

B I O L O G I C A L A S S E S S M E N T

**21080 LOCONOMI ROAD [APN 014-140-12]
LAKE COUNTY, CALIFORNIA**

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PROJECT № LAK052



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1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this reconnaissance-level Biological Assessment (BA) is to evaluate the existence of special-status species (SSS) and/or habitats, as well as assess the potential for SSS listed in Appendix A to occur on or near the site of commercial cultivation activities, pursuant to applicable regulations from County of Lake and the State of California. This BA also analyzes the potential for jurisdictional wetlands and other waters of the State to exist onsite, and classifies landforms that may potentially convey sediment to waters of the State including dry creeks, washes, swales, gullies, and other erosional features. Also included is a set of Best Management Practices (BMPs) that are adapted from a variety of sources including State Water Resources Control Board (SWRCB) *Cannabis* General Order No. WQ 2019-0001-DWQ and other state and local ordinances.

1.2 LOCATION

1.2.1 Site Overview

The project site is located in unincorporated Lake County, 2.4 miles east of Middletown, and 27 miles southeast of Lakeport (Figure 1). The property is comprised of a single parcel designated Assessor's Parcel Number (APN) 014-140-12, is deeded 20.0 acres, and is zoned Rural Residential (RR). The parcel is located in an unsectioned portion of Township 11 North, Range 6 West, on the USGS Middletown 7.5-minute quadrangle (Figure 2). The approximate latitude and longitude of the centroid of the parcel is 38.7515 (N), -122.5730 (W). The parcel is under the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB), and the Northern Region (District 1) of the California Department of Fish & Wildlife (CDFW), and are not located in medium- or high-priority groundwater basins as designated by the California Department of Water Resources (DWR).

1.2.2 Federal Critical Habitat

Federal Critical Habitat (FCH) is designated by the U.S. Fish & Wildlife Service (USFWS) and provides special protections for habitats considered important for long-term population persistence of endangered or threatened species. There is no FCH onsite for any animal or plant species (Appendix E). The nearest Federal Critical Habitat is located 3.9 miles south of the parcel for Northern spotted owl (*Strix occidentalis*; NSO). The next nearest Federal Critical Habitat is located 6.2 miles north of the parcel for Slender Orcutt Grass (*Orcuttia tenuis*). There is no other Federal Critical Habitat within 10 miles of the project parcel.

1.2.3 Special-Status Species Occurrences

Special-status species (SSS) are those species that receive special protections under either local, State, or Federal law and include both State and Federally Endangered and Threatened species of animals and

plants, as well as candidate listing species and other species or populations of special concern for which additional information is required. The California Natural Diversity Database (CNDDDB) provides information on most known SSS occurrences in the State of California. A description of the habitat requirements and likelihood of occurrence of potential SSS on the project parcel based the CNDDDB database, published scientific literature, and the expertise of PEC staff, is provided in Appendix A, with a description of the nearest locality of all SSS known from within a 5 mile radius around the project parcel. Additionally, map-based representation of all of the SSS within an approximately 5 mile radius around the project site is provided in Appendix C.

1.2.3.1 SSS Animals

There are a total of 14 special-status animal species within 5 miles of the project parcel (Appendices A & C). There are two special-status animal species whose CNDDDB polygons overlap with project parcel, Hoary bat (*Lasiurus cinereus*) and Silver-haired bat (*Lasionycteris noctivagans*). The centroids of these polygons are located offsite, 0.3 miles southwest of the parcel near Long Valley. The next nearest known occurrences of special-status animal species are the indistinct localities of American peregrine falcon (*Falco peregrinus anatum*) and Prairie falcon (*Falco mexicanus*) observed somewhere in the USGS Detert Reservoir 7.5 minute quad (Appendix C), that come as close as 0.1 miles south of the project parcel. The next nearest known occurrence of special-status animal species is Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*) located approximately 0.4 miles southwest of the project parcel near Long Valley. The next nearest known occurrence of special-status animal species is Tricolored blackbird (*Agelaius tricolor*) located approximately 1.1 miles southeast of the project parcel near Long Valley. The next nearest known occurrence of special-status animal species is Purple martin (*Progne subis*) located approximately 2.4 miles southeast of the project parcel near Detert Reservoir. The next nearest known occurrence of special-status animal species is Townsend's big-eared bat (*Corynorhinus townsendii*) located approximately 3.0 miles southwest of the project parcel near Wilkinson Creek. The next nearest known occurrence of special-status animal species is Western pond turtle (*Emys marmorata*) located approximately 3.0 miles southwest of the project parcel near Saint Helena Creek. The next nearest known occurrence of special-status animal species is Bald eagle (*Haliaeetus leucocephalus*) located approximately 3.3 miles east of the project parcel near McCreary Lake. The next nearest known occurrence of special-status animal species is Foothill yellow-legged frog (*Rana boylei*; FYLF) located approximately 3.3 miles southwest of the project parcel near Hoodoo Creek. The next nearest known occurrence of special-status animal species is Pallid bat (*Antrozous pallidus*) located approximately 3.9 miles southwest of the project parcel near Grizzly Creek. The next nearest known occurrence of special-status animal species is Serpentine cypress wood-boring beetle (*Trachykele hartmani*) located approximately 4.7 miles south of the project parcel near Grizzly Creek. The next nearest known occurrence of special-status animal species is Northern spotted owl (*Strix occidentalis*; NSO) located approximately 4.8 miles southwest of the project parcel near Hoodoo Creek. There are no other known occurrences of special-status animal species within 5 miles of the project parcel.

1.2.3.2 SSS Plants

There are a total of 27 special-status plant species within 5 miles of the project parcel (Appendices A & C). There are two special-status plant species whose CNDDDB polygons overlap with project parcel, Jepson's milk vetch (*Astragalus rattanii* var. *jepsonianus*), and Mt. St. Helena morning glory (*Calystegia collina* spp. *oxyphylla*). The centroid of Jepson's milk vetch is located onsite in the north-central portion of the site and was observed in 2003 just prior to construction of the new residence, and is presumed to have been found as part of permitting of the single family residence onsite. The centroid of Mt. St. Helena morning glory is located offsite, 0.9 miles northeast of the project parcel near Long Valley. The next

nearest known occurrence of special-status plant species is Two-carpellate Western flax (*Hesperolinon bicarpellatum*) located approximately 0.3 miles northeast of the project parcel near Long Valley. The next nearest known occurrence of special-status plant species is Small pincushion navarretia (*Navarretia myersii* spp. *deminuta*) located approximately 0.6 miles south of the project parcel near Long Valley. The next nearest known occurrence of special-status plant species is Saline clover (*Trifolium hydrophilum*) located approximately 0.8 miles west of the project parcel near Long Valley.

The next nearest known occurrences of special-status plant species are Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*) and Green jewelflower (*Streptanthus hesperidis*) located approximately 1.3 miles northwest of the project parcel near Crazy Creek. The next nearest known occurrence of special-status plant species is Hall's harmonia (*Harmonia hallii*) located approximately 1.3 miles north of the project parcel near Crazy Creek. The next nearest known occurrence of special-status plant species is Bent-flowered fiddleneck (*Amsinckia lunaris*) located approximately 1.4 miles northwest of the project parcel near Crazy Creek. The next nearest known occurrence of special-status plant species is Jepson's leptosiphon (*Leptosiphon jepsonii*) located approximately 1.5 miles southeast of the project parcel near Detert Reservoir. The next nearest known occurrences of special-status plant species are Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*) and Porter's navarretia (*Navarretia paradoxinota*) located approximately 1.8 miles north of the project parcel near Coyote Valley. The next nearest known occurrence of special-status plant species is Lake County Western flax (*Hesperolinon didymocarpum*) located approximately 1.8 miles northwest of the project parcel near Crazy Creek. The next nearest known occurrence of special-status plant species is Serpentine cryptantha (*Cryptantha dissita*) located approximately 1.9 miles southwest of the project parcel near Dead Horse Flat. The next nearest known occurrence of special-status plant species is Green's narrow-leaved daisy (*Erigeron greenei*) located approximately 2.4 miles west of the project parcel near Collayomi Valley. The next nearest known occurrence of special-status plant species is Burke's goldfields (*Lasthenia burkei*) located approximately 3.2 miles north of the project parcel near Coyote Creek.

The next nearest known occurrence of special-status plant species is Konocti manzanita (*Arctostaphylos manzanita* ssp. *elegans*) located approximately 3.2 miles southwest of the project parcel near Wilkinson Creek. The next nearest known occurrence of special-status plant species is Pink creamsacs (*Castilleja rubicundula* var. *rubicundula*) located approximately 3.2 miles northwest of the project parcel near Harbin Mountain. The next nearest known occurrence of special-status plant species is Three peaks jewelflower (*Streptanthus morrisonii* ssp. *elatus*) located approximately 3.8 miles south of the project parcel near Hoffman Creek. The next nearest known occurrence of special-status plant species is Early jewelflower (*Streptanthus vernalis*) located approximately 4.2 miles south of the project parcel near Table Mountain. The next nearest known occurrence of special-status plant species is Napa bluecurls (*Trichostema ruygtii*) located approximately 4.7 miles south of the project parcel near Table Mountain. The next nearest known occurrence of special-status plant species is Northern meadow sedge (*Carex praticola*) located approximately 4.7 miles northwest of the project parcel near Harbin Creek. The next nearest known occurrence of special-status plant species is Snow Mountain buckwheat (*Eriogonum nervulosum*) located approximately 4.7 miles southwest of the project parcel near Kroll Creek. The next nearest known occurrence of special-status plant species is Napa false indigo (*Amorpha californica* var. *napensis*) located approximately 4.8 miles southeast of the project parcel near Butts Creek. The next nearest known occurrence of special-status plant species is Rincon Ridge ceanothus (*Ceanothus confusus*) located approximately 4.8 miles south of the project parcel near Table Mountain. The next nearest known occurrence of special-status plant species is Cobb Mountain lupine (*Lupinus sericatus*) located approximately 4.9 miles south of the project parcel near Table Mountain. The next nearest known occurrence of special-status plant species is Sonoma ceanothus (*Ceanothus sonomensis*) located approximately 5.0 miles southeast of the project parcel near Oat Hill. There are no other known occurrences of special-status plant species within 5 miles of the project parcel.

