residential, Mixed Use, Commercial, and Industrial (City of Grass Valley 2007, County of Nevada 2008).

The EMSHP is listed on the National Register of Historic Places (NPS 2008). Due to the significant historical features located at the park unit and the educational opportunities provided by them, as well as opportunities for hiking, horse riding, and picnicking, the park unit receives approximately 90,000 local and out-of-town visitors on average per year. The population of Grass Valley has oscillated between highs and lows dependent upon economic conditions due to gold mining, migration of people away from large cities, and economic recession conditions (City of Grass Valley 1998). The population for Nevada County in 2006 was 99, 584 people, with 13% of the population (i.e., 13,031 people) living in Grass Valley (DOF 2007a). The population estimates for 2008 predict that 99,186 people are living in Nevada County and 12,929 are living in Grass Valley (DOF 2008). Those numbers indicate a 1% decrease in the population of both Grass Valley and Nevada County.

According to the 2007 Population Projection by Race/Ethnicity, Gender, Age report from the California Department of Finance, the population for Nevada County would increase to 136,113 people by 2050, which is an increase of 73% from

the 2006 population level (DOF 2007b). The projected population increases for the years 2010, 2020, 2030, and 2040 are 102,649, 114,451, 123,940, and 130,404 respectively (DOF 2007b).

Housing within the boundaries of Empire Mine SHP is limited to six housing units and two mobile home pads for DPR personnel and their families (Clark 2008, Munson 2008). The permanent population of the park unit is relatively static, with approximately eight to twelve people living in the park unit year round (Clark 2008). These numbers are based on DPR staffing requirements, and no significant growth in the park population is anticipated in the foreseeable future. No business or residential opportunities are offered at the project site.

Analysis as to whether or not project activities would:

- a. Induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

Impact Analysis: The project would consist of the proposed soil sampling action that would be short term in nature and not create a population growth or increase for additional infrastructure. The project does not have a housing component and all work would take place within the confines of the EMSHP, with no additions or changes to existing local infrastructure. The project would neither modify nor displace any existing housing and would not displace people, either temporarily or permanently. DTSC, in conjunction with oversight from DPR staff would conduct the proposed soil sampling and excavation action project. Therefore, no new population growth will be generated as a result of the proposed project. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Impact Analysis: The project would consist of the proposed soil excavation and sampling action. The project does not have a housing component and all work would take place within the confines of the EMSHP, with no additions or changes to existing local infrastructure. The project would neither modify nor displace any existing housing and would not displace people, either temporarily or permanently. DTSC, in conjunction with oversight from DPR staff would conduct the proposed soil sampling and excavation action project. Therefore, no housing related impacts will be generated as a result of the proposed project. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Impact Analysis: The project would consist of the proposed soil excavation and sampling action. The project does not have a housing component and all work would take place within the confines of the EMSHP, with no additions or changes to existing local infrastructure. The project would neither modify nor displace any existing housing and would not displace people, either temporarily or permanently. DTSC, in conjunction with oversight from DPR staff would conduct the proposed soil sampling and excavation action project. Therefore, no people will be displaced as a result of the proposed project. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

13. Public Services

Project Activities Likely to Create an Impact: None.

The following activities have the potential to impact public services: The proposed project would not require, or generate the need for additional public services.

Description of Baseline Environmental Conditions: Public services include fire and police protection, schools, parks, and other public facilities. The proposed project benefits from existing public services, such as fire and police protection, because Empire Mine SHP is within the Planning Area boundary for the City of Grass Valley, Nevada County (City of Grass Valley 2007). However, it is important to evaluate the ability of the service agencies to adequately provide assistance during the proposed soil excavation and sampling action.

Fire protection

Note DTSC WATER TRUCK AND HAND TOOLS first line of protection on-site for any minor fires

The California Department of Fire and Forestry Protection (CalFire) has primary jurisdiction for fire suppression in State Responsibility Areas (SRA), including units of the State Park System (CalFire 2007). The closest CalFire station to Empire Mine SHP is northeast in Nevada City approximately 5.0 miles from the park unit and 5.5 miles from the project site (CalFire 2005). In addition, three local fire protection agencies, including the Grass Valley Fire Department, Nevada County Consolidated Fire District, and Ophir Hill Fire District, provide service within the Grass Valley General Planning Area. Grass Valley Fire Department currently has two stations serving the City of Grass Valley, the closest of which (Station 1) is about 1.5 miles and 2.0 miles northwest of the park unit main entrance and project site respectively (City of Grass Valley 2008, Google Maps 2008). In addition, DPR fire crews stationed in the Lake Tahoe area could be activated to assist in fire suppression operations (DPR).

