
Environmental Assessment

Operating Engineers Local Union
No. 3 Joint Apprenticeship Training Committee

Joint Training Center
Lease at the Yuba Goldfields
United States Bureau of Land Management

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Folsom Field Office

**ENVIRONMENTAL ASSESSMENT
FOR THE JOINT TRAINING CENTER
YUBA GOLDFIELDS**

TABLE OF CONTENTS

1	INTRODUCTION	2
1.1	Conformance with Land Use Plan.....	2
1.2	Relationship to Statutes, Regulations, or Other Plans.....	2
1.3	Purpose and Need for the Proposed Action.....	2
2	DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES	3
2.1	Proposed Action	3
2.2	Economic Considerations.....	6
2.3	Alternatives Considered	6
2.4	Alternatives Considered but Dismissed From Detailed Analysis	7
3	AFFECTED ENVIRONMENT	8
3.1	General	7
3.2	Cultural Resources	8
3.3	Biological Resources.....	9
3.4	Water Quality	22
3.5	Air Quality.....	24
3.6	Noise.....	28
4	ELEMENTS NOT AFFECTED BY THE PROPOSED ACTION	28
5	ENVIRONMENTAL IMPACTS OF ELEMENTS THAT MAY BE AFFECTED	29
5.1	Cultural Resources	29
5.2	Biological Resources.....	29
5.3	Water Quality	34
5.4	Air Quality.....	35
5.5	Noise.....	41
5.6	Socio-Economics.....	42
6	CUMULATIVE IMPACTS.....	42
7	CONSULTATION AND COORDINATION	44
7.1	Report Preparers	44
7.2	Persons and Agencies Contacted.....	45
7.3	Bibliography	45

LIST OF TABLES

Table 1 – Plant species identified at the project site on October 28, 2004.	10
Table 2 – Animal species observed on October 28, 2004 and from lists compiled from previous reports, or from USBLM Surveys.....	10
Table 3 – Representative Equipment	37
Table 4 – Diesel Equipment Exhaust emissions	37
Table 5 – Fugitive Dust as PM10	38
Table 6 – Air Pollutant Concentrations and Project Impact	39
Table 7 – Diesel Particulate Matter Cancer Risk.....	40

LIST OF FIGURES

(bound at end of text)

Figure 1. Project Location
Figure 2. Proposed Lease Area
Figure 3. Vicinity Topography
Figure 4. Site Aerial Photograph
Figure 5. Proposed Lease Activity
Figure 6. Site Vegetation
Figure 7. Special Status Species Records in Vicinity

ATTACHMENTS

Attachment A. Wetlands and botanical site review of the Yuba Goldfields project, Yuba County, California (North Fork Associates, Auburn, CA)

Attachment B. Analysis of Air Quality and Public Health Impacts Associated with the Construction and Operation of Training Center (Air Permitting Specialists, Wilton, CA and Thomas Reid Associates)

Attachment C. Noise Monitoring Study, Operating Engineers Joint Training Center, Yuba Goldfields (Thomas Reid Associates, January 2005)

**ENVIRONMENTAL ASSESSMENT
YUBA GOLDFIELDS
JOINT TRAINING CENTER**

Proposed Action Title/Type: Issuance of a 40-year, non-competitive lease under 43 CFR § 2920 with the Operating Engineers Local Union No.3 Joint Apprenticeship Training Committee to set up a heavy equipment training school (Training Center) within lands under the jurisdiction of the U.S. Bureau of Land Management (BLM) in the Yuba Goldfields (see Figure 1. Project Location and Figure 2. Proposed Lease Area).

Location of Proposed Action: The lease area is located in the southwest quarter of Section 27, T.16 N. R.5 E., MDM. Access to the site is via Hammonton Road, an un-maintained County road. The site is approximately 6 road miles northeast of where Hammonton Road intersects Hammonton-Smartville Road. See Figure 3. Vicinity Topography.

Applicant: Operating Engineers Local Union No.3 Joint Apprenticeship Training Committee (JATC), 7388 Murieta Drive, Rancho Murieta, CA 95683, (916) 354-2029, Attention: Curtis Brooks.

1 INTRODUCTION

BLM has revised the August 2005 EA based on input received from public comments and agency review. The revised EA includes minor modifications to address public comments and clarify or correct information in the EA, but does not alter any of the substantive analysis or conclusions of the 2005 EA.

1.1 Conformance with Land Use Plan.

The proposed action is subject to the Sierra Planning Area Management Framework Plan Amendment (MFP), approved July 15, 1988. This plan has been reviewed to determine that the proposed action conforms with the land use plan terms and conditions as required by 43 CFR 1610.5. The objective of the MFP amendment was to augment land tenure decisions (land use/disposal) of the original 1983 MFP and it also modified the decisions of the SYU-15 Timber Management Plan. The proposed action is located within Management Unit 13, the Custodial Management Area.

1.2 Relationship to Statutes, Regulations, or Other Plans.

The subject lands are public lands which were withdrawn in 1899 from sale and entry pursuant to the Caminetti Act of 1893. Under the Caminetti Act, the California Debris Commission (CDC) was created to regulate hydraulic mining and to prevent the discharge of mining debris into California waterways. To accomplish this, the CDC was granted the right to use public lands withdrawn under the Act, or “any rock, stone, timber, trees, brush or material thereon or therein” for any of the purposes of that Act. In the late 1890s and early 1900s the CDC carried out its mandate to contain mining debris in the Yuba River by dredging a new river channel, building “training walls” with dredged material to help maintain the river channel along its new course, and to construct Daguerre Point Dam. The CDC was abolished and its functions transferred to the U.S. Army Corps of Engineers under the Water Resources Development Act of 1986. The U.S. Army Corps of Engineers is not presently using any of the subject lands for purposes of the Caminetti Act and has no plans in the foreseeable future to do so.

The subject lands are in an area zoned M-2: Extractive Industrial Zone. The proposed action is in conformance with the Yuba County General Plan.

1.3 Purpose and Need for the Proposed Action.

The purpose of the proposed action is to develop and operate a long-term apprentice training facility for heavy equipment operators on BLM-administered public lands in the Yuba Goldfields. According to the JATC (the project proponent), the proposed training location in the Goldfields is ideally suited for this purpose. Their training center at Rancho Murrieta has to limit its operations during the winter rainy season but the use of heavy equipment on the well drained soils typical of the Goldfields could occur year-round. The proposed site has the necessary physical requirements for the project including direct access via County roads and readily available sources of electricity and water. The subject lands have been previously disturbed by past mining operations and would provide an excellent opportunity for training in reclamation procedures. Adequate aggregate resources suitable for use in road construction and maintenance exercises are also available in the proposed lease area.

The proposed project is needed to meet local and regional demands for heavy equipment operator training and to help promote economic growth for the City of Marysville, Yuba County, and other nearby counties.

Yuba County is one of the poorest counties in California. U.S. Census Bureau data show that median household income is only \$30,500 per year compared to a state average of about \$48,000. Per capita income (\$14,500) is less than 2/3 the state average and nearly 21% of the county's population lives below the poverty line compared to 14% for the state as a whole. In addition, the median value of owner-occupied housing units is just \$90,000 compared to state-wide average of \$211,000 according to the latest US Census Bureau data available for 1999 and 2000.

The Marysville City Council, and the Boards of Supervisors of Sutter and Yuba Counties have expressed their support for the proposed training facility. On May 6, 2003 the Yuba County Board of Supervisors unanimously passed Resolution No. 2003-67 in support of a training center and reaffirmed this resolution during a Board meeting on October 4, 2005.

2 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The proposed action is the construction and operation of an Operating Engineers Training Center (Training Center). Operating Engineers are the people who operate the heavy equipment at construction sites and at quarries and other facilities that produce rock, sand or gravel. They repair equipment on the job site and in the shops of contractors and they do specialized work such as operating all types of cranes, pile drivers, dredging rigs, drillers, concrete pumpers, water trucks for dust abatement, and portable rock crushers (refer to Table 3 for a list of equipment proposed for use). The proponent has requested a 40-year, non-competitive lease. For more detailed information, refer to the application on file received by BLM on September 15, 2004.

The proposed action has three main elements:

1. Installation and construction of facilities (class rooms, equipment maintenance and wash buildings, parking areas, etc.) in Lease Area 1 (see Figure 5).
2. Use of heavy equipment in Lease Area 3 for training in dozing, drilling, trenching, reclamation work and other heavy equipment operations (see Figure 5).
3. Excavation and processing of sand and gravel above the local water table in Lease Area 3 for use as road base aggregate in the construction of roads and the repair and maintenance of two segments of Hammonton Road inside the proposed lease boundary. The aggregate would also be used to surface proposed parking areas in Lease Area 1.

The proposed lease would allow use of sand and gravel on projects only within the lease area. An estimated 5,000 cubic yards of aggregate would be used to surface roads and parking areas in Lease Area 1, to repair Hammonton Road inside the lease area and to construct roads in Lease Area 3. No removal of aggregate materials from the lease area would be authorized by this lease. Mining operations that involve the excavation of over 1,000 cubic yards of material require reclamation plan approval under the California Surface Mining and Reclamation Act

(SMARA). The Training Center would be required to comply with this requirement unless a waiver is granted by the SMARA lead agency.

With the exception of the two segments of road within the proposed lease area, the lease would not authorize the reconstruction of Hammonton Road. This would require the use of an estimated 39,000 tons (26,000 cubic yards) of crushed aggregate. Removal of sand and gravel from the lease area to repair Hammonton Road would require separate authorization by BLM in the form of a Free Use Permit issued to Yuba County, provided that the county is interested in applying for such a permit. Refer to 43 CFR 3604. Separate authorizations by BLM will be required for any road construction, reclamation or flood control projects located outside of the lease area. Use of Hammonton Road through the lease area by the general public will not be restricted.

The public lands within the proposed lease area are described as follows:

Township 16 North, Range 5 East, Mount Diablo Meridian, Section 27:

S¹/₂N¹/₂NE¹/₄SW¹/₄, S¹/₂NE¹/₄SW¹/₄ and lands within those portions of Lots 4, 5, and 12 equivalent to the SE¹/₄NW¹/₄SW¹/₄ and E¹/₂SW¹/₄SW¹/₄, excluding lands north of the dredger tailings windrow canal that flows through lots 4, 12 and the S¹/₂NW¹/₄NE¹/₄SW¹/₄; Yuba County, California, containing 57 acres (more or less).

The proposed Training Center site consists of three separate lease areas (See Figure 4. Site Aerial Photograph):

Lease Area 1 (facilities). Lease Area 1 (see Figure 5) comprises about 15 acres of land lying south of Hammonton Road. It will house two stationary buildings: a 2,400 square-foot maintenance building, or shop, and a 2,400 square-foot equipment/vehicle wash building (see Figure 5. Proposed Lease Activity). In addition to the stationary buildings, Lease Area 1 will house three portable trailers serving as classrooms (12 x 44 ft. each), one trailer serving as a restroom (12 x 38 ft.), and one trailer serving as an administrative office (12 x 60 ft.). There will be no residential housing constructed at the Training Center.

The training center will require approximately 9,500 square yards of unpaved parking and unpaved roads connecting the parking areas to Hammonton Road and to each other. Approximately 20 pieces of heavy equipment (e.g., blades, loaders, scrapers, and bulldozers) will be stored on-site within the unpaved parking areas. No paved parking areas are proposed. The roads and parking areas will be surfaced with crushed gravel. Lease Area 1 will be fenced to control access and prevent unauthorized entry as indicated in Figure 5.

The two stationary buildings (proposed shop and wash buildings) in Lease Area 1 will be set on concrete slabs and roofed with a lightweight removable fabric roofing material. The equipment wash building will include a concrete drainage area that drains into an on-site holding tank. Used wash water will be pumped into portable tanks where it will be treated and recycled for use in the wash operation. Inadvertent spills or leaks from fuels, lubricants, and other machine fluids, including equipment wash water, will be contained and treated on-site as required by State and local laws and regulations pertaining to the handling of hazardous materials.

Storm water runoff from the roofed buildings will be captured, stored, and used for a variety of on-site operational purposes, including fire suppression, dust control, and other non-potable water uses. For the most part, non-potable water needs (such as fire and dust control) will be satisfied by pumping water from the perennial windrow canal near the northwest corner of Lease Area 3.

Potable water will be provided commercially through periodic deliveries.

Sanitation will be provided by portable toilets and commercial service, as needed.

Electrical power will be extended on-site via an existing PG&E power transmission line located near the southeast corner of the site.

Equipment fuel will be delivered directly by truck, so no on-site fuel storage will be required.

Lease Area 2 (expansion). Lease Area 2 (see Figure 5) comprises approximately 6 acres of land also lying south of Hammonton Road. Lease Area 2 will not be used for operations at this time. It will be included in the lease to provide for future expansion of the Training Center. Any future expansion that occurs in Lease Area 2 would be subject to additional environmental analysis by BLM at the time it is proposed.

Lease Area 3 (work area). Lease Area 3 (see Figure 5) consists of 36 acres located north of the training center (north of Hammonton Road) within the BLM lands located in Section 27. This area has been disturbed by past mining activities and much of it is covered with dredger tailings. Within this area, the student apprentices will receive training in the operation of heavy equipment and in the performance of a tracked vehicle rock, sand, and gravel crushing operation.

Training in Area 3 will involve up to 12 pieces of equipment such as scrapers, loaders, and bulldozers running in any given time period (used by two classes with six students each at any time) and would be dispersed throughout the 25-acre work area. Typical training involves 6 hours of equipment use in a day.

A portable crusher will be used as needed to crush rock and will be periodically moved around Lease Area 3. The aggregate material excavated and crushed within Lease Area 3 will not be washed as part of the training center work program.

Water for use by the water truck will be supplied by pump from the perennial windrow canal near the northwest corner of Lease Area 3. Part of the training program is the application of current industry Best Management Practices (BMP) for dust abatement.