1.2.4 Landforms & Topography

The maximum elevation of the parcel is 1,108 feet above sea level at the northern corner of the parcel line, and the minimum elevation is 1,102 feet above sea level at the western corner of the parcel (Figure 2). The topography of the parcel is flat, with grades between 2% and 5%, as measured by Suunto PM5 handheld clinometer (Figure 2).

Water enters the site in the northwest corner from the adjacent parcel to the north, and flows into a series of wetlands (Figures 15-16) and small temporary pools (Figure 14) that meander southwest along the western half of the parcel. The channel becomes indistinct at times and contains several oxbow like formations. Water coalesces into a single Class II channel near the culvert crossing (Figure 12) before turning into a vegetated swale with wetland vegetation that runs along the western fenceline and passes offsite as a roadside ditch along Loconomi Road.

There is a secondary drainage in the eastern half of the parcel, that examination of aerial photographs over ~20 years shows has been modified in the past by trenching. Within the last 5 years, the area has been disked however and there is no remnants of these trenches anymore. A wet area is visible to the southeast of the main residence in aerial photographs, but the area now does not meet qualifications for wetland cover, although cracking was evident in the soil. Similarly, there is a historic trench leading onsite from the northeast also visible in aerial photos (e.g. the one used in Figure 3) although it no longer exists (see Figure 11) also likely due to disking. In our opinion the disking returned the hydrology of the site to a more natural condition than existed with the trenches and so no remediation or further action should be necessary. More information on the jurisdictional status of watercourse and the pond are provided in Section §2.4, below.

Water flowing offsite to the southwest alternates as a meandering swale with wetland vegetation, and a channelized Class II watercourse, for 2.5 miles until the confluence with Putah Creek, that flows southeast for approximately 32 miles before emptying into Lake Berryessa. From the outlet of Lake Berryessa at Monticello Dam, Putah Creek continues east for 27 miles flowing into the Central Valley and past the City of Davis before emptying into a series of low-lying basins known as the Putah Creek Sinks. From there water flows into the Yolo Bypass and south into the Sacramento River which flows south for approximately 40 miles before emptying into Suisun Bay and the Pacific Ocean.

1.3 METHODS

1.3.1 Records Search & Literature Review

Based on a review of the literature and relevant databases, we compiled a list of special-status plant and animal species that are known to occur within Lake County, or that occupy habitats that are known to be present on or near the project site (Appendices A & C). Sources of information referenced include the California Department of Fish & Wildlife (CDFW) *California Natural Diversity Database* (CNDDDB 2020), U.S. Fish and Wildlife Service Environmental Conservation Online System (USFWS 2020), the California Native Plants Society (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2020), the CDFW *Habitat Relationships System* (HRS), and the knowledge of PEC staff familiar with the species and habitats of Lake County. Additional information on sensitive habitats including wetlands was obtained from the USFWS National Wetlands Inventory (NWI 2020), and the County of Lake *Geographic Information System Portal* (Lake Co. 2020). Plant species included here are

State or Federally Endangered or Threatened species, and/or considered rare by CDFW, and/or are recognized as special-status species (SSS) by CNPS and/or CDFW. Animal species included here are designated as State or Federally Endangered or Threatened, and/or CDFW species of special concern (SSC), and/or CDFW fully protected species (FPS). In addition, nests of most native bird species, regardless of their regulatory status, are protected from take or harassment under the U.S. Migratory Bird Treaty Act (MBTA) and relevant sections of the California Fish & Wildlife Code.

1.3.2 Field Surveys

A wildlife and botanical survey was conducted at the site on September 22, 2020. The weather was sunny and clear at the time of the survey, that began at Noon. The temperature at the start of the survey was 78 degF, relative humidity was 30%, and wind gust speed was 2-4 mph, as measured with Kestrel 3000 handheld weather station. No rain fell the preceding month, and most annual and perennial species were past flowering, although most species still had flowering parts intact and these were used for identification of annual plants. Many perennial species were still flowering. Starting at the reservoir, the entire project site was surveyed on foot by PEC Senior Biologist Dr. Christopher T. DiVittorio, recording the location and identity of all plant and animal species encountered. Plant voucher specimens were taken of any species that were not identifiable in the field, and that were not likely to be special-status. The vast majority of species were identifiable at the time of the survey, although some had to be identified based on vegetative parts. Photographs and voucher specimens were taken of any plants that were identified solely based on vegetative characters.

2.0 RESULTS

2.1 REGIONAL ECOLOGICAL SETTING

Using field surveys, a review of published literature, and the knowledge of PEC staff, all of the natural communities present on and around the project site were assessed. Regionally, the dominant vegetation types are chamise chaparral, black oak and gray pine woodland, with irrigated vineyards in the mosaic of areas without shrubs and trees. Valley bottoms support some wetland vegetation and ephemeral watercourses, and the coast of Clear Lake contains extensive marshlands. The region has not burned extensively in any of the large fires in the last 5 years.

2.2 NATURAL COMMUNITIES WITHIN THE PROJECT SITE

The onsite communities are primarily black oak woodland in the northern flatter portion of the site (Figure 9), and gray pine woodland and chamise chaparral on steeper slopes (Figure 10). The eastern portion of the site was cleared once in the 1990's to plant the vineyard, and again in the 2000's as described above to create the currently cleared areas including the proposed cultivation area (Figure 7). There are no special soil types such as serpentine or hardpan visible at the time of the survey and no rock outcrops in the vicinity of the proposed cultivation area. The specific community descriptions below are organized based on the zones that were surveyed, and the floristic results presented in Appendix B. We have used as guidance the *Manual of California Vegetation* (Sawyer et al. 2009) to guide community classification. Overall, the parcel consists of approximately 80% annual grassland, 10% wetland and watercourse, and 10% developed area.

2.2.1 Annual Grassland

Most of the parcel is formerly grazed annual grassland, with characteristics of wetland plants, and also serpentine grassland plants, since the soils onsite are partially serpentine-derived. Due to the serpentine content of the soil, plant biomass is generally low and there is an abundance of bare space compared to other grasslands (e.g. Figure 13). Species in the undisturbed grassland (non-wetland) portions of the site include Zorro fescue (*Festuca myuros*), medusahead (*Elymus caput-medusae*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), cheatgrass (*Bromus tectorum*), wild oatgrass (*Avena barbata*), dogstail grass (*Cynosurus echinatus*), hairgrass (*Aira caryophyllea*), turkey-mullein (*Croton setiger*), crane's bill filaree (*Erodium botrys*), common yarrow (*Achillea millefolium*), Bolander's sunflower (*Helianthus bolanderi*), goatsbeard (*Tragopogon dubius*), narrow tarplant (*Holocarpha virgata*), hayfield tarweed (*Hemizonia congesta*), lowland cudweed (*Gnaphalium palustre*), crimson clover (*Trifolium incarnatum*), spring vetch (*Vicia sativa*), bird's foot trefoil (*Acmispon americanus*), California poppy (*Eschscholzia californica*), field buttercup (*Ranunculus arvensis*), field parsley (*Torilis nodosa*), sheep sorrel (*Rumex acetocella*), and soap plant (*Chlorogalum pomeridianum*). Ruderal and other weedy species near the residence and other developed and disturbed portions of the site are characteristic of disturbed habitats and largely non-native. Species in these areas include bluegum (*Eucalyptus* spp.), bristly ox-tongue (*Helminthotheca echioides*), yellow star thistle (*Centaurea solstitialis*), smooth cat's ear (*Hypochaeris glabra*), spiny sowthistle (*Sonchus asper*), Italian thistle

(*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), chicory (*Cichorium intybus*), lamb's quarters (*Chenopodium album*), black mustard (*Brassica nigra*), wild radish (*Raphanus sativa*), common geranium (*Geranium molle*), rose clover (*Trifolium hirtum*) and bur clover (*Medicago polymorpha*).

2.2.2 Seasonal Wetland & Watercourse

Species associated with the seasonal watercourse and wetlands include common spikerush (*Eleocharis macrostachya*), common bog rush (*Juncus effusus*), pointed rush (*Juncus oxymeris*), rabbitsfoot grass (*Polypogon monspeliensis*), squirreltail grass (*Elymus elymoides*), Jepson's button celery (*Eryngium aristulatum*), Fuller's teasel (*Dipsacus fullonum*), English plantain (*Plantago lanceolata*), contorted sun cup (*Camissonia contorta*), common gumweed (*Grindelia camporum*), Western field dodder (*Cuscuta pentagona*), curly dock (*Rumex crispus*), Italian ryegrass (*Festuca perennis*), white-headed navarretia (*Navarretia leucocephala*), purple sand spurry (*Spergula rubra*), and green algae (*Cladophora* spp.).

2.3 WILDLIFE

There are few trees and no topographic relief onsite thus wildlife species were few. Animal species observed during the course of the day include turkey vulture (*Cathartes aura*), savannah sparrow (*Passerculus sandwichensis*), common crow (*Corvus brachyrhynchos*), acorn woodpecker (*Melanerpes formicivorus*), Western fence lizard (*Sceloporus occidentalis*), mourning dove (*Zenaida macroura*), Brewer's blackbird (*Euphagus cyanocephalus*), black-tailed jackrabbit (*Lepus californicus*), and excavation mounds of California ground squirrel (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*).