In the event that a fire occurred during the proposed sampling action, DTSC would have access to water and fire suppression equipment to control the incident. In the unlikely event that a fire could not be controlled, OHFD would likely respond first to a fire emergency at EMSHP. However, firefighting units from any of the three local agencies could be the first responders depending upon availability. Any local first responders agency would relinquish command to Calfire upon arrival of its crews and equipment on scene.

Police protection: DPR rangers assigned to EMSHP are Peace Officer Standards and Training (POST) certified law enforcement officers. The rangers stationed at Empire Mine SHP patrol the park unit on a regular basis. The Grass Valley Police Department (GVPD) staffs a station approximately 1.5 miles from the park unit and provides police service for the City of Grass Valley (City of Grass Valley 2004). The Nevada County Sheriff is located within Nevada City over 4.5 miles to the northeast of the park unit. California Highway Patrol (CHP) has an office in Grass Valley approximately 2.25 miles north of the park unit. If DPR rangers require assistance at EMSHP, GVPD and the Nevada County Sheriff would assist DPR with any issues within park unit boundaries and CHP would provide assistance along public roadways in the vicinity of the park unit. No Park security would be required for sampling work areas, and all sampling excavation areas would be closed and heavy equipment would be removed at the end of the work day.

Schools: EMSHP is located near three school districts that provide educational services to the City of Grass Valley and Nevada County. The Grass Valley School District (GVSD) provides public education for children from pre-school through eighth grade (GVSD 2008). Hennessey Elementary School, part of GVSD, is approximately one mile northwest of the project site. Also part of the GVSD is Lyman Gilmore Middle School, located approximately two miles northwest of the EMSHP. The Nevada Joint Union High School District provides high school educational services to Grass Valley (City of Grass Valley 1999). The closest high school to the project site is Sierra Foothills High School located approximately one mile northwest of Osborne Hill. Union Hill Elementary School, just over one quarter mile east of the EMSHP, is part of the Union Hill Elementary School District.

Parks and Other Public Facilities: Currently portions of the EMSHP's Osborne Hill trail network are closed to the public for health and safety reasons. During project implementation, short segments of some trails may be closed to the public for several hours; however, the remaining approximately 650 acres of the park unit would remain open. There are no other public service facilities nearby that could be impacted during project implementation.

Analysis as to whether or not project activities would:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

Impact Analysis:

Fire Protection: The proposed project would allow for the excavation and sampling of soil within specified areas of the EMSHP. None of the project elements would contribute to an increase of park visitation and the level of required services is expected to remain relatively static. Any impact on services would be relatively temporary and nothing in the proposed scope would contribute to the need for an increased level of fire protection. DTSC will adhere to DPR’s Fire Safety Plan during implementation of the proposed project, which combined with the availability of on-site fire suppression equipment would significantly reduce the potential impact to fire protection services. No impact.

Police Protection: Since DPR rangers patrol the EMSHP, the proposed project would not result in any need for increased police service. No impact.

Parks and Other Public Facilities: There would be no impacts to schools, other parks, or other public facilities, as recreational trail users typically live locally or spend limited amount of time visiting the area. No impact.

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

14. Recreation

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions:

The EMSHP consists of 856 acres (DPR 2008a, Kim Snyder 2008) on the western slope of the Sierra Nevada Mountain Range, and is located just south of the city of Grass Valley. The park currently offers a variety of recreational opportunities, many of which are focused on the unique history of the oldest richest gold mine in California (Empire Mine Park Association 2008). Public facilities include numerous day use areas and trails, historic mine workings and buildings, a visitor center and gift show, museum, expansive formal gardens, and interpretive displays and exhibits highlighting the history of gold mining in California. Biking, hiking, horseback riding, picnicking, and wildlife viewing are other recreational opportunities in the park.

Analysis as to whether or not project activities would:

- a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Impact Analysis: The proposed project consists of a short term, limited sampling action and would neither increase the use of other, state, county, or city parks, other public lands or recreational facilities; nor would it increase the construction or expansion of any recreational facilities. The project is designed to allow for the limited excavation and collection of soil samples at specified, DPR approved locations at the EMSHP. No Impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- b. Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Impact Analysis: The proposed project would consist of the excavation and collection of limited soil samples in DPR approved areas of the EMSHP. The proposed project would not require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

15. Transportation and Traffic

Project Activities Likely to Create an Impact:

The following actions have the potential to impact transportation and traffic: None.

Description of Baseline Environmental Conditions: The EMSHP is located just south of the Nevada City/Grass Valley area, which is the primary urban center in western Nevada County. The major transportation issues of western Nevada County include an increased demand for transportation brought on by rapid residential and commercial growth in the rural setting. The main transportation pattern for the western portion of the county involves residential commuter traffic that originates from within the area and travels outside the area from home to work sites (Nevada County 1996).