BLM Stipulations. Based on consultations with the BLM, the JATC has agreed to the following stipulations which are incorporated in the proposed action:

- No disturbance of riparian vegetation is allowed without BLM review and approval of the activity proposed.
- No surface disturbance is allowed within the drip-line of trees with diameters exceeding four inches without BLM review and approval. No removal of trees with diameters exceeding 4 inches without BLM approval.

- Surface slopes at the margins of water bodies in the lease area will be left at grades no steeper than 3:1 (horizontal to vertical).
- Fines generated by aggregate screening and crushing will be stockpiled for use as a growing medium upon lease termination and final reclamation of the area.

Construction Schedule. Construction of the project facilities is expected to take 10 weeks. The proposed construction schedule by task is provided below.

YUBA GOLD FIELDS SATELLITE TRAINING CENTER PROPOSED SCHEDULE										
TASK	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Fence Construction Lease Area 1	█									
Equipment Move in and Staging		█								
Site Grading		█	█							
Construct Shop and Wash Building			█	█	█	█	█	█		
Begin rock crushing, hauling, and compacting						█	█	█	█	
Move in classrooms and other buildings								█	█	
Hook up electrical, water, and sewage									█	█

The dates for completion are projected from a start date that begins upon lease issuance following completion of the environmental assessment process.

2.2 Economic Considerations

The Training Center will provide benefits not only to the apprentices, trainees and their employers, but also to the larger community. The Training Center will also provide training opportunities for individuals in Yuba County as well as other surrounding areas. The Training Center will offer six-week classes on heavy equipment operations to up to 20 students at a time. The Center will also offer two-week classes to persons who are upgrading their equipment operations skills and the Center has the potential to serve hundreds of equipment operators living in the local three-county area.

Local operators will be able to maintain and upgrade their skills, which will also allow them to increase and maintain their wage scales. The measurable economic benefit to the local area will include increased wages and benefits of up to \$40,000 per year per student. It is also anticipated that the Center will create eight new local jobs, including four instructors, two mechanics, and two support staff at the Center and at the Operating Engineers Local 3 office in Yuba City. The students and staff and the school itself will also patronize local merchants for groceries, meals, motel rooms, recreation, fuel, and other supplies.

2.3 Alternatives Considered

One alternative to the proposed action is to grant a lease with a term of 20 years. The shorter term better matches BLM’s planning frequency on public lands in California. For example, the Folsom Field Office’s Sierra Planning Area MFP, last amended in the late 1980s, is currently being revised, and the new Sierra Resource Management Plan is expected to remain in effect for

at least two decades. This timeframe is consistent with BLM-California's statewide planning experience, with plans typically requiring revision or major amendments within 20 years. In addition, a 20-year term would provide more than enough time to amortize JATC's capital investment to establish the training center. Information provided by the JATC indicates that it would take 7 to 8 years to amortize its estimated \$7.3 million investment.

The only other feasible alternative considered in response to the proposed action is the no action alternative. Under this alternative, BLM would not issue a use authorization to the JATC and the Training Center would not be constructed or operated in the Yuba Goldfields.

2.4 Alternatives Considered but Dismissed From Detailed Analysis

One alternative considered was to grant a renewable 3-year land use permit under 43 CFR 2920.1-1(b) rather than a longer-term lease. This alternative was considered but dismissed from detailed analysis in the EA because a permit is not appropriate for the type of facility needed (two permanent structures) and the JATC would not be able to amortize its investment over a 3-year period. Such a permit would not provide JATC with sufficient certainty that would warrant the capital investment required. A short-term permit would not meet the purpose and need for a long-term facility.

Another alternative considered but dismissed was suggested by Western Aggregates, which has substantial land holdings in the Yuba Goldfields. Western offered to lease land it owns in the Goldfields about a half-mile east of the proposed lease area. The land would be leased to BLM for use by the JATC because, according to Western, labor laws would prohibit their leasing this land directly to the JATC. This alternative was dismissed from detailed analysis primarily because BLM has no legal authority to permit a regulated use of private lands and because the short term would not meet the purpose and need for the proposed action. Further, significantly less land would be suitable for use by the training center at the alternate location than at the proposed lease area.

No other lease areas on BLM-administered public lands within or outside of the Yuba Goldfields were identified during BLM's scoping process or during the EA public comment period, and none have been identified since. The proposed site was selected by the JATC because it meets its technical requirements for a training center. No other site on public lands within the Goldfields would be better suited for the Training Center requirements than the proposed lease area, particularly the availability of electrical power, water and training opportunities. This site was also chosen for the potentially significant socio-economic benefits that such a Training Center would bring to the economically depressed Sutter-Yuba county region.

3 AFFECTED ENVIRONMENT

3.1 General

The location of the proposed lease area is in the Sacramento Valley at an elevation of about 125 feet above mean sea level. The project site is located in rural Yuba County on Hammonton Road within the SW quarter of Section 27, Township 16 North, Range 5 East. It is situated in the Yuba Goldfields, a 10,000-acre landscape of low-lying ground that flanks the Yuba River and

that consists of windrows of dredger tailings (gravel piles), with ponds and waterways between these gravel piles.

Soil in the area is sparsely distributed, with most of the upland surface being simply washed gravel tailings. A regular flow of water through the area is carried by the Goldfields Canal which diverts water from the Yuba River at the South Yuba-Brophy Diversion and conveys it south. Vegetation in the subject area is generally sparse, but cottonwood trees and other riparian vegetation have become reestablished around the ponds and waterways (refer to Biological Resources section for more details). Rangeland and agricultural resources are negligible. Forestry resources are not present.

Scenic qualities and visual resources have been fully compromised by the conversion of the total landscape to a dredge field, however, a portion of the lease area (Areas 1 and 2) contain relatively intact blue oak woodland that has high scenic value. Recreational values are increasing with the recent opening up of public access to the BLM property.

3.2 Cultural Resources

The Nisenan tribe occupied the area at the time that Europeans first arrived in America. The Nisenan are related to their northern neighbors, the Maidu and Konkow. The Yuba River drainage has been inhabited for most of the last 2000 years. As Native Americans often lived in low rises next to streams, the rolling hills in the project area next to the banks of the Yuba River were a natural place for them to inhabit. There is one recorded instance of a Native American artifact found in the proposed lease area, a bedrock mortar (grinding cup) found in the southern part of Section 27.

The Yuba River was one of the first areas reached and worked by the wave of miners streaming into California during the Gold Rush. Gold dredging began in earnest in 1905, about which time W.P. Hammon began a gold dredging business along the Yuba River (known as the Yuba Consolidated Gold Fields). For a 65 year period ending in 1968, a total of 1.1 billion yards of material was moved along the Yuba River.

Since the project site has been severely disturbed as a result of gold mining it was considered unlikely that a survey of the surface would find further artifacts. While there is some probability that artifacts buried as a result of mining in the area may be found during earth moving activities, the probability of this occurring is considered low (Bowden, 2004).

A cultural resources inventory of the proposed lease area was conducted in June 2005 by staff of Sonoma State University (SSU). The survey identified an additional nine archaeological sites and other remains. These include two earthen levees, an irrigation canal (built in the 1930's), an electrical substation (used for the dredging operations in the 1950s-60s), a small dredge mining area, a short segment of the Grass Valley-Marysville Road, a small pond, a placer gold mining site (that possibly predates the dredge mining activity), concrete culverts, and property markers (Newland, July 2005). As part of their inventory, SSU cultural resource specialists contacted Native Americans by letter and follow-up phone calls to determine if Native American traditional cultural places and/or sacred sites exist within the proposed lease areas. To date, no traditional cultural places and/or sacred sites have been found here. In July 2005, staff of Sonoma State University prepared evaluations of the 14 resources recorded within the proposed lease area. A fifteenth resource, the prehistoric bedrock mortar site, could not be relocated and is

assumed to be either destroyed or outside of the APE. The bedrock mortar was therefore not evaluated. None of the evaluated 14 sites were found to be potentially eligible to the National Register of Historic Places (Newland, August 2005). BLM has accepted the results of SSU's evaluations. Results of the cultural resource survey are considered confidential and therefore the complete study is not included in the EA.

3.3 Biological Resources

The project site is located along the boundary of two distinct landforms: the Yuba Goldfields and the Sierra Nevada foothills. The Sierra Nevada foothills are located to the south of Hammonton road and consist of rolling foothills of open grassland and blue oak woodland habitats. In stark contrast to the foothills, the Yuba Goldfields are an unnatural topography created by mining. The project site straddles both sides of Hammonton Road, and includes portions of both landforms. Lease Areas 1 and 2 are located south of Hammonton Road and consist of blue oak woodland, grassland and some disturbed areas, and Lease Area 3 is located north of Hammonton Road, within the intensively-modified mining area. See Figure 3. Vicinity Topography and Figure 4. Site Aerial Photograph.

3.3.1 Vegetation Communities.

Vegetation within the foothills consists of California annual grassland series (native and non-native grassland) and the blue oak series (blue oak woodland, blue oak forest and blue oak savannah) (Sawyer, J. O., Keeler-Wolf, T, 1995). The dredge/gravel mined areas of the Yuba Goldfields support disturbed grassland and disturbed riparian vegetation. Vegetation communities found on the site are shown in Figure 6. Site Vegetation and are described below. A list of plant species found on the site from botanical surveys conducted on March 11 and May 20, 2005 by North Fork Associates is contained in Attachment A.

California Annual Grassland Series / Non-Native Grassland. Non-native annual grasses and non-native herbs dominate this regionally common grassland community. Common associated species in this community include Bromus species such as ripgut brome (*Bromus diandrus*), Spanish brome (*B. madritensis madritensis*), and soft chess (*B. hordeaceus*). Herbaceous invasive species such as yellow star thistle (*Centaurea solstitialis*), and Erodium species including storkbill (*Erodium botrys*) and filaree (*E. cicutarium*) are common. The oat grasses *Avena barbata* and *A. fatua* are also common as well as Italian wild rye (*Lolium multiflorum*). Native grasses include purple needlegrass (*Nasella pulchra*), squirreltail (*Elymus elymjoides*), blue grass (*Poa* spp.), annual hairgrass (*Deschampsia danthonioides*) and blue wild rye (*Elymus glaucus*). Native wildflowers occurring in the grasslands include California poppy (*Eschscholtzia californica*), popcorn flower (*Plagiobothrys* spp.), rancher's fire, common brodiaea (*Brodiaea pulchella*), Ithuriel's spear (*Triteleia laxa*), winecup clarkia (*Clarkia purpurea*), common madia (*Madia elegans*), and cream cups (*Platystemon californicus*).

The abundant seeds and flowers produced by the grasses and forbs in this community attract numerous insects and insectivorous and granivorous bird species and serve as an important wildlife resource. These habitats have an especially high wildlife value because they occur along the edges of forests and scrub communities where species can roost, nest or den. Common reptile species within this community include gopher snake (*Pituophis melanoleucus*), racer (*Coluber constrictor*) and western fence lizard (*Sceloporus occidentalis*). Raptors that were or

have been observed foraging over project area grasslands include red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*) and turkey vulture (*Cathartes aura*). Passerine birds observed or expected include savannah sparrow (*Passerculus sandwichensis*), house finch (*Carpodacus mexicanus*), violet-green swallow (*Tachycineta thalassina*) and western meadowlark (*Sturnella neglecta*).

Blue Oak Series. The blue oak series includes blue oak (*Quercus douglasii*) foothill pine (*Pinus sabiniana*), valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), and interior live oak (*Quercus wizlizenii*). Common shrubs include mountain mahogany (*Cercocarpus betuloides*), whiteleaf manzanita (*Arctostaphylos viscida*), buckbrush (*Ceanothus cuneatus*). Common grasses and herbs include golden back fern (*Pentagramma triangularis*), Common fiddleneck (*Amsinckia intermedia*), and purple needlegrass (*Nasella pulchra*).

Many wildlife species are known from blue oak habitats, including salamanders, snakes, songbirds, woodpeckers, mice, squirrels, deer and carnivores such as bobcats, coyotes and Mountain lions. Acorn producing forests are an important ecological wildlife component of the California landscape. Acorn crops provide forage for numerous species while the trees foliage attracts herbivores and insects, species that in turn attract larger predators and birds. These communities support a higher abundance and diversity of cavity-nesting/denning wildlife species due to the presence of mature and senescent oaks and snags. Downed woody debris can provide a suitable micro-climate for amphibian species such as California slender salamander (*Batrachoseps attenuata*), and ensatina (*Ensatina eschscholtzi*) Rodents such as California meadow mouse (*Microtus californica*) and Botta's pocket gopher (*Thomomys bottae*), along with songbirds provide food sources for a variety of predatory species such as red-tailed hawk, Cooper's hawk, gopher snake, rattlesnake, raccoon, bobcat, and coyote.

Yuba Goldfields Disturbed Lands. Due to the intensive disturbance to the land, the terrain has a matrix of ponds and discontinuous channels divided by gravel uplands. The ponds and channels are supported by subsurface water flow from the Yuba River. Soils in the Goldfields are indistinct or not present due to the extensive disturbance from the mining and the lack of episodic flooding from the Yuba River that would deposit sediments. Vegetation within the Goldfields consists of riparian trees and shrubs such as Fremont cottonwood and arroyo willow on the gravel banks of wetland features, and freshwater marsh plants such as cattails and bulrush within the shallow margins of ponds. Due to the lack of soil within the Goldfields, riparian trees and emergent wetland vegetation are frequently found growing directly out of gravel substrates. Upland areas (gravel piles, terraces, and ridges) are either devoid of vegetation or have a sparse cover of grasses and weedy herbaceous plants.

Prior to the gold mining, the Yuba Goldfields area was a flat to gradually sloping floodplain of the Yuba River. It is likely that extensive riparian woodland dominated the floodplain providing extensive habitat for birds, amphibians, and mammals. In the past 100+ years, some of these riparian plant species have colonized portions of the Yuba Goldfields. A number of non-native, invasive plants, as well as introduced species such as the bullfrog have colonized the Goldfields.