2.4 WATERCOURSES & POTENTIAL WETLANDS

Jurisdictional watercourses onsite were classified according to the three-tier method used by the California Department of Forestry & Fire Protection (CALFIRE 2017) and included as a reference in Appendix G. Based on these criteria there are no jurisdictional watercourses onsite. Potential wetlands onsite were assessed based on the likelihood to satisfy the three-tier wetland delineation criteria used by the Army Corps of Engineers *Wetland Delineation Manual* (ACOE 1987), however a protocol-level wetland delineation was not performed. Based on these criteria there is one Class II watercourse, with potential wetlands associated with it especially in the northwest portion of the parcel. Water enters the site in the northwest corner from the adjacent parcel to the north, and flows into the wetlands (Figures 15-16) eventually entering a series of small temporary pools (Figure 14), before that meandering along the western half of the parcel, becoming indistinct at times. Water coalesces into a single Class II channel near the culvert crossing (Figure 12) before turning into a vegetated swale with wetland vegetation that runs along the western fenceline and passes offsite as a roadside ditch along Loconomi Road.

There is a secondary drainage in the eastern half of the parcel, that examination of aerial photographs over ~20 years shows has been modified in the past by trenching. Within the last 5 years, the area has been disked however and there is no remnants of these trenches anymore. A wet area is visible to the southeast of the main residence in aerial photographs, but the area now does not meet the vegetation qualification for wetland cover since it is primarily upland species in this area to the southeast of the house, although cracking was evident in the soil. Similarly, there is a historic trench leading onsite from the northeast also

visible in aerial photos (e.g. the one used in Figure 3) although it no longer exists (see Figure 11) also likely due to disking. In our opinion the disking returned the hydrology of the site to a more natural condition than existed with the trenches and so no remediation or further action should be necessary.

2.5 SOILS & LOCAL GEOMORPHOLOGY

The parent materials on the project parcel are typical of southwestern Lake County, with easily erodible sediments of the Franciscan Formation dissected by highly seasonal rivers (USGS 1985). The entirety of the project parcel is mapped as Maxwell clay loam, 0% to 2% slopes, (#164). This soil type also has lesser proportions of Yorkville (7%), Cole (7%), and Unnamed (7%) soil types, and is designated not prime farmland. Parent materials of all of the above soil types are residuum weathered from basalt and/or andesite. There are no serpentine or other ultramafic rock types onsite and no serpentine-derived soils. There are no alkalai or vernal pool soil types onsite.

3.0 SUMMARY & CONCLUSIONS

None of the special-status plant species listed in Appendix A were observed during the surveys performed at the site in September 2020, although the survey was done outside of the normal flowering time of annual species. Since there is one special-status plant species, Jepson's milk vetch, that was observed onsite recently, even though we did not observe it onsite it is highly likely that it is still onsite. The centroid of the Jepson's milk vetch polygon is located onsite, in the north-central portion of the site, and was entered into the CNDDDB database in 2003 just prior to construction of the single family residence, thus is presumed to have been found during permitting of the single family residence onsite. There is another special-status plant species that has a polygon that overlaps with the project parcel, Mt. St. Helena morning glory. Although this occurrence was found much farther in the past (1943), there are occurrences nearby found as recently as 1990, thus it is moderately likely that this species exists onsite. There are also three other species found within one mile of the site: Two-carpellate Western flax, Small pincushion navarretia, and Saline clover. All of these species are specialists on either serpentine soils, seasonal wetlands, or both, and the entire project site has serpentine-derived soils, thus it is moderately likely that these three species occur onsite. Due to the high potential for special-status plant species to exist onsite, we recommend spring surveys in early, mid, and late season to ensure that there are no impacts to special-status plant species onsite. However, if development is limited to existing disturbed areas, and maintain 100-foot setbacks off of all potential wetlands, then no impacts are anticipated and no spring surveys should be necessary.

No special-status animal species were observed during the surveys performed at the site in July 2020. Despite this, there is suitable habitat for breeding in the form of temporary pools, and also suitable habitat for estivation due to the large cracks in the ground that were visible in September. Due to the existence of several occurrences of Foothill yellow-legged frog (FYLF) within migration distance of the project parcel, and the existence of suitable habitat onsite, we recommend the avoidance and minimization measures specific to amphibians in Appendix F7 be followed including preconstruction survey by a biological monitor prior to ground disturbance if it is to occur during the summer estivation season. If these measures are followed, we anticipate the likelihood of impacting FYLF is negligible. However, as with plants, above, if development is to be limited entirely to existing disturbed areas then no preconstruction survey should be required.

There are several jurisdictional watercourses and seasonal wetlands onsite, and as long as 100-foot setbacks are observed off of the features mapped in Figure 3, and as long as intact native vegetation exists within the 100-foot setbacks, we do not anticipate any impacts to downstream water quality due to sedimentation. Despite this, the culvert that is required to access the proposed cultivation area may not be adequately sized to for a 100-year flood, and so consultation with a hydrologists is recommended. The area surrounding the culvert also contains wetland vegetation, and so a wetland delineation is recommended if culvert replacement is required. However, if development is to be limited entirely to previously disturbed areas, then no wetland delineation should be required. Anywhere revegetation after disturbance is required, only native vegetation should be used. A list of suitable species and nurseries/vendors can be provided by PEC on request. Sterile wheat is acceptable if no native species can be obtained.

4.0 REGULATORY FRAMEWORK

4.1 FEDERAL ENDANGERED SPECIES ACT

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over federally-listed threatened and endangered species under the federal Endangered Species Act (FESA). The USFWS also maintains a list of 'proposed' species and candidate species that are not legally protected under the FESA, but are often included in their review of a project as they may become listed in the near future. The FESA protects listed animal species from harm or "take" which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that results in death or injury to a listed species. An activity can be defined as a "take" even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under FESA if they occur on federal lands. Pursuant to the requirements of the FESA, a federal agency reviewing a proposed project within its jurisdiction must determine whether any federally-listed threatened or endangered species (plants and animals) may be present in the project area and determine whether the proposed project may affect such species. Any activities that could result in the take of a federally-listed species will require formal consultation with the USFWS.

4.2 CALIFORNIA ENDANGERED SPECIES ACT

The California Endangered Species Act (CESA) protects any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, the California Department of Fish and Wildlife (CDFW) has jurisdiction over state-listed species (California Fish and Wildlife Code 2070). Take of state-listed species requires a permit from CDFW, which is granted only under strictly limited circumstances. Additionally, the CDFW maintains lists of "species of special concern" that are defined as animal species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats. Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed or proposed endangered or threatened species may be present in the project area and determine whether the proposed project may result in a significant impact on such species.

4.3 CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in FESA and CESA and the section of the California Fish and Wildlife Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts, if it finds that the species meets the criteria of a threatened or endangered species.

4.4 CLEAN WATER ACT

Under Section 404 of the federal Clean Water Act, the U.S. Army Corps of Engineers (Corps) is responsible for regulating the discharge of fill material into waters of the United States. Waters of the U.S. and their lateral limits are defined in 33 CFR Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed "isolated wetlands" and, depending on the circumstances, may also be subject to Corps jurisdiction. In general, a Corps permit must be obtained before placing fill in wetlands or other waters of the U.S. The type of permit depends on the acreage involved and the purpose of the proposed fill. Minor amounts of fill are sometimes covered by Nationwide Permits, which were established to streamline the permit process for projects with "minimal" impacts on wetlands or other waters of the U.S. An Individual Permit is required for projects that result in more than a minimal impact on jurisdictional areas. The Individual Permit process requires evidence that fill of jurisdictional areas has been minimized to the extent "practicable" and provides an opportunity for public review of the project.

4.5 CALIFORNIA WATER QUALITY REGULATORY PROGRAMS

Pursuant to Section 401 of the federal Clean Water Act and the state's Porter-Cologne Act, projects that are regulated by the Corps must obtain water quality certification from the Regional Water Quality Control Board (RWQCB). This certification ensures that the project will uphold state water quality standards. The RWQCB sometimes asserts jurisdiction over wetlands that the Corps does not (e.g. certain isolated wetlands) and may impose mitigation requirements even if the Corps does not. The CDFW also exerts jurisdiction over the bed and banks of watercourses and water bodies according to provisions of Section 1601 to 1603 of the Fish and Wildlife Code. The Fish and Wildlife Code requires a Stream Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or water body.