Three state highways are located close to EMSHP and include State Routes (SR) 49, 20 and 174. The segment of SR 49 located west of the EMSHP connects Interstate 80 (I-80) at the city of Auburn to SR 20 in Grass Valley. This segment of SR 49 is approximately twenty-three miles long and for much of its length is a two lane rural road. However, from about one mile south of Grass Valley, it becomes a four-lane freeway (California Highways 2008a). As it enters Grass Valley, SR 49 merges with SR 20 and at this location also provides access to the EMSHP entrance by way of West and Each Empire streets. SR 20 runs in an east-west direction through the center of Grass Valley and is located north of the Empire Mine SHP. The stretch of SR 20 between where it merges with SR 49 and where it enters Nevada City is a four-lane highway and is approximately five miles long (California Highways 2008b). SR 174 is an approximately thirteen mile long rural, two-lane road that connects I-80 at Colfax to SR 20/49 in Grass Valley. SR 174 provides access to the park entrance at its intersection with the eastern terminus of East Empire Street. Grass Valley city streets provide surface street access to the EMSHP. Pedestrian access gates and vehicular gates used for ranger patrols, park maintenance, and emergency access are accessible from the one-lane Osborne Hill Road, a private residential street.

The Level of Service (LOS) is a means of describing traffic flow conditions based on delays and maneuverability. Ratings range from LOS "A" which describes free flowing conditions with no delays, to LOS "F" which represents gridlock and significant delays. Nevada County has established policies to maintain to improve LOS standards for roads in rural regions to a minimum level of C and for roads in community regions to a minimum level of D (Nevada County 1996). The 2005 Regional Transportation Plan produced by the Nevada County Transportation Commission (NCTC 2006) provides information for Year 2000 peak hour volumes in one direction along road stretches in the vicinity of EMSHP. SR 20 (i.e., East Main Street approximately 1.5 mile due north of the park unit) was listed with 3,150 vehicles per hour (vph). SR 49 approximately 0.5 miles south of the SR 49/20 merge had 3,000 vph, while SR 174 about 1.5 miles south of its intersection with SR 20 was listed with 550 vph. Empire Street, adjacent to Empire Mine SHP had 360 vph. All these locations were listed as having an LOS of "A", with the exception of Empire Street for which a LOS reading was not provided.

While the primary mode of transportation in Nevada County is by private automobile, transportation by public transit, rail, air, and non-motorized facilities are also available. Nine municipal airports, private airfields, and heliports are situated throughout Nevada County (Hometown Locator 2008, USGS 2008). Of these, the Nevada County Airpark is the main municipal airport serving western Nevada County and it is located over two miles east of Grass Valley and Empire Mine SHP (Hometown Locator 2008, Nevada County 2006).

Analysis as to whether or not project activities would:

- a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

Impact Analysis: All proposed project related traffic would occur within the EMSHP. Vehicles used to haul sampling equipment and materials (e.g. soil) to and from the excavation and sampling areas at the EMSHP would be limited to no more than six pick up trucks in number and would not cause an increase in traffic to local streets. A small excavator would be transported to the site using a truck trailer, and soil samples transported off site in sealed five gallon containers. Any traffic created by the proposed project would be temporary and intermittent, and the limited number of vehicles would not impact or increase traffic volume. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- b. Exceed, either individually or cumulatively, a level of service standard established by the country congestion management agency for designated roads or highway.

Impact Analysis: Transportation routes located in the entrance vicinity to the EMSHP currently operate at LOS "A". The temporary addition of a limited number of project related vehicle trips per day during daylight hours would not exceed, individually or cumulatively, the LOS rating for State Route 49, 20, or 174. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact Analysis: Implementation of the proposed project would not result in the alteration of any transportation routes, (roads or country bicycle routes that are currently in use), utilize incompatible equipment, or create an increase in traffic hazards. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- d. Result in inadequate emergency access.

Impact Analysis: The proposed excavation and sampling activities would not occur within in any of the roads, trails or transportation routes at the EMSHP, and utilize a limited number of vehicles and equipment. Therefore, the proposed project would not block, impede or otherwise compromise emergency access at the EMSHP. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- e. Result in inadequate parking capacity.

Impact Analysis: The proposed project would employ the use of a maximum number of six vehicles per day, and therefore not create a loss of available visitor parking space. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Impact Analysis: The proposed project would consist of the limited and short term duration of soil excavation and sampling activities at DPR specified areas of the EMSHP. The proposed project would be implemented in a manner consistent with adopted policies, plans, and programs supporting alternative transportation programs. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

16. Utilities and Service Systems

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions:

The EMSHP is located approximately 1.5 miles southeast of the City of Grass Valley. The following utilities and service systems are available for the use of the visiting public and Park personnel. The majority of the utilities are located near the EMSHP's entrance at the Visitor Center, public restrooms, gardens and grounds.