3.3.2 Threatened or Endangered Species

Regulatory Setting. Section 7 of the Endangered Species Act requires that all federal agencies seek to conserve imperiled species. Each Federal agency must, "in consultation with and with the assistance of the Secretary of the Interior, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered

or threatened species or result in the destruction or adverse modification of habitat of such species". The consultation process mandated under Section 7 is carried out by the U.S. Fish and Wildlife Service on behalf of the Secretary of the Interior. If the proposed project were to disturb federally-listed animal or plant species, then the Bureau of Land Management would be subject to the provisions of Section 7 of the Act.

Methods. A thorough search of existing information was conducted to determine which special status plants or animals may be found within the project area. Information sources included the California Natural Diversity database (CNDDDB), the BLM website, USFWS lists, sensitive species within blue oak and riparian woodlands and previous EA's conducted for projects within the Goldfields. See Figure 7. Special Status Species Records in Vicinity. Two field visits (October 28, 2004 and March 11, 2005) to the site were made by Thomas Reid Associates biologists to assess the project area for biological resources including wetland habitats and the potential for threatened or endangered plant and animal species. Observed species and habitats identified are listed in Tables 1 and 2.

Table 1. Plant species identified at the project site on October 28, 2004 and March 11, 2005.

Location	Common Name	Scientific Name
Foothill Woodland	Gray pine	<i>Pinus sabiniana</i>
	Buckbrush	<i>Ceanothus cuneatus cuneatus</i>
	Coast live oak	<i>Quercus agrifolia</i>
	Interior live oak	<i>Quercus wizlizenii</i>
	Coulter pine	<i>Pinus coulterii</i>
	Yellow star thistle	<i>Centaurea solstices</i>
	Bromuss sp.	<i>Bromus tectorum /rubens</i>
	Wild oat	<i>Avena fatua</i>
Goldfields	Fremont Cottonwood	<i>Populus fremontii</i>
	Vervain	<i>Verbena hastate</i>
	Red willow	<i>Salix laevigata</i>
	Sandbar willow	<i>Salix hinsdiana</i>
	Shining willow	<i>Salix lucida ssp. Lasiandra</i>
	Buckwheat	<i>Eriogonum sp.</i>
	Vinegar weed	<i>Trichostema lanceolatum</i>
	Medusa head	<i>Elymus caput-medusae</i>
	Umbrella sedge	<i>Cyperus sp.</i>
	Water smartweed	<i>Polygonum amphibium</i>
	Distichlis	<i>Distichlis spicata</i>
	Himalaya blackberry	<i>Rubus discolor</i>
	Wild grape	<i>Vitis californica</i>
	Bullrush	<i>Scirpis sp</i>

Table 2. Animal species observed on October 28, 2004 and March 11, 2005, and from lists compiled from previous reports, or from USBLM Surveys.

Animals	Common Name	Scientific Name
Yuba Goldfields and Surrounding Foothills and Yuba River Area	Wild turkey	<i>Meleagris gallopavo</i>
	Northern flicker	<i>Colaptes auratus</i>
	Kingfisher	<i>Megaceryle alcyon</i>

	Cormorant	Phalacrocorax auritus
	Turkey vulture	Cathartes aura
	Northern harrier	Circus cyaneus
	Spotted towhee	Pipilo maculatus
	California towhee	Pipilo crissalis
	Kinglet	<i>Regulus</i> sp.
	Bald eagle	Haliaeetus laucocephalus
	Osprey	Pandion haliaetus
	Killdeer	Charadrius vociferus
	Great blue heron	Ardea herodias
	Green heron	Butorides virescens
	Lesser goldfinch	Carduelis pasltria
	Wilson's warbler	Wilsonia pusilla
	Yellow warbler	Dendroica petechia
	Scrub jay	Aphelocoma californica
	Acorn woodpecker	Melanerpes formicivorus
	Downy woodpecker	Picoides pubescens
	Nuttall's woodpecker	Picoides nuttallii
	Red-winged blackbird	Agelaius phoeniceus
	Bewick's wren	Thryomanes bewickii
	House wren	Troglodytes aedon
	California quail	Callipepla californica
	Mourning dove	Zenaida macroura
	House finch	Carpodacus mexicanus
	Purple finch	Carpodacus purpureus
	Great egret	Ardea alba
	Common moorhen	Gallinula chloropus
	European Starling	Sturnus vulgaris
	Black phoebe	Sayornis nigricans
	Canada goose	Branta Canadensis
	Mallard	Anas platyrhynchos
	Common merganser	Mergus merganser
	Bushtit	Psaltriparus minimus
	Tree swallow	Tachycineta bicolor
	Violet-green swallow	Tachycineta thalassina
	Chipping sparrow	Spizella passerine
	Lark sparrow	Chondestes grammacus
	Blue grosbeak	Guiraca caerulea
	Prairie falcon	Falco mexicanus
	Lesser nighthawk	Chordeiles acutipennis
	Ash-throated flycatcher	Myiarchus cinerascens
	Northern flicker	Colaptes aurantus
	Raven	Corvus corax
	Lazuli bunting	Passerina amoena
	Brown-headed cowbird	Molothrus ater
	Western kingbird	Tyrannus verticalis
	Oak titmouse	Baeolophus inornatus
	Great horned owl	Bubo virginianus
	Black-tailed mule deer	Odocoileus hemionus
	Bobcat	Lynx rufus
	Beaver	Castor Canadensis
	River otter	Lutra canadensis
	Coyote	Canis latrans
	Desert cottontail	Sylvilagus audubonii

	Gray squirrel	Sciurus griseus
	Pacific treefrog	Hyla regilla
	Aquatic garter snake	Thamnophis couchi
Ponds	Bullfrog	Rana catesbiana
	Bluegill	Lepomis macrochirus

3.3.3 Soils

Soils on the site consist of dredged mine tailings within the Goldfields (Dumps, Mine tailings) and gravelling loams (Redding-Corning complex, 3-8 percent slopes) within the adjacent foothills. The Redding-Corning complex consists of gravelly loams on high fan terraces, with an indurated hardpan at a depth of 33 inches. The soil has a dense clay subsoil and soil permeability is very slow, restricting the effective rooting depth to 20-40 inches.

3.3.4 Plants

No listed or sensitive plant species were observed on the project site during the October 2004, March 2005, and May 2005 site visits. No listed or sensitive plant species are expected to occur in the project area (Lease Area 1, Lease Area 2, and Lease Area 3) due to the disturbed condition of the Yuba Goldfields, and the types of habitats present (blue oak woodland, annual grassland). Refer to Attachment for the results of botanical surveys conducted in May 2005 by North Fork Associates.

One federally listed threatened plant (Laynes' butterweed, *Senecio layneae*) has been recorded within 10 miles of the project site. This plant occurs on gabbroic or serpentine-derived soils in the central Sierra foothills of California within chaparral or oak woodland communities from 200-1000 meters in elevation. It blooms from April to July. Due to the lack of appropriate soils (mine tailings in the Goldfields, and Redding-Corning complex; gravelly loams in the blue oak woodland/grassland areas) the habitat suitable for this species is not present in the project area.

Two sensitive plants were identified as having potential to occur on the site, dwarf downingia (*Downingia pusila*, CNPS List 2), and legenera (*Legenera limosa*, CNPS List 1B). Dwarf downingia is an annual herb that occurs in valley and foothill grassland and vernal pools. It blooms from March to May. The nearest recorded location of this species is Beale Air Force Base approximately 3 miles south of the project site. Legenera is an annual herb that occurs in valley foothill vernal pool grasslands. It blooms from April to June. The nearest recorded location of this species is near Beale Air Force Base approximately 5.5 miles southwest of the project site.

3.3.5 Animals

Included in this section are descriptions of steelhead and salmon habitat in the vicinity of the proposed lease area. However, the wetlands in the Goldfields are isolated, artificially created features that do not have surface connections to other water bodies. They are not hydrologically or biologically functioning natural floodplain wetlands. Anadromous fish such as Chinook salmon and steelhead trout swim in the Yuba River about a half of a mile north of the lease area, but they cannot enter these isolated canals and ponds.

California Red legged frog (*Rana aurora draytonii*) - Federal Threatened

August 2006

The California red-legged frog (CRLF) uses a variety of habitats, depending on the life stage and season, but usually occurs within one mile of the breeding site. The breeding season extends from November through March in sites including coastal lagoons, freshwater marshes, permanent water and semi-permanent natural ponds, and slow-moving backwater portions of streams supporting aquatic vegetation such as bulrush (*Scirpus* sp.) and cattails (*Typha* sp.). In the absence of natural aquatic habitats, this species will also occur within human-made habitats including, stock ponds and siltation ponds. Juvenile CRLF are generally closely associated with a water source. However, adults may take refuge in upland areas in small mammal burrows, or in moist, dense vegetation in the surrounding area.

The closest recorded observation of CRLF is in eastern Yuba County, over 20 miles east of the project site. This species has not been recorded within the Yuba Goldfields, however, it is unknown if any thorough survey work for this species has been done within the Goldfields. The Goldfields are known to support several populations of bullfrog (*Rana catesbiana*), and the permanent water within the ponds tends to favor bullfrogs and fish species, both of which can, through predation and competition, decrease the survival ability of CRLF.

Critical Habitat has been proposed for this species, however, no lands within Yuba County are included (USFWS, 2004).

Central Valley steelhead *Oncorhynchus mykiss* - Federal Threatened (NMFS)

The National Marine Fisheries Service (NMFS) classifies and lists steelhead and salmon by evolutionarily significant unit (ESU). To be considered an ESU, a population or group of populations must be (1) substantially reproductively isolated from other populations and (2) contributing substantially to the ecological or genetic diversity of the biological species (Myers et al., 1998). Factors used in determining ESUs include spatial, temporal, and genetic isolation, maturation rates, and other life history traits. All of the steelhead ESUs were listed as threatened under the FESA in 1998. Steelhead are not listed under the CESA (California Endangered Species Act).

Critical habitat for salmon and steelhead was originally proposed in 2000, but was withdrawn in 2002. A subsequent proposed rule on critical habitat was published in December 2004 and is currently in public review. The proposed rule recommends exclusion of critical habitat from portions of the Yuba River Subbasin (Department of Commerce, NOAA, 2004).

The overall distribution of steelhead ranges from southern California to the Kuskoswim drainages near the Alaska Range. In California, central valley steelhead are restricted to the Sacramento River downstream of Keswick Dam; the lower reaches of the Feather River, American River, and other large tributaries downstream of impassible dams; small, perennial tributaries of the Sacramento River; and the Sacramento River Delta (Jones and Stokes, 2004).

The Central Valley ESU of steelhead includes the Sacramento and San Joaquin Rivers and their tributaries. This ESU was further divided into 26 subbasin units. The section of the Yuba River near the Yuba Goldfields is contained in Unit 9: Yuba River Subbasin (HU #5517).

Steelhead make spawning runs into several rivers and small creeks flowing into the Bay. In general, adult steelhead return to rivers and creeks in the Bay region from October to April, and spawning takes place in the rivers from December to May. Juvenile steelhead can spend up to 7

years in freshwater before moving downstream as smolts during March to May (Busby et al. 1996). Steelhead can spend up to 3 years in saltwater before returning to freshwater to spawn (Barnhardt 1986). Since juvenile steelhead remain in the creeks year-round, adequate flows, suitable water temperatures and an abundant food supply are necessary throughout the year in order to sustain steelhead populations (USACE 1999). The most critical period is in the summer and early fall when these conditions become limiting.

Central Valley spring run Chinook salmon (*Oncorhynchus tshawytscha*) - Federal Threatened (NMFS) and Central Valley fall/late fall run Chinook Salmon (*Oncorhynchus tshawytscha*) - Federal Candidate species: Proposed Critical Habitat

Chinook salmon are also classified based on the time of year they return to their natal spawning streams. Spring and winter run salmon are the rarest of the salmon runs and both runs have been listed as threatened under the FESA. The fall run is the more common and robust run and was classified as a federal candidate species in 1999. The winter run salmon does not occur in the Yuba River.

Spring run Chinook enter freshwater between March and July. They migrate far upriver (unlike fall run Chinook salmon) and spend the summer months in refuge or holding pools. Because spring run Chinook are immature upon freshwater entry, the refuge pools are essential for gonad maturation and gamete production. The refuge pool requirements discussed in the above section are fundamental for spring run Chinook salmon reproduction. Spawning begins in late August and extends through early October, peaking in September. Spawning occurs in gravel beds or riffles at the tails of the refuge pools. The eggs incubate from October to January and remain in the gravel for 2-4 weeks after hatching (Bureau of Land Management, Arcata Field Office, 2002). During this time they rely on yolk-sac reserves for food. Emergence typically occurs from December to mid-April. Both incubation time and time of emergence are greatly influenced by temperature. Fry begin ocean migration in mid to late spring.

Fall run Chinook enter freshwater during the fall months (usually beginning in early October) at an advanced stage of maturity and spawn in the mainstem or lower tributaries (unlike spring run Chinook, which enter freshwater as immature fish and migrate far upstream to spawn). Fall run Chinook spawn in October and November, a few days or weeks after entering freshwater. They do not spend time in refuge ponds like the spring run Chinook. The eggs incubate until December and fry may emerge at any time from December to mid-April. Both incubation time and time of emergence are greatly influenced by temperature. Fry begin ocean migration in mid to late spring.

Chinook salmon historically ranged from the Ventura River in California to Point Hope, Alaska, on the eastern edge of the Pacific and in the western portion of the Pacific Ocean from Hokkaido, Japan, to the Anadyr River in Russia (Healey 1991).

The general life history of the anadromous chinook salmon includes both freshwater and oceanic phases of development. Incubation, hatching, and emergence occur in freshwater, followed by migration to the ocean at which time smoltification occurs. Chinook salmon typically spend 3 to 6 years maturing in the ocean before returning as adults to spawn in their natal streams (Moyle 1976).