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FIGURE 1: REGIONAL LOCATION

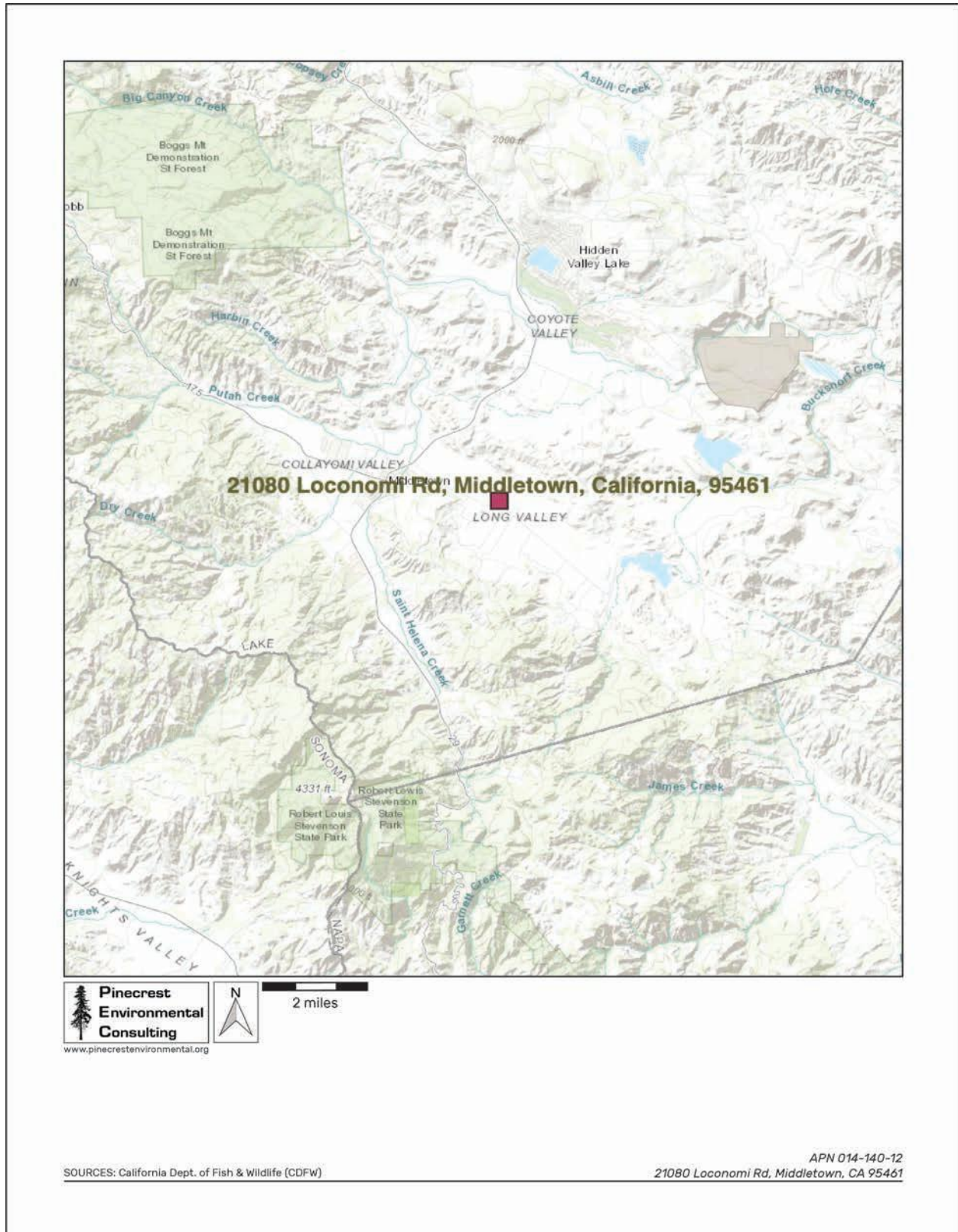


FIGURE 2: 40-FOOT CONTOURS

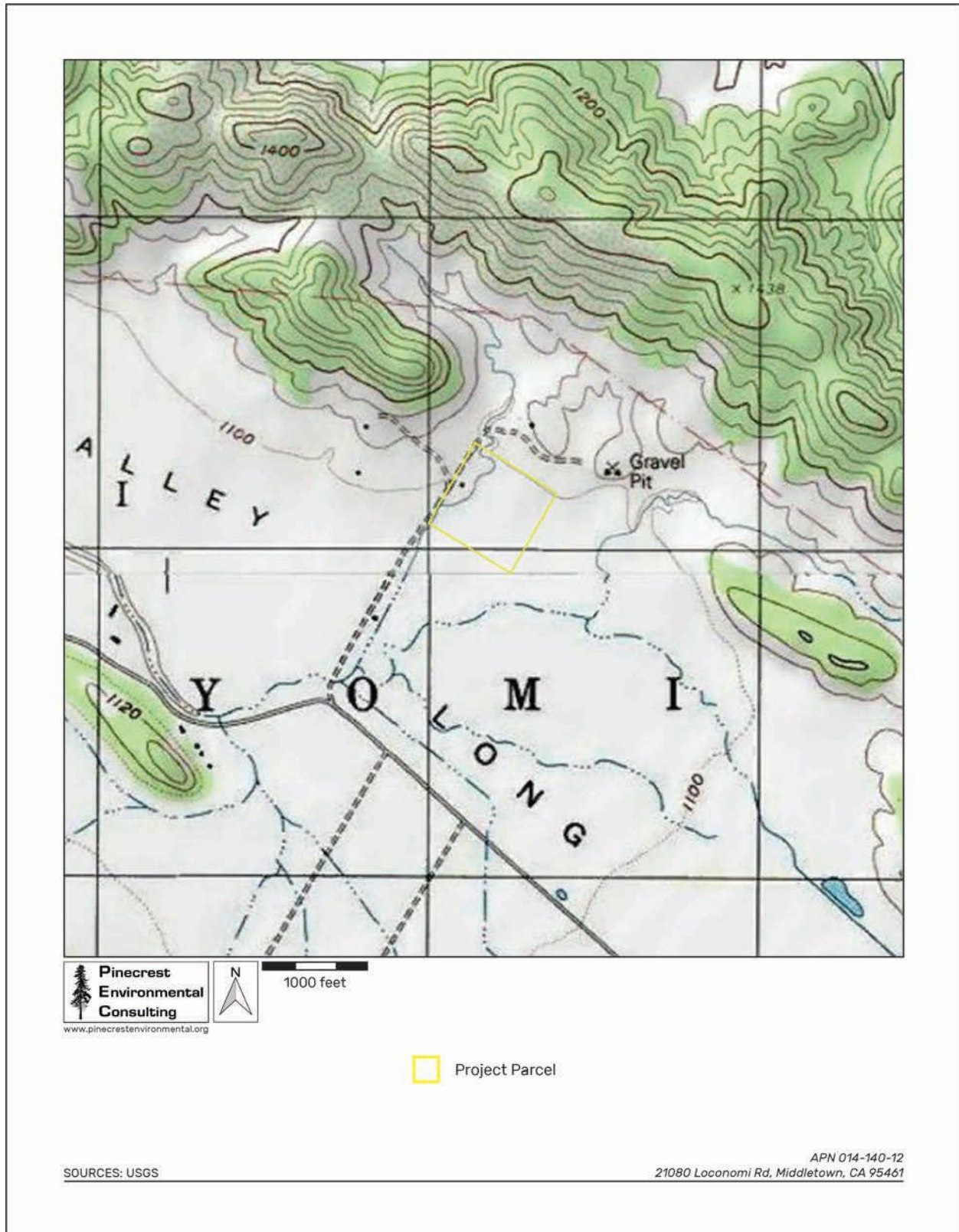


FIGURE 3: WATERCOURSES

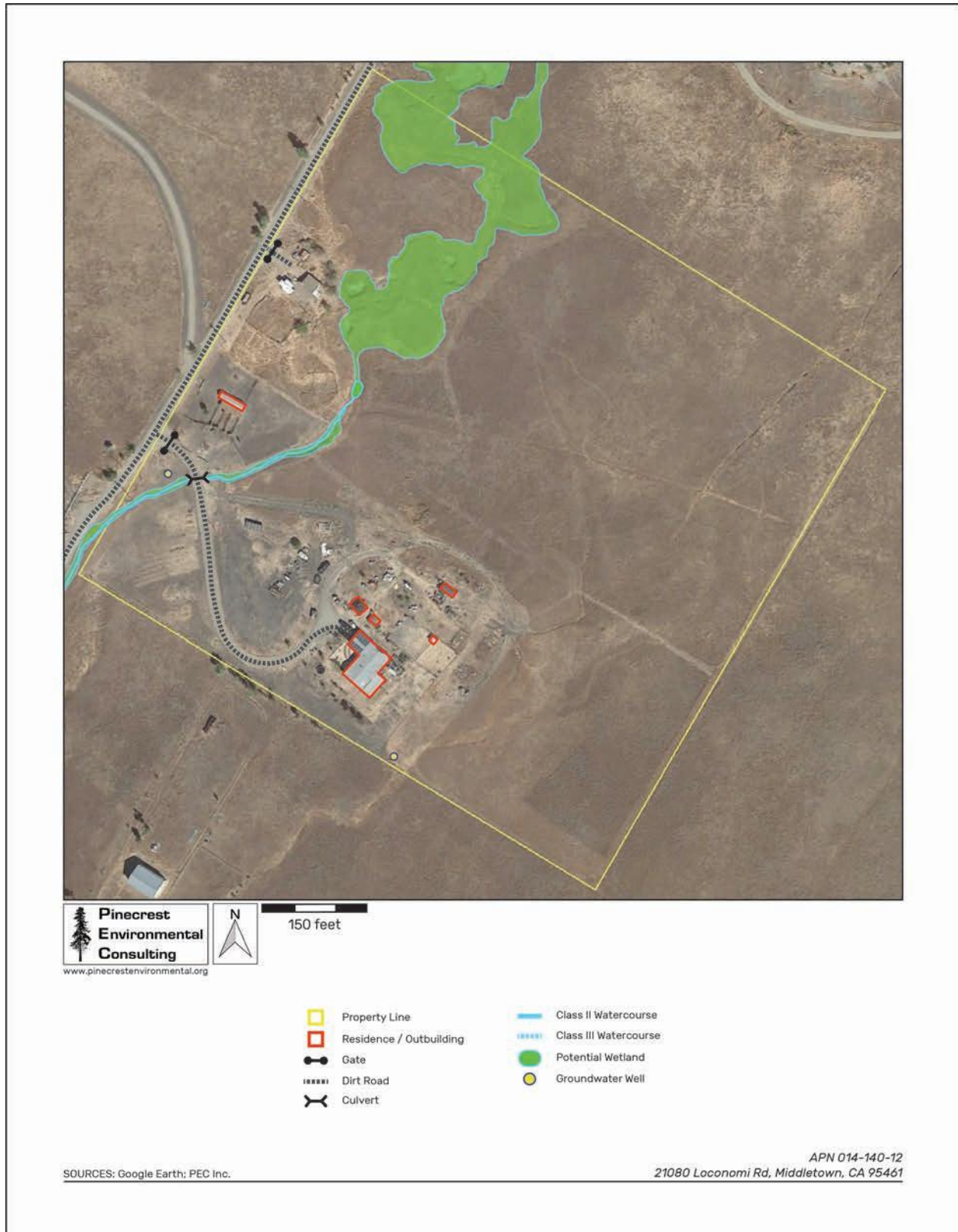


FIGURE 4: PHOTOGRAPH OF DRIVEWAY



SOURCES: PEC Inc.