Water: The EMSHP utilizes both surface and groundwater to meet the needs of the park operations. Ground water that flows in an underground network of tunnels beneath the park is accessed via wells and only used for irrigation purposes. Potable water for the park unit is supplied by the Nevada Irrigation District (NID) (Clark 2008a). NID collects water from a high mountain watershed, stores the water in reservoirs, and moves it through a canal system to water treatment facilities (NID 2007). Potable water is then piped from the water treatment facility to EMSHP.

Wastewater: EMSHP is not connected to the municipal wastewater service provided by the Grass Valley Public Works Department (City of Grass Valley 2004, Clark 2008a). DPR utilizes septic systems and leach fields for the treatment and removal of wastewater that originates from inside the Park (Clark 2008).

Solid Waste: DPR Park personnel collect trash from public day use facilities and park residences and transport it to large bins where it is removed by Waste Management International to an approved offsite disposal facility (Clark 2008b).

Other Service Systems: Electrical service to EMSHP is provided by PG&E. A power line easement runs in an east-west direction along a PG&E easement, bisecting the park.

Analysis as to whether or not project activities would:

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

Impact Analysis: EMSHP is within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB). The proposed project would be in compliance with all applicable water quality standards and waste water discharge requirements. No impact.

Conclusion:

- Potentially Significant Impact
- Potentially Significant Unless Mitigated
- Less Than Significant Impact
- No Impact

- b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact Analysis: The proposed sampling and excavation project will not require the construction or expansion of waste water treatment facilities at the EMSHP. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact Analysis: The proposed soil excavation and sampling action would not require the construction of new storm water drainage facilities or the expansion of existing facilities. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

Impact Analysis: Potable water for the EMSHP is provided by the NID and the supply is adequate to meet the existing demand. The proposed project would not include the construction of new facilities that would increase demand for water from visitors or DPR park personnel. Overall water use will not change as a result of the proposed project. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- e. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments.

Impact Analysis: As described in the Environmental Setting, currently no wastewater or solid waste facilities are located at the EMSHP. DPR would not be required to install wastewater or solid waste facilities as part of the proposed soil excavation and sampling action. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

- f. Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs.

Impact Analysis: The proposed project would consist of a limited soil excavation and sampling action, and would not result in the generation of solid waste. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

g. Comply with federal, state, and local statutes and regulations related to solid waste.

Impact Analysis: The proposed project would consist of a limited soil excavation and sampling action, and would not result in the generation of solid waste. No impact.

Conclusion:

- Potentially Significant Impact
 Potentially Significant Unless Mitigated
 Less Than Significant Impact
 No Impact

References Used: Osborne Hill Trail Network Project, Empire Mine State Historic Park, Initial Study, Mitigated Negative Declaration, State Clearinghouse #2008112086, California Department of Parks & Recreation, January 2009

Mandatory Findings of Significance

Based on evidence provided in this Initial Study, DTSC makes the following findings:

- a. The project has does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.
- b. The project has does not have impacts that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.
- c. The project has does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

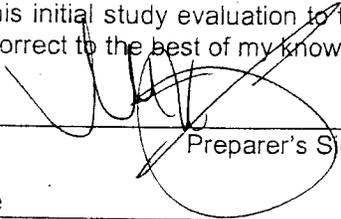
Determination of Appropriate Environmental Document:

Based on evidence provided in this Initial Study, DTSC makes the following determination:

- The proposed project COULD NOT HAVE a significant effect on the environment. A **Negative Declaration** will be prepared.
- The proposed project COULD HAVE a significant effect on the environment. However, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **Mitigated Negative Declaration** will be prepared.
- The proposed project MAY HAVE a significant effect on the environment. An **Environmental Impact Report** is required.
- The proposed project MAY HAVE a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **Environmental Impact Report** is required, but it must analyze only the effects that remain to be addressed.
- The proposed project COULD HAVE a significant effect on the environment. However, all potentially significant effects (a) have been analyzed adequately in an earlier Environmental Impact Report or Negative Declaration pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier Environmental Impact Report or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project. Therefore, nothing further is required.

Certification:

I hereby certify that the statements furnished above and in the attached exhibits, present the data and information required for this initial study evaluation to the best of my ability and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.



Preparer's Signature

8/13/09

Date

Maria Gillette

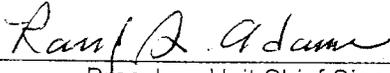
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Branch or Unit Chief Signature

8/13/09

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ATTACHMENT A
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