The lower Yuba River is contained within the Central Valley ESU for the spring-run Chinook. It is contained within Unit 8, Yuba River Subbasin (HU #5517). According to the December 2004 Proposed Rule for critical habitat “the Lower Yuba is also considered to have good “seed” population of both spring Chinook and steelhead and both populations are considered relatively free of hatchery influence” (Department of Commerce, NOAA, 2004).

3.3.6 Vernal Pool Animal Species

Conservancy fairy shrimp (*Branchinecta conservatio*)

The remaining populations of the federally listed endangered Conservancy fairy shrimp are restricted to northern, central, and portions of southern California. Populations are found at six disjunctive locations: the Vina Plains north of Chico in Tehama County; south of Chico in Butte County; Sacramento National Wildlife Refuge in Glenn County; the Jepson Prairie in Solano County; the Haystack Mountain area northeast of Merced in Merced County (Eng et al. 1990), and the Lockwood Valley in Ventura County (Michael Fugate, University of California at Riverside, pers. comm., 1991). The Conservancy fairy shrimp has been observed from November to early April.

Conservancy fairy shrimp populations live in ephemeral freshwater habitats, such as vernal pools and swales. None are known to occur in running or marine waters or other permanent bodies of water. Vernal pools are unique seasonal wetlands that support a wide variety of wildlife, from waterfowl to amphibians– all of which rely on the protein-rich food sources found in these ecosystems (Geer and Foulk 1999/2000).

The distribution of vernal pools is highly discontinuous and some of the aquatic invertebrates that are found in this habitat occur only in specific geographic areas. Due to local topography and geology, the pools are usually clustered into pool complexes (Holland and Jain 1988). Pools within a complex typically are separated by distances on the order of meters and may form dense, interconnected mosaics of small pools or a sparser scattering of larger pools. Conservancy fairy shrimp are sporadic in their distribution, often inhabiting only one or a few pools in otherwise more widespread pool complexes (Larry Eng, California Department of Fish and Game, pers. comm., 1990; Jamie King, *in litt.*, 1992; Marie Simovich, *in litt.*, 1992; Richard Brusca, San Diego Museum of Natural History, pers. comm., 1992).

Conservancy fairy shrimp are ecologically dependent on seasonal fluctuations in their habitat, such as absence or presence of water during specific times of the year, duration of inundation, and other environmental factors that include specific salinity, conductivity, dissolved solids, and pH levels. Water chemistry is one of the most important factors in determining the distribution of fairy shrimp (Belk 1977; Jamie King, University of California, *in litt.*, 1992; Marie Simovich, University of San Diego, *in litt.*, 1992). The pools at Jepson Prairie and Vina Plains inhabited by this animal have very low conductivity, total dissolved solids (TDS), and alkalinity (Barclay and Knight 1984; Eng et al. 1990). The pools inhabited by the Conservancy fairy shrimp are highly turbid and large, such as the 36 hectare Olcott Lake at the Jepson Prairie (Eng, pers. comm., 1990). Note the above text was taken from USFWS website of endangered species (www.fws.gov) and the sub references are cited there.

Vernal Pool tadpole shrimp (*Lepidurus packardii*)

The federally listed endangered vernal pool tadpole shrimp is known from 18 populations in the Central Valley, ranging from east of Redding in Shasta County south to the San Luis National Wildlife Refuge in Merced County. It is also found in a single vernal pool complex located on the San Francisco Bay National Wildlife Refuge in the City of Fremont, Alameda County (USFWS 1994). No new populations of vernal pool tadpole shrimp have been discovered since their listing in 1994.

The vernal pool tadpole shrimp inhabits deeper pools that remain inundated for at least seven weeks (Gallagher 1996). These pools can range in size from five square meters to 36 hectares and can contain clear to highly turbid water. Some inhabited pools have a very low conductivity, TDS, and alkalinity (USFWS 1994). Inhabited pools are located most commonly in grass-bottomed swales in old alluvial soils underlain by hardpan or in mud-bottomed pools containing highly turbid water (USFWS 1994).

Vernal Pool Fairy Shrimp (*Brachinecta lynchi*)

This federally listed threatened vernal pool fairy shrimp is found from Red Bluff in Shasta County south through much of the Central Valley where it is found from about 10-290 m in elevation. Also in disjunct populations down to Riverside County in the South Coast Mountains Region where it is found as high as 1,160 m (Eriksen and Belk 1999).

As of 1994 there were 32 known populations extending from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County and along the central coast range from northern Solano County to Pinnacles in San Benito County (USFWS 1994). Five of these populations are believed to be comprised of a single inhabited pool. Four additional, disjunct populations exist, one near Soda Lake in San Luis Obispo County, one in the mountain grasslands of northern Santa Barbara County, one near the Santa Rosa Plateau in Riverside County, and one near Rancho California in Riverside County (USFWS 1994). Populations of fairy shrimp are defined by pool complexes rather than by individual vernal pools. Except for the discovery of a population of vernal pool fairy shrimp in Jackson County, Oregon, in 1998, the range and distribution of this species has not changed since the final rule in 1994.

This species has a sporadic distribution within vernal pool complexes, and the majority of pools in a given complex typically are not inhabited by the species (USFWS 1994). The vernal pool fairy shrimp typically is found at low population densities. Only rarely does it co-occur with other fairy shrimp species, but when it does, the vernal pool fairy shrimp is never the numerically dominant one.

The majority of known populations of vernal pool fairy shrimp inhabit relatively unpredictable and short-lived vernal pools with cool (4.5-23°C), clear to tea-colored water. The water in pools inhabited by this species has low TDS (48-481 ppm), conductivity, alkalinity (22-274 ppm), and chloride and a pH range of 6.3-8.5 (USFWS 1994, Eriksen and Belk 1999). Inhabited pools are most commonly found in grass or mud-bottomed swales or basalt flow depression pools in unplowed grasslands (USFWS 1994). However, one population occurs in sandstone rock outcrops and another in alkaline vernal pools.

Several observations of vernal pool fairy shrimp species (*Branchinecta conservacion*, *B. lynchi*, *Lepidurus parkardi*), (CNDDDB, 2004) have been observed from 4 to 6 miles south - southwest of

the proposed project site. All of the locations have been recorded south-southwest of Hammonton Road and Smartsville Road within vernal pool complexes on Beale Air Force Base lands.

Critical Habitat has been designated for the vernal pool invertebrates but does not include the Yuba Goldfields (USFWS, 2003). The nearest critical habitat area is the Beale Unit. The Beale Unit is located in southwestern Yuba County, south of the Yuba River and Yuba Goldfields, east of State Route 70, and north of the Bear River adjacent to Beale AFB. All the lands within this unit are privately owned.

Valley Longhorn Elderberry Beetle (*Desmocerus californicus dimorphus*)

The valley elderberry longhorn beetle (VELB) was listed by the USFWS as Threatened on August 8, 1980. A Recovery Plan was published for this species in August 1984. Critical Habitat was designated for the VELB in 1980. Only two areas were identified as critical habitat for the species and both are located in Sacramento County. The project area does not support critical habitat for the VELB.

The VELB is endemic to moist valley oak woodlands along the margins of rivers and streams in the Lower Sacramento and upper San Joaquin Valleys of California, where elderberry (*Sambucus* spp.), its food plant, grows. The USFWS currently considers the Central Valley and surrounding foothills (below 914 m elevation) from Redding south through Kern County as the range of VELB (USFWS 1996).

Collection records indicate that adults may be found from mid-March until early June, but most records were for late April to mid-May. Adults are diurnal. VELB feed on elderberry (*Sambucus* spp.) pith, flower and foliage at all life stages. It is not known whether they are limited to a particular species of elderberry. Feeding may be limited by elderberry age and/or physical dimensions since emergence holes are most often found in trees with girths of 15-65 cm. (USFWS 1984). Females lay eggs in crevices in the bark of the elderberry. Upon hatching the larvae tunnel into the tree where they spend 1-2 years eating the interior wood prior to pupating. Adult VELB emerge in spring when elderberries flower, and feed on elderberry flowers and foliage until about June when they mate (USFWS 1984). Clutch size is not known, but there are usually only one or a few larvae burrows per elderberry tree (USFWS 1984). The entire life cycle of VELB lasts about two years. Adult males live for just a few days while adult females live for just a few weeks.

This species and its associated elderberry host plant has been recorded in several locations along a transmission line corridor within the Yuba Goldfields and also south of Hammonton Road, between 2 to 3 miles west of the project site. The project area was surveyed for the highly visible elderberry shrubs in October 2004 and in March 2005 and none were observed. VELB are therefore are not expected to occur within the project area.

Critical Habitat has been designated for this species and all is contained within Sacramento County (USFWS, 1980).

Bald Eagle (*Haliaeetus leucocephalus*)

The bald eagle is a federally listed threatened species and a California endangered and fully protected species. It is a permanent resident and winter migrant in California. The species winters throughout most of California at lakes, reservoirs, river systems, and some rangelands

and coastal wetlands. The breeding range is mainly in mountainous habitats near reservoirs, lakes and rivers, mainly in the northern two-thirds of the State, in the Central Coast Range, and on Santa Catalina Island.

Bald eagles require large bodies of water or free-flowing rivers with abundant fish along with adjacent snags or other perches. They nest in large trees, especially ponderosa pine. Perches high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near water. Roosts communally in winter in dense, sheltered, remote conifer stands.

Due to the presence of the Yuba River, the bald eagle is likely to occur in the project vicinity and could use trees on or around the project site for perching. There are no suitable tall trees for nesting.

No Critical Habitat has been designated for this species.

3.3.7 Other Species of Concern

In addition to the listed threatened or endangered species, the Sacramento Office of the U.S. Fish and Wildlife Service maintains a list of Species of Concern. These species are sensitive species that have not been listed, proposed for listing, nor placed in candidate status. "Species of concern" is an informal term used by some, but not all U.S. Fish and Wildlife offices. It is BLM policy not to take actions that could contribute to the listing of these species as threatened and endangered species. This document will evaluate impacts of the action on these species, and suggest appropriate mitigation as necessary.

Bank Swallow (*Riparia riparia*) - California Threatened

This species nests in colonies on banks or cliffs adjacent to streams, canals or lakes. Foraging Bank Swallows take insects on the wing; accordingly, they are found over a wide variety of land cover types. However, Bank Swallows dig nest burrows in nearly vertical banks/cliff faces and require substrates comprised of soft soils such as fine sandy loam, loam, silt loam, and sand (Garrison et al. 1987). Suitable banks for nesting must be at least 1 meter (3.3 feet) above ground or water for predator avoidance (Garrison 2002). Suitable nest sites are few and are scattered throughout the species' remaining California range; they are most often found at coastal river mouths, large rivers in the Sacramento Valley, rivers and wildlife refuges in northeastern California, and occasionally in gravel and sand mines that provide and maintain nesting habitat (Grinnell and Miller 1944; California Department of Fish and Game 1995).

There are several records of this species within Yuba County along the Feather River. The nearest record of this species is approximately 10 miles north of the project site (CNDDDB, 2004). There is no habitat present for this species within the proposed building envelope of the project, however this species may utilize stream bank areas along the Yuba River.

Tricolored Blackbird (*Agelaius tricolor*) - California Species of Special Concern

Tricolored Blackbirds are mostly a resident of California. They are common locally throughout the Central Valley. Breeding colonies are typically located near fresh water, within emergent wetland with tall, dense cattails or tules (Zeiner, et al 1990). This species will also nest in thickets, of willow, blackberry, wild rose, and tall grasses. Forages in grassland and cropland habitats.

This species has been observed approximately 1 mile north of the project site, as recently as 1994 (Pers. Comm. Darlene McGriff, CDFG). The Yuba Goldfields provide abundant cattail and tule marsh habitat that could support this species.

Burrowing Owl (*Athene cunicularia*) – Federal Species of Concern, California Species of Concern

Burrowing owls occur in open, dry grassland, desert, pinyon-juniper and ponderosa pine habitats. This species nests in old burrows, primarily California ground squirrel burrows or other small mammals. Sometimes uses artificial nest holes and culverts. Conversion of grasslands to agriculture, expanding urbanization, and the poisoning of ground squirrels have contributed to the decline of this species.

One historic observation of this species was recorded “in the vicinity of the Goldfields southwest of McCartie Hill” in 1906 (CNDDDB, 2004). No suitable burrows were observed within the proposed training facility site during the biological survey in October 2004, and it is highly unlikely this species would be present within the project envelope. However, this species could potentially be found in upland areas within the Yuba Goldfields and in the surrounding foothill grasslands where suitable burrows or other man-made structures are present.

Northwestern pond turtle (*Emys (=Clemmys) marmorata marmorata*) - Federal Species of Concern, California Species of Concern

Northwestern pond turtles require slow-moving water with dense submergent vegetation, and floating or submerged or overhanging wood or rocks for basking sites. For reproduction, this species needs upland areas adjacent to aquatic sites that have good solar exposure for nesting. Nesting sites are typically dry, un-shaded, and with at least partial south-facing aspect. Pond turtles may utilize nesting sites as far as one mile from their aquatic habitat.

The closest recorded observation of western pond turtle is at Dry Creek, located on the north side of the Yuba River approximately 1.5 miles north of the project site. Though the Yuba Goldfields provide abundant potential habitat for this species, no pond turtles have been recorded in the Goldfields. The proposed project could impact western pond turtle if upland breeding habitat is disturbed through construction activities, or if turtles are impacted from heavy equipment training operations in the Goldfields.

The Yuba Goldfields provide abundant aquatic habitat to support northwestern pond turtles. However the introduction of centrarchid (bass, sunfish, crappie) fishes into many of the ponds within the Goldfields, may decrease the potential for this species to survive.