APN 014-140-12
21080 Loconomi Rd, Middletown, CA 95461

FIGURE 5: PHOTOGRAPH OF GATE



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FIGURE 6: PHOTOGRAPH OF RESIDENCE



SOURCES: PEC Inc.

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FIGURE 7: PHOTOGRAPH OF GROUNDWATER WELL



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FIGURE 8: PHOTOGRAPH OF GROUNDWATER WELL



SOURCES: PEC Inc.

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FIGURE 9: PHOTOGRAPH OF OUTBUILDING



SOURCES: PEC Inc.

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FIGURE 10: PHOTOGRAPH OF EAST FENCELINE



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FIGURE 11: PHOTOGRAPH OF NORTH FENCELINE



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FIGURE 12: PHOTOGRAPH OF DRIVEWAY CULVERT



FIGURE 13: PHOTOGRAPH OF GRASSLAND



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FIGURE 14: PHOTOGRAPH OF WETLAND



SOURCES: PEC Inc.

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FIGURE 15: PHOTOGRAPH OF WETLAND



SOURCES: PEC Inc.

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FIGURE 16: PHOTOGRAPH OF WETLAND



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APPENDIX A: SPECIAL-STATUS SPECIES CONSIDERED

The following is a list of special-status plant and animal species generated based on knowledge of the species and habitats of Lake County by PEC staff, from various State and Federal databases, and from the California Natural Diversity Database (CNDDDB). Known occurrences within 5 miles of the project site are shown in bold.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
PLANTS			
Adobe lily (<i>Fritillaria pluriflora</i>)	—/—/1B.2	Valley grasslands, foothill woodland	<u>Medium</u> : Some grassland habitat exists onsite.
Anthony peak lupine (<i>Lupinus antoninus</i>)	—/—/1B.2	Montane forest	<u>None</u> : No suitable montane habitat exists onsite.
Baker's manzanita (<i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i>)	—/—/1B.1	Serpentine chaparral	<u>None</u> : No chaparral habitat exists onsite.
Baker's meadowfoam (<i>Limnanthes bakeri</i>)	—/ST/1B.1	Vernal pools, freshwater wetland	<u>Medium</u> : Some seasonal wetland habitat exists onsite.
Baker's navarretia (<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>)	—/—/1B.1	Vernal pools	<u>Medium</u>: Some seasonal wetland habitat exists onsite. Nearest known occurrence is 1.3 miles NW of the parcel near Crazy Creek.
Beaked tracyina (<i>Tracyina rostrata</i>)	—/—/1B.2	Valley grassland, foothill woodland	<u>Low</u> : Some grassland habitat exists onsite.
Bent flowered fiddleneck (<i>Amsinckia lunaris</i>)	—/—/1B.2	Valley grassland, foothill woodland	<u>Medium</u>: Some suitable grassland habitat exists onsite. Nearest known occurrence is 1.4 miles NW of the parcel near Crazy Creek.
Big scale balsamroot (<i>Balsamorhiza macrolepis</i>)	—/—/1B.2	Valley grassland, foothill woodland	<u>Low</u> : Some grassland habitat exists onsite.
Bogg's Lake hedge-hyssop (<i>Gratiola heterosepala</i>)	—/—/1B.2	Vernal pools, lake margins	<u>Low</u> : Some suitable wetland habitat exists onsite.
Bolander's horkelia (<i>Horkelia bolanderi</i>)	—/—/1B.2	Yellow pine forest, grassland	<u>Low</u> : No suitable forest habitat exists onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Brandegee's eriastrum (<i>Eriastrum brandegeae</i>)	—/—/1B.1	Clearings in chaparral	<u>Low</u> : No suitable chaparral habitat exists onsite.
Bristly sedge (<i>Carex comosa</i>)	—/—/2B.1	Freshwater marsh, riparian	<u>Low</u> : Some suitable wetland habitat exists onsite.
Brownish beaked-rush (<i>Rhynchospora capitellata</i>)	—/—/2B.2	Freshwater marsh, riparian	<u>Low</u> : Some suitable wetland habitat exists onsite.
Burke's goldfields (<i>Lasthenia burkei</i>)	FE/SE/1B.1	Vernal pools	<u>Medium</u>: Some suitable seasonal wetland habitat exists onsite. Nearest known occurrence is 3.2 miles N of the parcel near Coyote Creek.
California alkalai grass (<i>Puccinellia simplex</i>)	—/—/1B.2	Alkalai sink	<u>Very Low</u> : Some seasonal wetland habitat exists onsite.
California satintail (<i>Imperata brevifolia</i>)	—/—/2B.1	Chaparral	<u>None</u> : No suitable chaparral habitat exists onsite.
Calistoga ceanothus (<i>Ceanothus divergens</i>)	—/—/1B.2	Chaparral	<u>None</u> : No chaparral habitat exists onsite.
Cascade downingia (<i>Downingia willamettensis</i>)	—/—/2B.2	Vernal pool	<u>Low</u> : Some seasonal wetland habitat exists onsite.
Clara Hunt's milk vetch (<i>Astragalus claranus</i>)	—/—/1B.1	Chaparral, grassland	<u>None</u> : No chaparral habitat exists onsite.
Cobb Mountain lupine (<i>Lupinus sericatus</i>)	—/—/1B.2	Chaparral, pine forest	<u>None</u>: No chaparral habitat exists onsite. Nearest known occurrence is 4.9 miles S of the parcel near Table Mountain.
Colusa layia (<i>Layia septentrionalis</i>)	—/—/1B.2	Chaparral, valley grassland	<u>Medium</u> : Some suitable grassland habitat exists onsite.
Congested-headed hayfield tarplant (<i>Hemizonia congesta</i> ssp. <i>congesta</i>)	—/—/1B.2	Grassland, coastal scrub	<u>Medium</u>: Some grassland habitat exists onsite. Nearest known occurrence is 1.8 miles N of the parcel near Coyote Valley.
Deep scarred cryptantha (<i>Cryptantha excavata</i>)	—/—/1B.1	Foothill woodland	<u>Low</u> : Some grassland habitat exists onsite.
Dimorphic snapdragon (<i>Antirrhinum subcordatum</i>)	—/—/4.3	Serpentine chaparral	<u>Low</u> : Some serpentine habitat exists onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Drymaria-like western flax (<i>Hesperolinon drymarioides</i>)	—/—/1B.2	Serpentine outcrops	<u>Low</u> : Some serpentine habitat exists onsite.
Dwarf downingia (<i>Downingia pusilla</i>)	—/—/2B.2	Vernal pools, freshwater wetland	<u>Low</u> : Some seasonal wetland habitat exists onsite.
Dwarf soaproot (<i>Chlorogalum pomeridianum</i> var. <i>minus</i>)	—/—/1B.2	Serpentine chaparral	<u>Very Low</u> : No serpentine chaparral habitat exists onsite.
Early jewelflower (<i>Streptanthus vernalis</i>)	—/—/1B.2	Serpentine outcrops	<u>Low</u> : Some serpentine habitat exists onsite. Nearest known occurrence is 4.2 miles S of the parcel near Table Mountain.
Eel-grass pondweed (<i>Potamogeton zosteriformis</i>)	—/—/2B.2	Freshwater lakes, ponds	<u>Low</u> : Some seasonal pond habitat exists onsite.
Few-flowered navarretia (<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>)	FE/ST/1B.1	Vernal pools	<u>Low</u> : Some seasonal wetland habitat exists onsite.
Franciscan onion (<i>Allium peninsulare</i> var. <i>franciscanum</i>)	—/—/1B.2	Grassland	<u>Low</u> : Some grassland habitat exists onsite.
Freed's jewelflower (<i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i>)	—/—/1B.2	Serpentine outcrops	<u>Low</u> : Some serpentine habitat exists onsite.
Geysers panicum (<i>Panicum acuminatum</i> var. <i>thermale</i>)	—/—/1B.2	Chaparral, wetlands	<u>None</u> : No chaparral seep habitat exists onsite.
Glandular western flax (<i>Hesperolinon adenophyllum</i>)	—/—/1B.2	Chaparral	<u>Low</u> : No suitable chaparral habitat exists onsite.
Grassleaf water plantain (<i>Alisma gramineum</i>)	—/—/2B.2	Wetland, riparian	<u>Medium</u> : Some suitable riparian habitat exists onsite.
Green jewelflower (<i>Streptanthus hesperidis</i>)	—/—/1B.2	Serpentine outcrops	<u>Low</u> : Some serpentine habitat exists onsite. Nearest known occurrence is 1.3 miles NW of the parcel near Crazy Creek.
Greene's narrow-leaved daisy (<i>Erigeron greenei</i>)	—/—/1B.2	Serpentine grassland	<u>Medium</u> : Some serpentine habitat exists onsite. Nearest known occurrence is 2.4 miles W of the parcel near Collayomi Valley.
Hall's harmonia (<i>Harmonia hallii</i>)	—/—/1B.2	Chaparral, grassland	<u>Medium</u> : Some grassland habitat exists onsite. Nearest known occurrence is 1.3 miles N of the parcel near Crazy Creek.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Hoffman's bristly jewelflower (<i>Streptanthus glandulosus</i> ssp. <i>hoffmanii</i>)	—/—/1B.3	Chaparral, foothill woodland	<u>Very Low</u> : No suitable chaparral habitat exists onsite.
Holly-leaved ceanothus (<i>Ceanothus purpureus</i>)	—/—/1B.2	Chaparral	<u>Very Low</u> : No suitable chaparral habitat exists onsite.
Hospital Canyon larkspur (<i>Delphinium californicum</i> ssp. <i>interius</i>)	—/—/1B.2	Foothill woodland	<u>None</u> : No woodland habitat exists onsite.
Indian Valley brodiaea (<i>Brodiaea rosea</i>)	—/SE/3.1	Serpentine chaparral	<u>Low</u> : Some serpentine habitat exists onsite.
Jepson's coyote thistle (<i>Eryngium jepsonii</i>)	—/—/4.2	Wetlands and vernal pools	<u>Medium</u> : Some seasonal wetland habitat exists onsite.
Jepson's dodder (<i>Cuscuta jepsonii</i>)	—/—/1B.2	Chaparral, grassland	<u>Medium</u> : Some suitable habitat exists onsite.
Jepson's leptosiphon (<i>Leptosiphon jepsonii</i>)	—/—/1B.2	Chaparral, serpentine grassland	<u>Medium</u> : Some serpentine habitat exists onsite. Nearest known occurrence is 1.5 miles SE of the parcel near Detert Reservoir.
Jepson's milk-vetch (<i>Astragalus rattanii</i> var. <i>jepsonianus</i>)	—/—/1B.2	Chaparral, serpentine grassland	<u>High</u> : Some serpentine habitat exists onsite. Nearest known occurrence is located onsite (Appendix C), observed in 2003.
Keck's checkerbloom (<i>Sidalcea keckii</i>)	FE/—/1B.1	Valley grassland, serpentine	<u>Low</u> : Some suitable wetland habitat exists onsite.
Kenwood marsh checkerbloom (<i>Sidalcea oregana</i> ssp. <i>valida</i>)	FE/SE/1B.1	Freshwater wetlands	<u>Low</u> : Some suitable wetland habitat exists onsite.
Konocti manzanita (<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>)	—/—/1B.3	Chaparral, foothill woodland	<u>None</u> : No suitable chaparral habitat exists onsite. Nearest known occurrence is 3.2 miles SW of the parcel near Wilkinson Creek.
Kruckeberg's jewelflower (<i>Streptanthus morrisonii</i> ssp. <i>kruckebergii</i>)	—/—/1B.2	Serpentine outcrops	<u>Very Low</u> : Some serpentine habitat exists onsite.
Lake County stonecrop (<i>Sedella leiocarpa</i>)	—/—/1B.1	Vernal pools	<u>Low</u> : Some seasonal wetland habitat exists onsite.
Lake County western flax (<i>Hesperolinon didymocarpum</i>)	—/SE/1B.2	Serpentine grasslands	<u>High</u> : Some suitable serpentine habitat exists onsite. Nearest known