Loggerhead shrike (*Lanius ludovicianus*) – Federal Species of Concern, California Species of Special Concern

Loggerhead shrike’s forage over grasslands and use small trees, shrubs, and fence posts for perching. This species feeds on insects, small mammals and amphibians. Shrike’s have a unique feeding practice of skewering their prey on a sharp twig, thorn or barb wire. This species nests in shrublands near open grasslands. This species may forage over the open grassland within the proposed project area.

3.3.8 Migratory Birds

The Federal Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing or possessing migratory birds is unlawful. The list of migratory birds covered under this Act is lengthy and includes many birds that are known to occur in the project area including many listed in Table 2.

3.3.9 Wetlands

Executive Order 11990 (1977) requires that, "Each agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands." Potential impacts to wetlands must be considered when a federal agency engages in activities that affect land use or land management.

North of Hammonton Road, in Lease Area 3, water is ponded between the dredger tailing windrows. These perennial ponds and canals have no surface connection to the Yuba River but are interconnected below ground as percolation through the windrows. They are supported primarily by ground water which moves freely through the surrounding substrate. Direct precipitation and runoff from upland areas are less significant water sources.

The Goldfields were artificially created through mining operations, and the US Army Corps of Engineers has stated that the Yuba Goldfields are not subject to regulation under the Clean Water Act. The Corps has stated that "the excavation and use of ponds as part of active mining operations in the Goldfields was exempted from any Clean Water Act regulation by the Corps, even including areas not in use for extended periods of time and areas exhibiting wetlands characteristics" (RWQCB, 2000). The Corps typically takes jurisdiction over natural water bodies and wetland features, and over artificially created wetlands when a surface connection to natural waters is present (RWQCB, 2000). The wetlands within the Goldfields are isolated features and do not have surface water connections to any other water bodies.

Though most of the gravel mining and disturbance activities within Yuba Goldfields has occurred north of Hammonton Road along the flood plain of the Yuba River, there are "pockets" of disturbed areas within the foothills of grassland and blue oak woodland habitats south of Hammonton Road. Lease Areas 1 and 2 exhibit characteristics of both natural slopes with grassland and blue oak woodland, and disturbed terrain with berms and water-filled depressions. All of the wetlands observed within Lease Area 1 and 2 appear to have formed within basins created through earth moving activities associated with either the Yuba Goldfields historic gold and gravel mining operations or more recent ranching activities. In Lease Area 3, man-made pits excavated deeper than the local water table have contributed to the formation of wetlands. The project will draw water from the perennial windrow canal near the northwest corner of Lease Area 3 for use in the equipment wash facility and for dust control spraying. This is the most suitable location as it is on-site and it flows at a relatively high rate.

Because surface water on-site and in the Goldfields primarily occurs in canals and depressions (ponds) resulting from dredging operations, and because they are not connected through surface water pathways to the Yuba River, it is understood that they are not considered "waters of the U.S." or "waters of the state". The Corps exempts Goldfields ponds and canals from Clean Water

Act jurisdiction under its industrial process exemption (51 Fed. Reg. 41217). In their evaluation of other facilities in the Goldfields, the Central Valley Regional Board has concurred with the Corps determination and has made a historical practice of issuing Waste Discharge Requirements (WDRs) instead of National Pollutant Discharge Elimination System (NPDES) permits for mining activities in the Goldfields (see Central Valley Regional Board Order No. R5-2002-0138). Despite these considerations, the project will not involve washing aggregate materials and therefore, with the exception of stormwater runoff (which will be treated in swales), there will be no discharge to the ponds and canals. We do not expect that WDRs will be required for the project.

3.4 Water Quality

The project is located about one half mile south of the Yuba River and about two miles upstream of the Daguerre Point Dam, along the edge of the dredger tailings (Goldfields) zone which is roughly contained north of Hammonton Road. The Yuba River, which once followed a pathway somewhat south of its current location, flows west southwest towards Yuba City where it discharges into the Feather River, a tributary of the Sacramento River. Average monthly flows in the Yuba River measured near Marysville (USGS 11421000) are regulated by releases from Englebright Dam and range from 817 cfs in September to 4,589 cfs in February over the 59 year period of record (water years 1944 to 2003).

3.4.1 Drainage

Drainage patterns on the site reflect both topographic features and the unique land use history of the area. Stormwater runoff from Lease Areas 1 and 2 that does not pond in low areas or infiltrate into the soil flows to the north where it is captured in a roadside ditch along the south side of Hammonton Road. This ditch conveys water to one of several culverts under the road. Runoff from Lease Area 1 is released into a roadside ditch on the north side of Hammonton Road which flows west northwest to one of the windrow canals. This ditch receives runoff from a larger watershed which includes off-site areas to the south and east. It is likely that, with the exception of major storm events, most water in the ditch infiltrates into the highly permeable dredger tailings prior to reaching the canal. The canal is isolated from the Yuba River; however, water from the canal infiltrates into the dredger tailings and is eventually released to the Yuba River downstream. Runoff from Lease Area 2 follows a similar pattern but drains to a different windrow pond.

Lease Area 3, significantly impacted by dredging, is comprised of cobbly substrate which is very permeable. It is likely that most precipitation infiltrates into the ground. Any surface runoff that occurs would be to one of the windrow ponds or canals.

The project is not expected to alter drainage patterns at the site or in downstream waters. No paved parking is proposed; thus increases in peak runoff rates are not expected. Runoff from impervious roof surfaces will be captured, stored, and used for on-site operational purposes (see Proposed Action).

3.4.2 Ground water

Ground-water movement at the project site is significantly influenced by 1) the Yuba River, 2) Daguerre Point Dam, and 3) characteristics of the dredger tailings. Mapping and dye tests

completed in 1971 (Cedergren, 1971) show that ground water movement is in a westerly direction, roughly parallel to the Yuba River. Ground water moves through highly permeable, continuous stringers of cobbles and boulders which are separated and possibly underlain by less permeable sand deposits. These well sorted deposits are the result of dredging activities. Measurements of the permeabilities of the cobble and boulder deposits ranged from 8,000 to 200,000 ft/day with an estimated average of 10,000 ft/day; whereas sand deposit average permeabilities were estimated at 100 ft/day (Cedergren, 1971). Ground water at the site is relatively shallow and is exposed in the windrow ponds and canals. Where it is exposed at the surface in the windrow canals, ground water flows at a rate of about 80 cfs (measured on-site on May 17, 1971). Most ground water is eventually directed back to the Yuba River through an outlet canal located about one mile downstream of the Daguerre Point Dam (California Department of Water Resources, 1999).

The Central Valley Regional Board Staff Report on Goldfields mining operations (RWQCB, 2000) cited several lines of evidence supporting their claims that ground water exposed in windrow ponds and canals are not "waters of the U.S." and discharges to ground water are not subject to the Clean Water Act NPDES permitting requirements. However, the project does not involve wastewater discharges to surface or ground water. In addition, the project will not extract aggregate from a depth below the site ground water levels.

3.4.3 Water Quality

The Central Valley Regional Board has designated existing and potential beneficial uses for the Yuba River and the underlying ground water (RWQCB, 1998). In the Yuba River, between Englebright Dam and its confluence with the Feather River, designated existing beneficial uses include: irrigation (AGR), stock watering (AGR), hydropower generation (POW), water contact recreation (REC-1), canoeing and rafting (REC-1), non-contact recreation (REC-2), warm freshwater habitat (WARM), cold freshwater habitat (COLD), migration of aquatic organisms (MIGR), spawning, reproduction, and/or early development (SPWN), and wildlife habitat (WILD). Ground water in the region are considered suitable or potentially suitable for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).

Specific conductance is a measure of a waters ability to conduct electricity and is used as a proxy for total dissolved solids (TDS). During a site visit on December 17, 2004, specific conductance measurements in seasonal and perennial surface waters on the site and in adjacent areas ranged from 37 to 133 $\mu\text{mhos/cm}$ @ 25°C. To put these values in perspective, rainwater typically has a specific conductance of about 20 $\mu\text{mhos/cm}$ @ 25°C; whereas seawater is in the range of 47,000 $\mu\text{mhos/cm}$ @ 25°C.

Because of the Goldfields unique history, mercury has been cited as a concern in the ponds and canals on-site as well as sediments within those waters. High levels of mercury bioaccumulation have been reported in the Yuba River and a correlation between high mercury concentrations and small-size (clay) particles in the Goldfields have been confirmed (Hunerlach and others, 2004). Dredging operations function to remove mercury from the hydraulic mine tailings; thus, areas such as Lease Area 3, which have been dredged relatively recently for gold, are likely to have lower mercury concentrations than areas that have not been dredged recently or at all (Hunerlach and others, 2004).

Limited mercury sampling in one on-site windrow canal was conducted by the U.S. Geological Survey (USGS) as part of a study commissioned by the BLM (unpublished data from the USGS). Five other sampling sites were established within a quarter mile to the north and northwest of the project site. Sediment samples were also collected as part of the study but have not been analyzed yet due to lack of funding. Water samples were analyzed for total and dissolved methylmercury and mercury. Total methylmercury ranged from <0.04 to 0.95 ng/L with <0.04 ng/L reported for the on-site canal. Dissolved methylmercury ranged from <0.04 to 0.47 mg/L with <0.04 ng/L reported for the on-site canal. Total mercury ranged from 1.76 to 5.13 ng/L with 2.12 ng/L reported for the on-site canal. Dissolved mercury ranged from 0.96 to 2.53 ng/L with 0.96 ng/L reported for the on-site canal. All data are preliminary and subject to change. Total mercury concentrations did not exceed the California Toxic Rule (CTR) Human Health criteria of 50 ng/L or the EPA recommended criteria for freshwater aquatic life protection of 770 ng/L (chronic) and 1400 ng/L (acute). Methylmercury is not listed in the CTR. The EPA, through the Integrated Risk Information System, recommends that methylmercury not exceed 70 ng/L in drinking water.

Water will be drawn from one of the on-site windrow canals and used at the equipment washing facility where it will be treated and recycled back into the wash operation. Canal water will also be sprayed as a means of dust control. Because ground water flows through this canal at a rate of about 80 cfs, it is unlikely that fine sediments are deposited in the canal. There are no expected releases of mercury-contaminated water or re-suspension of mercury-contaminated sediments associated with the project. Aggregates will not be extracted from a depth below ground water levels and washing of aggregates is not part of the project; thus no wastewater will be generated.

3.5 Air Quality

3.5.1 Setting

The proposed lease site is in Yuba County. Yuba and Sutter County comprise the Feather River Air Quality Management District (FRAQMD), a portion of the Northern Sacramento Valley Air Basin (NSVAB). The NSVAB is bounded on the north and west by the Coastal Ranges, and on the east by the southern portion of the Cascades mountain range and the northern portion of the Sierra Nevada mountain range. These mountains create a barrier to air flow which, under certain meteorological conditions, can trap pollutants in the valley.

The climate of the valley portions of Yuba County typically includes cool, relatively mild winters and hot, dry summers. During summer, prevailing winds in the NSVAB are from the south. Winter in the Sacramento Valley is characterized by either northerly or southerly wind patterns.

In addition to prevailing wind patterns that control the rate of dispersion of local pollutant emissions, Yuba County experiences two types of inversions that affect the air quality. The first type of inversion layer contributes to photochemical smog problems by confining pollution to a shallow layer near the ground. This occurs in the summer when sinking air forms a "lid" over the region. The second type of inversion occurs when the air near the ground cools while the air aloft remains warm. These inversions occur during winter nights and can cause localized air pollution "hot spots" near emission sources because of poor dispersion. The formation of heavy fog ("tule fog") during this season contributes to inversion layering. Calm conditions are common in night

and early morning during winter, often in association with inversion conditions, and this factor also contributes to stagnation. In the Sacramento Valley, the inversion layer usually extends from about 500 feet to 1,200 feet elevation.

Air quality standards in the proposed project area are administered by the Feather River Air Quality Management District (FRAQMD). According to the FRAQMD, approximately 60 to 70 percent of NSVAB air pollution comes from mobile sources, which includes on-road and off road motor vehicles (cars, trucks, planes, trains, tractors, combines, motorcycles, boats, etc.). The population within the FRAQMD region is projected to increase to 192,700 residents by the year 2010 (a 50 percent increase over 1990 figures). Urban expansion resulting from this growth will result in an increase of vehicle miles driven resulting in a continual increase over time from mobile sources in the region. The remaining 30 to 40 percent of regional air pollution is a result of stationary sources that include agricultural operations, open burning of vegetative wastes, wood burning for residential heating, manufacturing industries, electric generation industries, diesel backup generators, retail gasoline, local bulk distribution facilities, auto body shops, dry cleaners, landfills, aggregate mines, and naturally-occurring sources (non-manmade emission sources, including biological and geological sources, wildfires, and windblown dust).

3.5.2 Ambient Air Quality Standards

In 1969, California established the first California Ambient Air Quality Standards (CAAQS), which are administered by the California Air Resources Board (CARB). The following year, the Federal Clean Air Act Amendments of 1970 established National Ambient Air Quality Standards (NAAQS) administered by the U.S. Environmental Protection Agency (EPA). Although both processes focused on mitigating the effects of poor air quality on health, the State and federal ambient standards were developed independently with differing purposes and methods. As a result, considerable differences exist between State and national standards currently in effect in California.

Particulate matter associated with diesel exhaust is also recognized to pose a risk to the general population and is of growing concern. EPA and CARB have been developing formalized guidelines for assessing the risk of particulate diesel exhaust to the general population and have not, to date, issued final direction on this matter. EPA and CARB Diesel Risk Reduction Plan (DRRP) efforts are currently focusing on improvements to the quality of diesel fuel, tightened restrictions on new diesel engines, and reducing emissions from existing diesel engines. Diesel fuel sold in California is specifically designed to reduce particulate matter emissions related to diesel exhaust. Emission standards for diesel engines have been tightening through the use of mandated improvements to engine design and implementation of advanced technologies.

The US EPA has recently promulgated a series of emissions control requirement for on-highway and off-highway diesel exhaust emissions. Emissions from existing diesel engines will be reduced through the development of engine retrofit emission control devices such as diesel particulate filters. By 2010, particulate emissions will be reduced by nearly 90 percent.

FRAQMD operates a monitoring network which measures the ambient concentrations of four criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), and inhalable particulate matter (PM₁₀). Existing and probable future levels of air quality in the Yuba County

area can be best inferred from ambient air quality measurements conducted by the FRAQMD at its Yuba City air monitoring station.

FRAQMD is currently in Nonattainment for the State ozone and PM₁₀ standards, while simultaneously being in Attainment for those pollutants under the federal standards. Overall air quality trends presented in Table 3.4-2 show a general improvement for CO and ozone, and a fairly constant trend line for PM₁₀.

Ozone

Ozone is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving hydrocarbons (HC) and nitrogen oxides (NO_x). Ozone is a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production by the photochemical reaction process. Ozone causes eye and respiratory irritation, reduces resistance to lung infection, and may aggravate pulmonary conditions in persons with lung disease. FRAQMD is currently in State Nonattainment status for ozone. Exceedance of the State standard has occurred an average of 4.8 times per year in the last five years. The less stringent federal standard of 0.12 ppm for one hour has not been exceeded during the last five years. Under federal guidelines, Attainment is achieved when no more than 3 violations occur within a 3-year period. The proposed project area thus meets the one-hour federal ozone standard even though the basin as a whole has still not reached Attainment. The federal 8-hour ozone standard is expected to eventually replace the hourly standard.

Carbon Monoxide (CO)

CO is an odorless, invisible gas usually formed as the result of incomplete combustion of organic substances. CO is produced almost exclusively through the combustion of petroleum fuels in motor vehicles and from residential wood burning. High levels of CO can impair the transport of oxygen in the bloodstream and thereby aggravate cardiovascular disease and cause fatigue, headaches, and dizziness. FRAQMD is currently in State Unclassified status for CO. Exceedances of state CO standards did not occur between 1998 and 2002. Measurements of carbon monoxide (CO) show low baseline levels with the 8-hour maximum not exceeding 54 percent of the allowable State standard (the 8-hour exposure considered unhealthy for sensitive receptors.)

Nitrogen Dioxide (NO₂)/ Nitrogen Oxides (NO_x)

Nitrogen dioxide (NO₂) is one of the nitrogen oxides (NO_x), which are produced from burning fuels, including gasoline and coal. Nitrogen oxides react with reactive organic gas (found in paints and solvents) to form smog, which can harm health, damage the environment, and cause poor visibility. NO_x is a major component of acid rain. There is no ambient air quality standard for NO_x, but there is a standard for Nitrogen Dioxide (NO₂) where short exposure to high levels may cause lung damage. FRAQMD is currently in State Unclassified status for NO₂. The latest pollutant trends information suggests that the standards for this pollutant will not be exceeded in the foreseeable future.

Respirable Particulate Matter (PM₁₀)

Particulate matter is a mixture of solid particles and liquid droplets found in the air, otherwise known as soot. Particulate matter may be produced by natural causes or by human activity. PM₁₀ consists of "respirable" particulates smaller than or equal to 10 microns in diameter that can

cause adverse health effects. PM₁₀ can include certain substances, such as sulfates and nitrates, which can cause lung damage directly, or can contain absorbed gases (e.g., chlorides or ammonium) that may be injurious to health. FRAQMD is currently in State Nonattainment status for PM₁₀. Exceedances of the State PM₁₀ standard have occurred an average of 5.8 times per year in the last five years, in the project vicinity. State PM₁₀ standards were exceeded on 29 measurements (PM₁₀ is not monitored every day) in the last five years. Federal PM₁₀ standards were not exceeded at the Yuba City air monitoring station between 1998 and 2002.

Fine Particulate Matter (PM_{2.5})

In July 1997, the U. S. Environmental Protection Agency adopted a new NAAQS standard for PM_{2.5}, which represents the “fine” fraction of inhalable particulate matter (particles smaller than or equal to 2.5 microns in diameter), and is primarily a product of combustion. PM_{2.5} causes health problems by penetrating deeply into the lungs, and is responsible for most of the visibility reduction attributable to particulate matter. The EPA has not promulgated enforcement measures for this pollutant class. California established a comprehensive PM_{2.5} monitoring network in 1999 for the purpose of comparing PM_{2.5} levels in the State to federal standards. California has not adopted a 24-hour standard for PM_{2.5}, but in July 2003 the State adopted an annual standard which is more stringent than the federal standard. The FRAQMD is currently designated Unclassifiable for the State PM_{2.5} standard. Therefore, PM_{2.5} is not considered in this Air Quality impact assessment.

Other State-Designated Criteria Pollutants

The FRAQMD is either in Attainment or Unclassified for the following State standards: sulfur dioxide (SO₂), sulfates, hydrogen sulfide, lead, and visibility-reducing particles.

Serpentine is a mineral commonly found in seismically active regions of California, usually in association with ultramafic rocks and along associated faults. Certain types of serpentine occur naturally in a fibrous form known generically as asbestos. Asbestos is a known carcinogen and inhalation of asbestos may result in the development of lung cancer or mesothelioma.

The valley portion of Yuba County is characterized by alluvial deposits of loose sandy and gravelly materials washed down from the Sierra Nevada. Although serpentine is widely distributed at elevations of approximately 1,000 to 3,000 feet elevation in the Sierra Nevada, it is not typically found in the geological formations present on the proposed project site. Thus, hazardous exposure to asbestos-containing serpentine materials would not be a concern with the proposed project.

3.6 Noise

The existing noise environment of the Yuba Goldfield project site is typical of open, rural areas with little man-made noise other than occasional aircraft over flights. The site is remote. The only physical access to the site is Hammonton Road, an unmaintained, gravel/seal-coat road with deep potholes. The site is 5.3 road miles from Hammonton-Smartsville Road and four miles from State Highway 20. TRA conducted noise monitoring during weekday daylight hours typical of the operating period of the proposed action. During the monitoring period only a few cars were observed driving on Hammonton Road through the middle of the project area. The site is open, with scattered vegetation along drainages and near ponds and uneven terrain. Sound propagates well in line-of-sight with moderate ground absorption.

The project vicinity is open public land to the north and private rural residential land to the south and east of the classroom site. The nearest residence is 1000 feet east of the proposed classroom building, and some 1600 feet from the proposed portable gravel crusher. The residence is within sight distance of the project, but it is separated from both the classroom building and the work area by relatively dense stands of oak trees. Horses and goats are among the farm animals that are housed on the adjacent private property. Other residences in the site vicinity are more than $\frac{3}{4}$ mile away from the project site.

A noise survey at the site found an average sound level (LEQ) of 42 dBA. High noise levels measured ranged from 41.0 to 57.5 dBA and the background level was typically 38 dBA. These results typify what would be perceived as a very quiet environment, devoid of human sources. By comparison, a typical suburban daytime location would be roughly 10 dB higher in all categories with a typical LEQ of 50 to 58 dBA. Refer to Attachment C for more details.

4 ELEMENTS NOT AFFECTED BY THE PROPOSED ACTION

ACECs (Areas of Critical Environmental Concern). The proposed lease area is not located in an ACEC.

Farmlands, Prime/Unique. Due to the historic dredging operations, very little soil exists in the area. There are no mapped prime or unique farmland soils within the lease area.

Floodplains. The proposed facilities buildings would be build south of the FEMA 100-year flood plain which extends to Hammonton Road but not onto the building site.

Native American Religious Concerns. None expected.

Wastes, Hazardous/solid. The nearest listed (Cortese List) hazardous waste sites are at Beale Air Force Base and Camp Beale. No sites are within the Yuba Goldfields. The project would not affect existing solid waste facilities and all solid waste generated by the project would be trucked off-site to an appropriate disposal facility.

Wild & Scenic Rivers. The Yuba River is not included in the Federal Wild and Scenic Rivers System and was not on the list of Study Rivers (source: website for Federal Wild and Scenic Rivers).

Wilderness. The Yuba Goldfields and the proposed lease area are not within any designated wilderness areas.

5 ENVIRONMENTAL IMPACTS OF ELEMENTS THAT MAY BE AFFECTED

5.1 Cultural Resources

5.1.1 *Proposed Project Alternative*

Impact CUL-1: There is a remote possibility that previously unidentified cultural resources could be buried within the proposed lease areas and these resources could be uncovered and/or damaged during construction and operation of the Training Center.

Mitigation CUL-1: Training Center staff should consult with a cultural resources expert knowledgeable with the potential resources that could be found in the project area. The expert should conduct a training session with Center staff on how to identify potential cultural resources so they can provide ongoing monitoring of the work of the students and can teach the students about cultural resources identification and protection.

The Training Center should designate a staff member as Cultural Resources Coordinator (CRC) and coordinate with BLM so that BLM can provide background information on cultural resources that may be encountered. If pre-historic or historic period cultural resources are found during project construction or operation, the CRC shall ensure that project-related personnel do not move or alter the materials or their context until after consulting with a cultural resources expert. Prehistoric resources that could be found include: “chert or obsidian flakes, projectile points, and other flaked-stone artifacts; mortars, pestles, and other groundstone tools; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials” (Bowden, 2004). Historic resources that could be found include “stone or adobe foundations or walls; abandoned roads or ditches; structures and remains with square nails, and refuse deposits or bottle dumps, often located in old walls or privies” (Bowden, 2004). The Operating Engineers will immediately notify BLM if any previously unidentified cultural resources are found during the construction and operation of the Training Center. If such a discovery is made, the Operating Engineers will do its best to preserve the cultural resource until BLM staff has the opportunity to investigate it and determine whether it is significant or not.

Residual Impacts: There would be no residual impacts remaining after mitigation.

5.1.2 *No Project Alternative.*

There would be no impacts associated with the no action alternative and thus no mitigation required.

5.2 Biological Resources

5.2.1 *Proposed Project Alternative*

The proposed footprint of the buildings and training facilities would impact approximately five acres of disturbed annual grassland, and would not impact any federally protected wetlands or other sensitive habitats. The implementation of mitigation measures BIO-1 through BIO-3 would assure 1) that any sensitive annual plants are not impacted by project construction, 2) the future use of the site by nesting raptors or other mobile sensitive species would be avoided or minimized and 3) wetland habitats would not be significantly impacted.

Through the operation of the Joint Training Center, re-shaping of 36 acres of disturbed land will be done to restore wetland values to the Goldfields. As a result, the project will have a beneficial impact upon the ecosystem of the area, in particular wetlands and riparian floodplains.

Plants

Botanical surveys were conducted in the project area in October 2004, and in March and May 2005 to determine if the site supports any federal, state, or CNPS special status plant species. Results of the March 11 and May 20, 2005 surveys conducted by North Fork Associates are contained in Attachment A. No listed or special status plants were found during the surveys and none are expected to occur on the site.

Populations of sensitive annual plant species are unlikely to be present in the project area based on the results of the October 2004 and March 2005 field investigations.

Noxious Weeds

Botanical surveys conducted in the project area found patches of noxious weeds in certain locations, including yellow star thistle, Himalayan blackberry, and Medusa-head grass. There is potential for the project to spread these noxious weeds and others that could occur in the project area of vicinity including Italian thistle, black mustard, tree of heaven, and fig. Implementation of mitigation measure BIO-1 should reduce the spread of noxious weeds from project related activities.

Animals

California Red legged frog (*Rana aurora draytonii*)

Though CRLF may not be present at this time in the Goldfields, due to the large amount of pond habitat there is good potential for colonization or reintroduction into restored semi-permanent ponds in the future. Upland habitat in the adjacent foothills would provide excellent dry season aestivation habitat for this species. As part of this project to restore the natural floodplain contours of the Goldfields through heavy equipment training, Training Center staff could learn to identify this species and provide ongoing monitoring of the work of the students and teach the students how to identify and avoid harming this species (BIO-2). Because California red-legged frogs are not present on the site, there is no effect to California red-legged frog.

Salmonids.

The proposed project will not impact any habitat within the Yuba River directly. However since the Goldfields are hydrologically connected to the Yuba River through groundwater flows, the project could have indirect impacts to sensitive fisheries habitat through water quality impacts if

protective measures are not taken. Implementation of the erosion control measures contained in the project Stormwater Pollution Prevention Plan would eliminate water quality impacts and indirect impacts to sensitive fisheries habitat (see Mitigation Measure HYD-1).

Vernal Pool Species.

Due to the disturbed condition of the Yuba Goldfields it is unlikely that vernal pool species are present. However the presence of seasonal wetlands in Lease Areas 1 and 2 provide potential, though unlikely, habitat for vernal pool species. The project would avoid 98% (all but 0.004 acres) of this habitat, which has formed under artificial conditions. The proposed construction area in Lease Area 1 was surveyed for vernal pool habitat in March and May 2005 and all wetland features were mapped (see Attachment A). Recommended mitigation measures include construction monitoring to avoid any inadvertent disturbance of seasonal wetland habitat (BIO-3). No lands within the Yuba Goldfields have been designated Critical Habitat for the vernal pool invertebrates (USFWS, 2003). Because the vernal pool acreage in the lease area is very small and the pools were deemed unlikely to support vernal pool species, there would be no effect on vernal pools species from the proposed project.

Valley Elderberry Longhorn Beetle (VELB).

The project area was surveyed for elderberry shrubs in October 2004 and March and May 2005 and none were observed. As a result, no impacts to the VELB would occur since the VELB is dependent upon its elderberry host plant.

Bald Eagle (*Haliaeetus leucocephalus*).

The presence of heavy equipment operation in the area may dissuade this raptor from using perching sites within the immediate project site, however, there is an abundance of other suitable perching sites (oak trees and cottonwoods) in the project vicinity which can be used by the eagle. Because of abundant surrounding perch sites, the project would have no effect on Bald Eagles.