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
			occurrence is 1.8 miles NW of the parcel near Crazy Creek.
Lake Pillsbury checkerbloom (<i>Sidalcea hickmanii</i> spp. <i>pillsburiensis</i>)	—/—/1B.2	Chaparral	<u>None</u> : No suitable chaparral habitat exists onsite.
Legenere (<i>Legenere limosa</i>)	—/—/1B.1	Vernal pool, freshwater wetland	<u>Medium</u> : Some seasonal wetland habitat exists onsite.
Loch Lomond button-celery (<i>Eryngium constancei</i>)	FE/SE/1B.1	Vernal pool, freshwater wetland	<u>Low</u> : Some seasonal wetland habitat exists onsite.
Many-flowered navarretia (<i>Navarretia leucocephala</i> spp. <i>pliantha</i>)	FE/SE/1B.2	Vernal pools	<u>Low</u> : Some seasonal wetland habitat exists onsite.
Marsh checkerbloom (<i>Sidalcea oregana</i> ssp. <i>hydrophila</i>)	—/—/1B.2	Freshwater wetland, riparian	<u>Low</u> : Some seasonal wetland habitat exists onsite.
Mayacamas popcornflower (<i>Plagiobothrys lithocaryus</i>)	—/—/A1	Foothill woodland, valley grassland	<u>Very Low</u> : Presumed extinct. Last observed in 1884 near present-day Lakeport.
Milo Baker's lupine (<i>Lupinus milo-bakeri</i>)	—/—/1B.1	Foothill woodland	<u>None</u> : No suitable woodland habitat exists onsite.
Morrison's jewelflower (<i>Streptanthus morrisonii</i> ssp. <i>morrisonii</i>)	—/—/1B.2	Serpentine outcrops	<u>None</u> : No serpentine outcrop habitat exists onsite.
Mt. St. Helena morning-glory (<i>Calystegia collina</i> ssp. <i>oxyphylla</i>)	—/—/4.2	Serpentine chaparral	<u>High</u>: Some suitable serpentine habitat exists onsite. Nearest known occurrence has a CNDDDB polygon that overlaps with the project parcel, and has a centroid located approximately 0.6 mi offsite to the east (Appendix C).
Napa bluecurls (<i>Trichostema ruygtii</i>)	—/—/1B.2	Chaparral, grassland	<u>Medium</u>: Some grassland habitat exists onsite. Nearest known occurrence is 4.7 miles S of the parcel near Table Mountain.
Napa checkerbloom (<i>Sidalcea hickmanii</i> ssp. <i>napensis</i>)	—/—/1B.1	Chaparral	<u>Very Low</u> : No suitable woodland habitat exists onsite.
Napa false indigo (<i>Amorpha californica</i> var. <i>napensis</i>)	—/—/1B.2	Forest, woodland	<u>None</u>: No suitable woodland habitat exists onsite. Nearest known occurrence is 4.8 miles SE of the parcel near Butts Creek.
Narrow-anthered brodiaea (<i>Brodiaea leptandra</i>)	—/—/1B.2	Foothill woodland, grassland	<u>Low</u> : Some grassland habitat exists onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
North Coast semaphore grass (<i>Pleuropogon hooverianus</i>)	—/—/1B.1	Freshwater wetland, vernal pools	<u>Low</u> : Some seasonal wetland habitat exists onsite.
Northern California black walnut (<i>Juglans hindsii</i>)	—/—/1B.1	Riparian	<u>None</u> : No suitable riparian habitat exists onsite.
Northern meadow sedge (<i>Carex praticola</i>)	—/—/2B.2	Freshwater wetlands	<u>Very Low</u>: Some suitable wetland habitat exists onsite. Nearest known occurrence is 4.7 miles NW of the parcel near Harbin Creek.
Nuttall's ribbon-leaved pondweed (<i>Potamogeton epihydrus</i>)	—/—/2B.2	Ponds and lakes	<u>Very Low</u> : Some seasonal wetland habitat exists onsite.
Oregon polemonium (<i>Polemonium carneum</i>)	—/—/2B.2	Coastal scrub, yellow pine forest	<u>None</u> : No suitable yellow pine habitat exists onsite.
Oval-leaved viburnum (<i>Viburnum ellipticum</i>)	—/—/2B.3	Chaparral	<u>None</u> : No suitable chaparral habitat exists onsite.
Pappose tarplant (<i>Centromadia parryi</i> ssp. <i>parryi</i>)	—/—/1B.2	Grassland, wetland	<u>Medium</u> : Some grassland habitat exists onsite.
Pennell's bird's beak (<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i>)	FE/SR/1B.2	Chaparral	<u>None</u> : No suitable chaparral habitat exists onsite.
Peruvian dodder (<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>)	—/—/1B.2	Grassland, chaparral	<u>Medium</u> : Some suitable grassland habitat exists onsite.
Pink creamsacs (<i>Castilleja rubicundula</i> var. <i>rubicundula</i>)	—/—/1B.2	Grasslands	<u>Medium</u>: Some grassland habitat exists onsite. Nearest known occurrence is 3.2 miles NW of the parcel near Harbin Mountain.
Porter's navarretia (<i>Navarretia paradoxinota</i>)	—/—/1B.3	Grasslands, wetlands	<u>High</u>: Some suitable grassland habitat exists onsite. Nearest known occurrence is 1.8 miles N of the parcel near Coyote Valley.
Raiche's manzanita (<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>)	—/—/1B.1	Serpentine chaparral	<u>None</u> : No suitable chaparral habitat exists onsite.
Rincon Ridge ceanothus (<i>Ceanothus confusus</i>)	—/—/1B.1	Chaparral	<u>None</u>: No suitable chaparral habitat exists onsite. Nearest known occurrence is 4.8 miles S of the parcel near Table Mountain.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Rincon Ridge manzanita (<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i>)	—/—/1B.1	Chaparral	<u>None</u> : No suitable chaparral habitat exists onsite.
Round-leaved filaree (<i>California macrophylla</i>)	—/—/1B.2	Foothill grassland	<u>Low</u> : Some grassland habitat exists onsite.
Saline clover (<i>Trifolium hydrophilum</i>)	—/—/1B.2	Wetland, riparian	<u>High</u> : Some seasonal wetland habitat exists onsite. Nearest known occurrence is 0.8 miles W of the parcel near Long Valley.
San Joaquin spearscale (<i>Extriplex joaquinana</i>)	—/—/1B.2	Shadscale scrub, valley grassland	<u>None</u> : No alkalai scrub habitat exists.
Santa Rosa horkelia (<i>Horkelia tenuiloba</i>)	—/—/1B.2	Chaparral	<u>Very Low</u> : No suitable chaparral habitat exists onsite.
Sebastopol meadowfoam (<i>Limnanthes vinculans</i>)	FE/SE/1B.1	Freshwater wetland, vernal pools	<u>Low</u> : Some seasonal wetland habitat exists onsite, although species is not known from the region.
Serpentine cryptantha (<i>Cryptantha dissita</i>)	—/—/1B.2	Serpentine chaparral	<u>Medium</u> : Some serpentine habitat exists onsite. Nearest known occurrence is 1.9 miles SW of the parcel near Dead Horse Flat.
Serpentine daisy (<i>Erigeron serpentinus</i>)	—/—/1B.3	Serpentine chaparral	<u>Very Low</u> : Some serpentine habitat exists onsite.
Sharsmith's western flax (<i>Hesperolinon sharsmithiae</i>)	—/—/1B.2	Chaparral	<u>Very Low</u> : No suitable chaparral habitat exists onsite.
Shining navarretia (<i>Navarretia nigelliformis</i> ssp. <i>radians</i>)	—/—/1B.2	Vernal pools	<u>Very Low</u> : Some seasonal wetland habitat exists onsite, although species is not known from the region.
Slender Orcutt grass (<i>Orcuttia tenuis</i>)	FT/SE/1B.1	Grassland, freshwater wetlands	<u>Low</u> : Some seasonal wetland habitat exists onsite.
Small-flowered calycadenia (<i>Calycadenia micrantha</i>)	—/—/1B.2	Foothill grassland	<u>Low</u> : Some suitable grassland habitat exists onsite.
Small groundcone (<i>Kopsiopsis hookeri</i>)	—/—/2B.3	Redwood forest	<u>None</u> : No suitable forest habitat exists onsite.
Small pincushion navarretia (<i>Navarretia myersii</i> ssp. <i>deminuta</i>)	—/—/1B.1	Wetlands	<u>High</u> : Some seasonal wetland habitat exists onsite. Nearest known occurrence is 0.6 miles S of the parcel at the intersection of Butts Canyon