Other Species of Concern

Bank Swallow (*Riparia riparia*) - California Threatened

The Yuba Goldfields, due to the high gravel and cobble sized material, are unlikely to provide suitable substrate for nesting and it is therefore highly unlikely that bank swallows would be impacted by this project. Breeding colonies are highly visible and if this species were to colonize proposed training areas, pre-construction surveys by trained staff would have a high probability of identifying this species (BIO-2).

Tricolored Blackbird (*Agelaius tricolor*) - California Species of Special Concern. As part of this project to restore the natural floodplain contours of the Goldfields through heavy equipment training, Training Center staff could learn to identify this species and provide ongoing monitoring of the work of the students and teach the students how to identify and avoid harming this species. Restoration projects conducted could provide additional habitat to support this species by expanding the amount of cattail/tule marsh habitat.

Burrowing Owl (*Athene cunicularia*) – Federal Species of Concern, California Species of Concern

As part of this project to restore the natural floodplain contours of the Goldfields through heavy equipment training, Training Center staff could learn to identify this species and provide ongoing

monitoring of the work of the students and teach the students how to identify and avoid harming this species (BIO-2).

Northwestern pond turtle (*Emys (=Clemmys) marmorata marmorata*) - Federal Species of Concern, California Species of Concern

Creation of ponded habitat within the Goldfields where Centrarchid fishes are excluded may increase the potential for northwestern pond turtle and California red-legged frog colonization and/or successful reintroduction. As part of this project to restore the natural floodplain contours of the Goldfields through heavy equipment training, Training Center staff could learn to identify this species and provide ongoing monitoring of the work of the students and teach the students how to identify and avoid harming this species (BIO-2).

Loggerhead shrike (*Lanius ludovicianus*) – Federal Species of Concern, California Species of Special Concern

There is potential for this species to utilize the project site for foraging. Mitigation measure BIO-2 would ensure that loggerhead shrike is not adversely affected by the project.

Nesting Raptors.

The large oak and cottonwood trees on the project site may provide habitat for nesting raptors (e.g. eagles, hawks and owls) protected under California Department of Fish and Game Code and the Migratory Bird Treaty Act. If trees within the project area or vicinity are being used for raptor nesting, nests could be disturbed by construction noise and activity. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment, which would be a significant impact. Mitigation measure BIO-2 would ensure that nesting raptors are not adversely affected by the project.

Other Migratory Birds.

During the course of training operations other migratory birds may be disturbed or harmed. In particular, killdeer are known to nest in the project vicinity. Since killdeer are ground nesting birds it may be difficult to avoid active nests should they occur in the project work area. Mitigation measure BIO-2 would ensure that migratory birds are not adversely affected by the project.

Wetlands

Though the wetlands provide habitat for a variety of wildlife, they are not functioning either hydrologically or biologically as a natural floodplain seasonal wetland. The permanent wetland features are supporting non-native species such as large-mouth bass and bluegill, bullfrogs (*Rana catesbiana*), and invasive vegetation such as Giant reed (*Arundo donax*). A component of the proposed project is to restore the natural floodplain topography within a portion of the Yuba Goldfields through training of heavy equipment operators. These temporary impacts to wetland habitats are expected to be offset by the more permanent beneficial impacts from floodplain restoration.

Wetlands within Lease Areas 1 and 2 were assessed and mapped by Jeff Glazner of Northfork Associates and Patrick Kobernus of Thomas Reid Associates on March 11, 2005 (see Attachment A).

Lease Area 1 has several seasonal wetland features with a combined acreage of 0.231 acres (Attachment A: Figure 1). Most of the seasonal wetland area would be avoided by the proposed project. The proposed project (including roads, parking areas, classrooms and all associated facilities) would avoid seasonal wetland areas #2, 3, 6, and 9. Seasonal wetland areas 1, 4, 5, 7, and 8 could be impacted by the project, unless the building envelope is adjusted. As described by Mr. Glazner in the attached assessment, seasonal wetland areas 1 and 5 are very small and of limited value, and seasonal wetland area 2 is the largest wetland area. Mitigation BIO-3 will minimize impacts to wetlands.

Lease Area 2 has one small (0.005 acre) pond on the southern boundary of the 8-acre parcel. This parcel is not proposed for development as part of this project (Attachment A: Figure 6).

Mitigation Measures:

Impact BIO-1: There is potential for the project to spread noxious weeds to areas of the site that do not currently contain these weeds.

Mitigation Measure BIO-1: Heavy equipment used to remove vegetation that includes noxious weeds should be washed to remove seeds and plant parts prior to working in an area that is free of the noxious weeds.

Impact BIO-2: There is a possibility that special status animals and migratory birds could be disturbed by earth moving activities conducted at the Training Center including the disruption of nesting and rearing of migratory birds.

Mitigation Measure BIO-2: Training Center staff should consult with a biologist knowledgeable with the potential sensitive wildlife that could inhabit the project area, such as pond turtles, CRLF, loggerhead shrike, raptors, and other migratory birds. The expert should teach Training Center staff how to identify the sensitive wildlife so they can provide ongoing monitoring of the work of the students and can teach the students how to identify and avoid harming the sensitive wildlife. For the nesting raptors, a qualified biologist or other trained individual shall conduct surveys of trees that have potential to support raptor nests during the early part of the breeding season (January through April). If any raptor nesting activity is discovered, the biologist/trained individual should contact the Department of Fish and Game and the Bureau of Land Management to determine the extent of a construction-free buffer zone (typically 250 feet) to be established around the nest. No disturbance that could cause nest abandonment would occur within that buffer zone until the biologist has determined that all breeding activity has concluded for the season and young (if any) have fledged.

For other nesting migratory birds, such as the killdeer, periodic inspections of the work area should be conducted during the nesting season by trained staff to determine if any active nests are present. Any active nests found should be protected from disturbance.

Impact BIO-3: Seasonal wetlands within Lease Area 1 could be impacted by project construction.

Mitigation Measure BIO-3: Seasonal wetlands within Lease Area 1 shall be monitored during the construction phase of the project by a contract biological monitor to ensure that all seasonal wetlands avoided by the project will be protected from inadvertent disturbance.

Residual Impacts: With implementation of mitigation measures as prescribed above there would be no residual impacts.

5.2.2 No Project Alternative.

No construction would occur under the no action alternative, so there would be no impacts from the construction of facilities on the non-native grassland or seasonal wetland habitats, and there would be no beneficial impact of riparian floodplain restoration within the Goldfields from the project.

5.3 Water Quality

5.3.1 Proposed Project Alternative

Impact HYD-1: Construction-related erosion problems could result from alterations in local drainage patterns and grading activities. Construction-related erosion could increase sedimentation in receiving waters and cause a loss of topsoil. Eroded soil can also accumulate in drainage ditches and culverts and reduce capacity.

Mitigation HYD-1: Prior to work, a Stormwater Pollution Prevention Plan (SWPPP) would be developed that would include an Erosion Control Plan. At a minimum, the plan should include:

- A proposed schedule of grading activities
- Identification of any critical areas of high erodibility potential and/or unstable slopes
- Contour and spot elevations indicating runoff patterns before and after grading
- Identification of erosion control measures
- Soil stabilization techniques such as short-term biodegradable erosion control blankets and hydroseeding
- Post excavation inspection and cleaning of drainage facilities for accumulated sediment

Impact HYD-2: Runoff from the unpaved parking surfaces could introduce oil and grease, heavy metals, or other potential pollutants associated with vehicles into the drainage ditches which discharge to windrow ponds and canals.

Mitigation HYD-2: Unpaved parking areas and roads would be graded such that runoff would drain to one or more vegetated swales prior to release to windrow ponds and canals. Vegetated swales treat runoff through filtering by the vegetation and through chemical or biological mechanisms mediated by the vegetation and the soil. Design guidelines for vegetated swales are available in the California Stormwater BMP Handbook – New Development and Redevelopment (CASQA, 2003).

Impact HYD-3: Potential contaminants could be small spills of fuels or lubricants associated with routine maintenance or washing of on-site equipment.

Mitigation HYD-3a: The proposed shop and wash buildings are located in Lease Area 1. They will be set on concrete slabs that are graded to avoid runoff from surrounding areas and will drain to an on-site holding tank where water will be treated and recycled.

Mitigation HYD-3b: The development and implementation of a Spill Prevention Control and Countermeasures Plan would minimize the spill of any contaminants.

Impact HYD-4: If present, mercury could be re-suspended if bottom sediments in windrow ponds and canals are disturbed.

Mitigation HYD-4a: Avoid excavation of aggregates from a depth below the water table.

Mitigation HYD-4b: Avoid disturbance of bottom sediments where water is pumped from the windrow canal.

Residual Impacts: With implementation of mitigation measures as prescribed above there would be no residual impacts.

5.3.2 No Project Alternative.

There would be no impacts to water quality associated with the no action alternative and thus no mitigation required.

5.4 Air Quality

5.4.1 Standards of Significance

A project would normally be considered to have a significant affect on air quality if the project would conflict with or obstruct implementation of the applicable air quality plan violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation, result in a 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), or expose sensitive receptors to substantial pollutant concentrations.

5.4.2 Sensitive Receptors

Sensitive receptors are locations where population groups known to be particularly sensitive to air pollutant health effects (children, the elderly, the acutely and/or chronically ill) are likely to spend time. Land uses such as schools, children's day care centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also

considered sensitive, due to the greater exposure to ambient air quality conditions, and because the presence of pollution detracts from the recreational experience.

The Hammond Road lease site is in a remote sparsely inhabited area. There is a residence 1000 feet east of the site, but the other nearest residences are more than a mile west on Hammonton Road or more than a mile north on the opposite bank of the Yuba River, scattered along Highway 20. The nearest school is Browns Valley School approximately 8,200 feet north northwest of the site.

FRAQMD has developed numerical significance thresholds for Yuba and Sutter Counties. The thresholds are recommended for use in assessing impacts associated with construction, project operations, odors, toxic air contaminants, accidental releases, cumulative impacts, and regional planning projects/programs associated with project implementation. The significance thresholds are designed to identify potentially significant impacts and form the basis for a determination which would trigger emissions analysis, as well as the development and implementation of feasible mitigation measures.

5.4.3 Proposed Project Alternative

Air pollutant emissions from the lease project are associated with construction and operation of the training center.

Construction

The facilities are pre-manufactured structures placed on a graded and graveled surface. Grading and paving entail the same activities as will be involved in actual operation. Emissions from construction of the classroom, maintenance building and 9,500 square feet of paved and unpaved parking area are estimated to be approximately 10% of the emissions during the operational phase of the project. Project impact was determined to be less than significant and the temporary construction phase emissions are therefore also less than significant.

Operations Off-site

The majority of activity is on-site. Unlike a conventional quarry or sand and gravel operation, no material will be excavated for use off-site. The training center will accommodate staff and class of about 20 persons. They will generally make a single trip to the Center daily, so off-site vehicular traffic will be less than 100 ADT and associated air pollutant emissions are negligible.

Operations On-site

Training in the use and repair of heavy equipment would release diesel exhaust emissions and fugitive dust emissions from material handling and travel over unpaved areas. Equipment exhaust and fugitive dust emissions are evaluated separately.

Diesel Exhaust

A list of typical equipment was provided by the applicant, and is shown in Table 3. Training rotates through the list and actual use of specific equipment would vary depending on the

instructional focus. Because of class size, site layout and safety considerations, a limit of 10 pieces of equipment would operate at one time. For the purposes of estimating air pollutant emissions, it is assumed that a maximum hour represents ten of the larger pieces of equipment operating with an average power level of 30%. The maximum day would be 8 hours of operation at the maximum hour level. Annual emissions are assumed to be 250 days (2000 hours) of full activity, with each piece of equipment averaging 1000 hours of use.

Table 3. Representative Equipment

Equipment	Number	Horse Power	Peak Day Use	Annual Hours
Paver	1	174		1000
Asphalt Roller	1	80		1000
Dozer	1	305	1	1000
Dozer	1	230	1	1000
Loader	1	220		1000
Excavator	1	173		1000
Waterpull	1	330	1	1000
Motorgrader	1	350	1	1000
Motorgrader	1	180	1	1000
Selfloading Scraper	1	265	1	1000
Vibratory Roller w/blade	1	107		1000
Compactor	1	240	1	1000
Skip Loader	1	84		1000
Skid Steer Loader	1	76		1000
Telehandler	1	100		1000
Backhoe	2	88		1000
Jaw Crusher	1	500	1	1000
Generator (for crusher)	1	400	1	1000
Dump Truck	1	400	1	1000
Service Truck	1	300		1000

Source: Operating Engineers, TRA

Peak Day Use indicates the equipment is used to project maximum day emissions.

Emission rates are based on current standards for off-road standards for heavy duty equipment, such as dozers, graders, etc., and are based on a standard Emission Factor (grams/hp-hr) multiplied by a the maximum equipment horsepower rating (hp) multiplied by a 30% capacity factor. Table 4 presents short-term and long-term emission rates for PM-10, CO, NOx and SO₂.

Table 4. Diesel Equipment Exhaust emissions

August 2006

Pollutant	Hourly Emissions (lbs/hr)	Daily Emissions (lbs/day)	Annual Emissions (tons/year)
Particulate (PM-10)	0.48	3.81	0.34
Carbon Monoxide (CO)	7.40	59.21	5.90
Oxides of Nitrogen (NOx)	9.33	74.64	7.08
Sulfur Dioxide (SO ₂)	0.35	2.78	0.25

Source: Ray Kapahi, TRA

Fugitive Dust Emissions

Fugitive dust refers to dust generated from open sources that is not released through a stack or vent. Examples of sources of fugitive dust include movement of vehicles on unpaved roads, rock crushing and operation of graders, dozers, etc. Standard emissions controls, mainly watering, are assumed. The Operating Engineers training includes use of water trucks and the best management practices for construction sites. The overall potential for fugitive dust is low for this site due to the nature of the gravel and the relatively low level of very fine material. Table 5 shows representative contributions from fugitive dust sources.