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
			Road and Loconomi Road (Appendix C).
Snow Mountain buckwheat (<i>Eriogonum nervulosum</i>)	—/—/1B.2	Serpentine outcrops	Very Low: Some serpentine habitat exists onsite. Nearest known occurrence is 4.7 miles SW of the parcel near Kroll Creek.
Socrates Mine jewelflower (<i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i>)	—/—/1B.2	Serpentine outcrops	<u>Low:</u> Some serpentine habitat exists onsite.
Sonoma beardtongue (<i>Penstemon newberryi</i> var. <i>sonomensis</i>)	—/—/1B.3	Chaparral	<u>None:</u> No suitable chaparral habitat exists onsite.
Sonoma ceanothus (<i>Ceanothus sonomensis</i>)	—/—/1B.2	Chaparral	None: No suitable chaparral habitat exists onsite. Nearest known occurrence is 5.0 miles SE of the parcel near Oat Hill.
Thin-lobed horkelia (<i>Horkelia tenuiloba</i>)	—/—/1B.2	Chaparral	<u>Very Low:</u> No suitable chaparral habitat exists onsite.
Three-fingered morning glory (<i>Calystegia collina</i> ssp. <i>tridactylosa</i>)	—/—/1B.2	Serpentine grassland	<u>Medium:</u> Some serpentine habitat exists onsite.
Three Peaks jewelflower (<i>Streptanthus morrisonii</i> spp. <i>elatus</i>)	—/—/1B.2	Serpentine outcrops	<u>Low:</u> Some serpentine habitat exists onsite. Nearest known occurrence is 3.8 miles S of the parcel near Hoffman Creek.
Tracy's eriastrum (<i>Eriastrum tracyi</i>)	—/SR/3.2	Chaparral	<u>Very Low:</u> No suitable chaparral habitat exists onsite.
Two-carpellate Western flax (<i>Hesperolinon bicarpellatum</i>)	—/—/1B.2	Serpentine chaparral	High: Some serpentine habitat exists onsite. Nearest known occurrence is 0.3 miles NE of the parcel near Long Valley.
Vine Hill ceanothus (<i>Ceanothus foliosus</i> var. <i>vineatus</i>)	—/—/1B.1	Chaparral	<u>None:</u> No suitable chaparral habitat exists onsite.
Vine Hill manzanita (<i>Arctostaphylos densiflora</i>)	—/SE/1B.1	Chaparral	<u>None:</u> No suitable chaparral habitat exists onsite.
Watershield (<i>Brasenia schreberi</i>)	—/—/2B.3	Pond, wetland	<u>Low:</u> Some seasonal wetland habitat exists in the project area.
White beaked-rush (<i>Rhynchospora alba</i>)	—/—/2B.2	Wetlands, freshwater marsh	<u>Low:</u> Some seasonal wetland habitat exists onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
White-flowered rein orchid (<i>Piperia candida</i>)	—/—/1B.2	Yellow pine forest	<u>None</u> : No suitable forest habitat exists onsite.
Wolly meadowfoam (<i>Limnanthes floccosa</i> ssp. <i>floccosa</i>)	—/—/4.2	Vernal pools	<u>Low</u> : Some seasonal wetland habitat exists onsite.
MOSSES, LICHENS & LIVERWORTS			
Angel's hair lichen (<i>Ramalina thrausta</i>)	—/—/2B.1	Old growth conifer and hardwood forests	<u>None</u> : No suitable forest habitat exists onsite.
Coastal triquetrella (<i>Triquetrella californica</i>)	—/—/1B.2	Forest, woodland	<u>None</u> : No suitable woodland habitat exists onsite.
Elongate copper moss (<i>Mielichhoferia elongata</i>)	—/—/4.3	Forest, woodland	<u>None</u> : No suitable woodland habitat exists onsite.
Methuselah's beard lichen (<i>Dolichousnea longissima</i>)	—/—/4.2	Old growth conifer and hardwood forests	<u>None</u> : No suitable forest habitat exists onsite.
Slender silver moss (<i>Anomobryum julaceum</i>)	—/—/4.2	Rocky substrates in forests, riparian	<u>None</u> : No suitable riparian habitat exists onsite.
Torren's grimmia (<i>Grimmia torenii</i>)	—/—/1B.3	Forest, woodland	<u>None</u> : No suitable woodland habitat exists onsite.
FISH			
Chinook Salmon Coastal California DPS (<i>Oncorhynchus kisutch</i>)	FT/SE/—	Freshwater streams, open ocean and estuaries	<u>None</u> : No suitable streams exist onsite.
Clear Lake Drainage Resident Rainbow trout (<i>Oncorhynchus mykiss</i>)	FE/SE/—	Freshwater streams, open ocean and estuaries	<u>None</u> : No suitable habitat exists in the project area.
Clear Lake hitch (<i>Lavinia exilicauda chi</i>)	FE/SE/—	Freshwater lakes and streams	<u>None</u> : No suitable habitat exists in the project area.
Clear Lake tule perch (<i>Hysteroecarpus traskii lagunae</i>)	—/SSC/—	Freshwater lakes and streams	<u>None</u> : No suitable habitat exists in the project area.
Coho Salmon Central California Coast ESU (<i>Oncorhynchus kisutch</i>)	FE/SE/—	Freshwater streams, open ocean and estuaries	<u>None</u> : No suitable streams exist onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Sacramento perch (<i>Archoplites interruptus</i>)	—/SSC/—	Low gradient sloughs and lakes	<u>None</u> : No suitable habitat exists in the project area.
Sacramento splittail (<i>Pogonichthys macrolepidotus</i>)	—/SSC/—	Low gradient freshwater streams	<u>None</u> : No suitable streams exist onsite.
Steelhead Central California Coast DPS (<i>Oncorhynchus mykiss irideus</i>)	FT/—/—	Freshwater streams, open ocean and estuaries	<u>None</u> : No suitable streams exist onsite.
Steelhead Northern California DPS (<i>Oncorhynchus mykiss irideus</i>)	FT/—/—	Freshwater streams, open ocean and estuaries	<u>None</u> : No suitable streams exist onsite.
AMPHIBIANS & REPTILES			
California giant salamander (<i>Dicamptodon ensatus</i>)	—/SSC/—	Wetlands and riparian areas	<u>Very Low</u> : Some wetland habitat exists onsite.
Foothill yellow-legged frog (<i>Rana boylei</i>)	—/SSC/—	Wetlands, riparian, streams and ponds	<u>Medium</u>: Some suitable habitat exists onsite. Some poor quality estivation habitat onsite. Nearest known occurrence is 3.3 miles SW of the parcel near Hoodoo Creek.
Red bellied newt (<i>Taricha rivularis</i>)	—/SSC/—	Woodland streams, riparian corridors	<u>Low</u> : No suitable stream habitat exists onsite.
Western pond turtle (<i>Emys marmorata</i>)	—/SSC/—	Slow-moving creeks, streams, ponds, rivers, ditches.	<u>Very Low</u>: No suitable pond habitat exists onsite. Nearest known occurrence is 3.0 miles SW of the parcel near Saint Helena Creek.
INVERTEBRATES			
Behren's silverspot butterfly (<i>Speyeria zerene behrensii</i>)	FE/SSC/—	Coastal prairie	<u>None</u> : No suitable habitat onsite.
Blennosperma vernal pool andrenid bee (<i>Andrena blennospermatis</i>)	—/SSC/—	Upland areas near vernal pools	<u>Low</u> : Some suitable seasonal wetland habitat exists onsite.
Borax Lake cuckoo wasp (<i>Hedychridium milleri</i>)	—/SSC/—	Lakes and streams	<u>None</u> : No suitable lake or stream habitat exists onsite.
Brownish dubiraphian riffle beetle (<i>Dubiraphia brunnescens</i>)	—/SSC/—	Freshwater lakes and streams	<u>None</u> : No suitable stream habitat exists onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
California brackishwater snail (<i>Tryonia imitator</i>)	—/SSC/—	Brackish wetlands	<u>Very Low</u> : Some wetland habitat exists onsite.
California floater (<i>Anodonta californiensis</i>)	—/SSC/—	Freshwater ponds, streams	<u>None</u> : No suitable stream habitat exists onsite.
California freshwater shrimp (<i>Syncaris pacifica</i>)	FE/SE/—	Freshwater ponds	<u>Very Low</u> : Some seasonal wetland habitat exists onsite.
California linderiella (<i>Linderiella occidentalis</i>)	—/SSC/—	Vernal pools	<u>Very Low</u> : Some seasonal wetland habitat exists onsite.
Clear Lake pyrg (<i>Pyrgulopsis ventricosa</i>)	—/SSC/—	Freshwater streams	<u>None</u> : No suitable stream habitat exists onsite.
Crotch bumble bee (<i>Bombus crotchii</i>)	—/SSC/—	Grassland, chaparral	<u>Medium</u> : Some grassland habitat exists onsite.
Leech's skyline diving beetle (<i>Hydroporus leechi</i>)	—/SSC/—	Freshwater ponds	<u>None</u> : No suitable pond habitat exists onsite.
Myrtle silverspot butterfly (<i>Speyeria zerene myrleae</i>)	FE/SSC/—	Coastal prairie, chaparral	<u>None</u> : No suitable chaparral habitat exists onsite.
Monarch butterfly California overwintering Population #1 (<i>Danaus plexippus</i>)	—/SSC/—	Large trees required for roosting.	<u>Low</u> : Some suitable trees for roosting onsite.