Table 5. Fugitive Dust as PM10

	Emission		Ref.	----Emissions Rates----	
	Factor	Units		Max. Daily (lb/day)	Annual (ton/yr)
Rock Crushing (Primary)	0.0006	(lb/ton)	1	0.89	0.11
Bulldozing (Rock Excavation)	0.0120	lb/ton	1	17.97	2.25
Truck Loading (crushed stone)	0.0000	lb/ton	1	0.02	0.00
Scraper Travel	1.56E-01	(lb/VMT)	2	10.01	1.25
Dust from Vehicle Travel	0.20	(lb/VMT)	3	12.9	1.61
Wind Erosion (Storage Piles)			6	3.08	0.38
Grading	0.19	lbs/VMT	4	12.24	1.53
		Totals		41.8	5.22

Source: Ray Kapahi

Air Pollutant Dispersion

The open, broad valley of the Yuba River at the site does not appreciably change the regional wind pattern: daytime winds are generally from the south through southwest and are stronger in

the summer. Nighttime and winter sees the weaker opposite flow. The training center will use a large part of the 36 acre Lease Area 3 for heavy equipment operation. None of this is fixed, and even the proposed portable rock crusher may be moved as needed. The effect of the heavy equipment use is modeled as an area source in an “L” shape covering most of Lease Area 3 and a portion of Lease Area 1. The area source represents mobile equipment moving continually within an activity area.

The potential air pollutant dispersion was modeled using the approved EPA ISC model. The model has project emissions occurring only during daylight hours for 2002 hours per year, matching project activity. The model is calculated for a unit emissions rate (1 gram/second) and the resulting normalized concentrations can be converted to projected air pollutant impact by multiplying by the estimated pollutant emissions. The results and comparison with relevant air quality standards are shown in Table 6.

Table 6. Air Pollutant Concentrations and Project Impact

Pollutant	Emissions			Averaging	Results from	Project	Air Quality
				Time	ISCST	Impact	Standard
			(g/sec)		(ug/cu meter)	(ug/cu meter)	(ug/cu meter)
PM-10	45.6	(lbs/day)	0.719	24-hr	33	23.7	50
	5.56	(tons/yr)	0.701	Annual	8.2	5.73	20
Diesel PM	0.34	(tons/yr)	0.042	Annual	8.2	0.35	see risk assess
NOx	9.3	(lbs/hr)	1.18	1-Hr	350	412	na
	7.1	(tons/yr)	0.89	Annual	8.2	7	na
as NO2				1-Hr		210	470
				Annual		7.3	100
CO	7.40	(lbs/hr)	0.93	1-Hr	350	327	23,000
	7.40	(lbs/hr)	0.93	8-hr	83	77	10,000
SOx	0.35	(lbs/hr)	0.044	1-Hr	350	15	655
	0.35	(lbs/hr)	0.044	3-Hr	271	11.9	1,300
	2.78	(lbs/day)	0.044	24-Hr	33	1.4	105
	0.25	(tons/yr)	0.032	Annual	8.2	0	80

Source: Ray Kapahi, TRA

All pollutants are expected to be well below applicable state or federal standards. There is no direct standard for NOx, and the portion of NOx present as NO2 in exhaust is taken as 10% of NOx emissions plus immediate conversion of NO to NO2 equivalent to average background ozone (0.09 ppm).

Diesel Particulate Matter Cancer Risk

The ISCST model calculated unit emissions concentrations at four residential type receptors and at the Browns Valley School. The Diesel Particulate Matter (DPM) emissions from Table 4 are

August 2006

modified by a 40% factor over the projected 40 year project lifetime to reflect a gradual reduction in overall fleet DPM emissions as older equipment is replaced by newer equipment meeting current standards. Part of the Operating Engineers Training function is equipment maintenance and it is reasonable to assume that equipment will meet applicable emissions standards for off-highway vehicles.

Cancer risk is expressed as the incidence of cases of cancer (not deaths) expected in the population from exposure to the single source. Overall cancer incidence is roughly 25% in most populations, meaning that 1 person in 4 is expected to develop a case of cancer. Normally a specific contribution to cancer risk is considered less than significant if it adds less than 1 in one million risk (E-06). All estimated levels of project DPM will produce less than that standard of risk (See Table 7).

Table 7. Diesel Particulate Matter Cancer Risk

Receptor	Type	Coordinates		Distance	Annual	DPM	Applied
		X (m)	Y(m)	(feet)	Unit Conc.	Conc.	Risk (cases per million exposed)
R21	Residence on Hammonton Rd. East of project	762	136	2,540	0.28577	0.0121	0.83
R22	Structure cluster at Hammonton Townsite, Southwest	-1,412	-2,055	8,180	0.06198	0.0026	0.18
R23	Residence on north bank of Yuba River	432	1,791	6,045	0.08281	0.0035	0.24
R24	Residence on north bank of Yuba River	-932	1,911	6,976	0.12709	0.0054	0.37
S21	Browns Valley School	-325	2,727	9,010	0.08386	0.0036	0.24

Source: Ray Kapahi, TRA

Air Quality Management District Regulations

Current AQMD permit requirements (Rule 4.3) exempt all self-propelled construction equipment from permit requirements. Therefore, equipment used at the training center would not be subject to AQMD permit requirements.

The proposed portable rock crusher would be subject to AQMD permit requirements as a stationary source. However, the portable rock crusher could also be permitted under the State's Portable Equipment Program, thereby eliminating the need for any permits from the AQMD.

Mitigation Measures: Impacts to air quality from equipment exhaust fumes during proposed Training Center operations would be negligible. Standard fugitive dust emissions controls, mainly watering, will be implemented. The Operating Engineers training includes use of water trucks and the best management practices for construction sites.

Residual Impacts: With implementation of mitigation measures as prescribed above there would be no residual impacts.

5.4.4 No Project Alternative.

There would be no impacts to air quality associated with the no action alternative and thus no mitigation required.

5.5 Noise

5.5.1 Proposed Project Alternative

The heavy equipment training operation will have from six to twelve pieces of equipment working at the same time and spread over a 25 acre area roughly 500 feet wide by 1500 feet long. For a listener within the first 1000 feet from the work area, the dispersed noise sources will act as a line source, similar to a busy roadway. At greater distances, the work area will act more as a point source, with an effective typical sound level of 65 dBA at a reference distance of 200 feet from the near edge. From a distance of 500 feet or more, the crusher will act as a point source with an effective typical sound level of 69 dBA at a reference distance of 200 feet.

Theoretically, a line source attenuates 3 dB with the doubling of distance from the reference to the receptor location; a point source attenuates 6 dB with doubling of distance. In practice, the soft ground and intervening, sparse oak woodland will increase attenuation with distance by reducing ground reflection and some direct absorption. Based on field measurements in similar settings, actual attenuation is usually 1.5 times greater than theoretical attenuation with distance.

The nearest residential receptor is located east of the site, 1600 feet from the proposed portable gravel crusher and from 1400 to 2500 feet from the work area. The next nearest residence is $\frac{3}{4}$ mile north. The average sound level at the nearest residence for the crusher would be 51 dBA based on theoretical attenuation by distance and 42 dBA based on the reasonable attenuation effect of site conditions. For the work area, average sound levels would be 42 to 48 dBA based on theoretical attenuation by distance and in actuality, less than 42 dBA based on site conditions. These average sound levels are generally considered suitable for daytime in residential areas.

The back-up warning alarm (back-up beeper) and occasional high power operation from large equipment will be 3 to 5 dB above the typical levels and will be distinctly audible within $\frac{1}{4}$ mile under nearly all conditions, and for as far as 1 mile under calm conditions with low environmental background noise.

For a detailed noise analysis, refer to Attachment C.

Mitigating Measures:

In order to reduce noise impacts to residents of private lands east of the lease area, mitigating measures have been developed. Rock crushing operations would be restricted to lands in Lot 5 of Section 27 northwest of Hammonton Road in the southwest portion of the lease area. At its closest point this would place the crusher about 2,000 feet from the residence. Training Center operations would be allowed only on week days from 7:30 am to 4:00 pm.

Residual Impacts:

Noise produced by the project would be attenuated to levels generally considered acceptable for residential land use at nearby residential receptors. Because the Training Center would operate only on weekdays from 7:30 am to 4:00 pm, local residents would not be affected by the operating noise during evening, nighttime and weekend hours. Variable sound from equipment would rise enough above the background sound level that the project would be audible at a distance of up to one mile under very quiet conditions. The listener may be able to identify its source, primarily due to the characteristic sound of back-up alarms. However, because the levels would be below general standards for surrounding land use, residual noise impacts would not be significant.

5.5.2 No Project Alternative

There would be no noise impacts associated with the no action alternative and thus no mitigation required.

5.6 Socio-Economics**5.6.1 Proposed Project Alternative**

The proposed action would result in beneficial economic impacts to the local communities. The center will create new jobs for instructors, mechanics, and support staff. The Training Center has the potential to serve hundreds of equipment operators living in the local three-county area. Students and staff would patronize local merchants for groceries, meals, motel rooms, recreation, fuel and other supplies.

The proposed project is needed to meet local and regional demands for heavy equipment operator training and to help promote economic growth for the City of Marysville, Yuba County, and other nearby counties. Local operators will be able to maintain and upgrade their skills, which will allow them to increase and maintain their wage scales. Refer to EA sections 1.3 and 2.2.

5.6.2 No Project Alternative.

There would be no social or economic impacts resulting from the no action alternative.

6 CUMULATIVE IMPACTSPast Actions

In the past, operations that have impacted the Yuba Goldfields and the project area include hydraulic mining and bucket-line dredging.

Hydraulic mining methods use high-pressure streams of water to wash away ancient, gold-bearing river channel deposits hundreds of feet thick. The clay, silt, sand, gravel and cobbles were washed in sluice tunnels which drain the hydraulic pits and were dumped into drainages downstream. From 1860 to 1890 several hydraulic mines in the Yuba River watershed generated millions of cubic yards of tailings which choked the Yuba River and caused flooding of

farmlands down river. In 1884 the dumping of hydraulic mine tailings into drainages was prohibited. This made this method of mining uneconomic and all of the hydraulic mines shut down by the early 1900's.

Bucket-line dredging operations began in the Yuba Goldfields in 1904. These dredges are large floating placer gold processing plants that create their own ponds. Up to 150 feet below the water surface, gold-bearing riverbed sediments were scooped up by a ladder of buckets and dumped into the wash plant. Clay, silt and sand are washed into the dredger ponds and the gravel and cobbles are stacked along the edges of the ponds in tall windrows of tailings.

Much of the dredging in the Yuba River was regulated by the California Debris Commission. This federal agency was created in 1893 to manage hydraulic mine tailings. The dredges worked the virgin gravels overlain by hydraulic mine tailings and moved the course of the river northward leaving roughly 10,000 acres of dredger ponds and tailings which comprise the Yuba Goldfields. Dredging operations have ceased in 2002 and there are no operational dredges in the Goldfields at this time.

Mining and processing of material on public lands just north and east of the proposed lease area took place in the 1980's and 1990's leaving 350,000 tons of washed and classified sand and gravel in an area of about 30 acres in size. Over a million tons of sand and gravel were removed from these lands.

Present Actions

At the present time the dredger tailings in the Goldfields and construction aggregate within adjacent flood plains are being mined for sand and gravel by Western Aggregates, Silica Resources, Teichert, Baldwin, and Noble & Eleanor Plant. The mine plans involve six mines, 9,000 permitted acres and over 8 million tons produced annually.

Reasonably Foreseeable Future Actions

In the Goldfields the United States owns the sand and gravel resources on about 3,400 acres that contain about 100,000 tons per acre or a total of 340 million tons. Production of sand and gravel from these lands could be as much as two million tons per year starting in the next 5 to 10 years. The demand for construction aggregate is high and is expected to increase in the foreseeable future to meet the demands for housing and other developments in this region. The Yuba Goldfields is a significant source of this material. Mining operations on federal lands would be designed to reclaim the land for wildlife habitat and for recreational uses by the public.

The proposed Training Center would involve the mining, processing and use of about 5,000 cubic yards (7,500 tons) of gravel within 57 acres of land. The crushed gravel would be used to surface roads and parking areas in Lease Area 1 and on roads in Lease Area 3. Within the lease area, apprentice workers would be trained in the use of various types of heavy equipment. Subject to mitigating measures, this would result in disturbance to lands which have already been disturbed by past mining operations. Some projects would include training in the reclamation of disturbed lands resulting in beneficial environmental impacts.

Cumulative Impacts from the Proposed Action

No significant cumulative impacts would occur as a result of the operation of the proposed Training Center. This is due to the very small scale of the incremental impacts that would be generated by the 57 acre Training Center in the context of permitted sand and gravel operations on 9,000 acres of nearby private land and, potentially, 3,400 acres of public lands within the Goldfields. The anticipated increase in diesel exhaust, fugitive dust and noise emissions resulting from proposed Training Center operations would result in only a minor addition to the emissions generated by existing and reasonably foreseeable sand and gravel operations in the Goldfields. Similarly, incremental impacts to cultural, biological and water resources in the 57-acre lease area would be minimal when viewed against the background of existing and reasonably foreseeable impacts from other activities.

The lease area would not be available for public recreational activities including vehicle travel, hiking, biking, fishing, wildlife viewing, and OHV use. This is not significant considering there are over 400 acres of public lands north and east of the lease area where these activities are more likely to occur.

As compared with past, present and anticipated future actions in the Yuba Goldfields, the net cumulative environmental effects from Training Center activities on key resources (cultural, biological, water and air) in the proposed lease area would be insignificant. Refer to Chapter 5 for more information on environmental impacts to these resources.

7 CONSULTATION AND COORDINATION

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