Obscure bumble bee (<i>Bombus caliginosus</i>)	—/SSC/—	Grassland, foothill woodland, chaparral	<u>Medium</u> : Some grassland habitat exists onsite.
Opler's longhorn moth (<i>Adela oplerella</i>)	—/SSC/—	Usually associated with <i>Platystemon</i> (creamcups)	<u>Low</u> : Some suitable grassland habitat exists onsite.
Oregon floater (<i>Anodonta oregonensis</i>)	—/SSC/—	Large freshwater streams	<u>None</u> : No suitable stream habitat exists onsite.
Ricksecker's water scavenger beetle (<i>Hydrochara rickseckeri</i>)	—/SSC/—	Freshwater lakes and ponds	<u>Low</u> : Some wet meadow habitat exists onsite. Nearest known occurrence is 0.4 miles SW of the parcel near Long Valley.
Serpentine cypress wood-boring beetle (<i>Trachykele hartmani</i>)	—/SSC/—	Requires cypress trees in serpentine outcrops	<u>None</u> : No suitable host plants known from the project site. Nearest known occurrence is 4.7 miles S of the parcel near Grizzly Creek.
Sonoma zerene fritillary (<i>Speyeria zerene sonomensis</i>)	—/SSC/—	Grasslands and meadows with <i>Viola</i> plants	<u>Low</u> : Some suitable grassland habitat exists onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Unnamed isopod (<i>Calasellus californicus</i>)	—/SSC/—	Freshwater wetlands	<u>Low</u> : Some suitable wetland habitat exists onsite.
Western bumblebee (<i>Bombus occidentalis</i>)	—/SSC/—	Grassland	<u>Medium</u> : Some grassland habitat exists onsite.
Wilbur Springs minute moss beetle (<i>Ochthebius reticulatus</i>)	—/SSC/—	Shorelines of hot springs	<u>None</u> : No suitable hot spring habitat exists onsite.
Wilbur Springs shorebug (<i>Saldula usingeri</i>)	—/SSC/—	Ponds	<u>None</u> : No suitable pond habitat exists onsite.
Wilbur Springs shore fly (<i>Paracoenia calida</i>)	—/SSC/—	Hot sulphur springs	<u>None</u> : No suitable hot spring habitat exists onsite.
BIRDS			
American peregrine falcon (<i>Falco peregrinus anatum</i>)	—/SSC/—	Forages in open grasslands, nests in trees	<u>Medium</u> : Some suitable foraging habitat exists. Nearest known occurrence is 0.1 miles S of the parcel somewhere in the USGS Detert Reservoir 7.5 minute quad.
Bank swallow (<i>Riparia riparia</i>)	FE/SE/—	Typically found near lakes and streams	<u>None</u> : No suitable stream habitat exists onsite.
Bald eagle (<i>Haliaeetus leucocephalus</i>)	—/SSC/—	Forages over open lakes and streams	<u>Low</u> : Some suitable foraging habitat exists onsite. Nearest known occurrence is 3.3 miles E of the parcel near McCreary Lake.
Bell's sage sparrow (<i>Artemisiospiza belli belli</i>)	—/SSC/—	Chaparral	<u>None</u> : No suitable chaparral habitat exists onsite.
Black swift (<i>Cypseloides niger</i>)	—/SSC/—	Cliff faces near water	<u>None</u> : No suitable stream habitat exists onsite.
Burrowing owl (<i>Athene cucularia</i>)	—/SSC/—	Grasslands with ground squirrel burrows	<u>Very Low</u> : Some suitable grassland habitat exists onsite.
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	FE/SE/—	Coastal salt marshes and mudflats	<u>None</u> : No suitable salt marsh habitat exists onsite.
California horned lark (<i>Eremophila alpestris actia</i>)	—/SSC/—	Herbaceous vegetation, chaparral	<u>Low</u> : Some suitable foraging habitat exists onsite.
Cooper's hawk (<i>Accipiter cooperii</i>)	—/WL/—	Forages over open grassland	<u>Low</u> : Some suitable foraging habitat exists onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Double-crested cormorant (<i>Phalacrocorax auritus</i>)	—/SSC/—	Forages in open water. Nests in trees and cliffs.	<u>None</u> : No suitable foraging or nesting habitat exists onsite.
Ferruginous hawk (<i>Buteo regalis</i>)	—/SSC/—	Forages over open grassland. Nests in old-growth trees	<u>Low</u> : Some suitable foraging habitat exists onsite.
Golden eagle (<i>Aquila chrysaetos</i>)	—/SSC/—	Forages over open grassland. Nests in old-growth trees	<u>Low</u> : Some suitable foraging habitat exists onsite.
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	—/SSC/—	Forages over open grassland	<u>Low</u> : Some suitable foraging habitat exists onsite.
Great blue heron (<i>Ardea herodias</i>)	—/SSC/—	Nests in trees, forages in wetlands and grasslands	<u>Low</u> : Some suitable foraging habitat exists onsite.
Great egret (<i>Ardea alba</i>)	—/SSC/—	Nests in trees, forages in wetlands and grasslands	<u>Low</u> : Some suitable foraging habitat exists onsite.
Marbled murrelet (<i>Brachyramphus marmoratus</i>)	FT/SE/—	Old growth coniferous forest	<u>None</u> : No suitable old-growth forest habitat exists onsite.
Northern goshawk (<i>Accipiter gentilis</i>)	—/SSC/—	Coniferous forest	<u>None</u> : No suitable forest habitat exists onsite.
Northern spotted owl (<i>Strix occidentalis</i>)	FT/ST/—	Nests primarily in old growth forests	<u>None</u>: No suitable nesting or foraging habitat onsite. Nearest known occurrence is 4.8 miles SW of the parcel near Hoodoo Creek.
Osprey (<i>Pandion haliaetus</i>)	—/WL/—	Areas with fish	<u>Very Low</u> : No suitable foraging habitat onsite. Some poor quality nesting habitat onsite.
Prairie falcon (<i>Falco mexicanus</i>)	—/SSC/—	Forages over grasslands	<u>Medium</u>: Some suitable foraging habitat exists onsite. Nearest known occurrence is 0.1 miles S of the parcel somewhere in the USGS Detert Reservoir 7.5 minute quad.
Purple martin (<i>Progne subis</i>)	FE/SE/—	Insectivorous, nests in cavities	<u>Low</u>: Some suitable foraging habitat onsite. Nearest known occurrence is 2.4 miles SE of the parcel near Detert Reservoir.
Sharp-shinned hawk (<i>Accipiter striatus</i>)	—/SSC/—	Forest and woodland	<u>Very Low</u> : Some suitable foraging habitat exists onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Tricolored blackbird (<i>Agelaius tricolor</i>)	—/SSC/—	Forages in grasslands and nests in freshwater marshes	Low: Some suitable nesting and foraging habitat onsite. Nearest known occurrence is 1.1 miles SE of the parcel near Long Valley.
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	—/SE/—	Woodland, riparian	<u>Low:</u> Some suitable foraging habitat exists onsite.
White-tailed kite (<i>Elanus leucurus</i>)	—/CFP/—	Prefers to nest in marshes next to deciduous forests.	<u>Low:</u> Some suitable foraging habitat exists onsite.
Yellow breasted chat (<i>Icteria virens</i>)	—/SSC/—	Dense shrubby growth, grasslands	<u>Low:</u> Some suitable grassland habitat exists onsite.
Yellow rail (<i>Coturnicops noveboracensis</i>)	—/SSC/—	Breeds in marshes, forages in wet meadows	<u>None:</u> No suitable marsh habitat exists onsite.
Yellow warbler (<i>Coturnicops noveboracensis</i>)	—/SSC/—	Riparian, shrubland, farmland	<u>Low:</u> Some suitable scrub habitat exists onsite.
MAMMALS			
American badger (<i>Taxidea taxus</i>)	—/SSC/—	Open grassland habitats with plenty of prey	<u>Very Low:</u> No suitable den habitat exists onsite.
Big free-tailed bat (<i>Nyctinomops macrotis</i>)	—/SSC/—	Forages over open areas, roosts in trees or caves	<u>Low:</u> Some suitable foraging habitat. Few suitable roosts in project area.
Fisher (<i>Pekania pennanti</i>)	—/SSC/—	Forages and breeds primarily in forests	<u>None:</u> No suitable forest habitat exists onsite.
Fringed myotis (<i>Myotis thysanodes</i>)	—/SSC/—	Roosts in caves or buildings and forages in open habitats	<u>Very Low:</u> Some suitable foraging habitat. Few suitable roosts in project area.
Hoary bat (<i>Lasiurus cinereus</i>)	—/SSC/—	Forages over open areas, roosts in trees or caves at high altitude	Low: Few suitable roosts in the project area. Primarily forages at high altitude. Nearest occurrence is a polygon that overlaps with the project parcel, that covers most of Long Valley, that was observed in 1933 (Appendix C).
Humboldt marten (<i>Martes caurina humboldtensis</i>)	—/SSC/—	Forages and breeds in forests, typically near streams	<u>None:</u> No suitable den or foraging habitat exists onsite.
Long-eared myotis (<i>Myotis evotis</i>)	—/SSC/—	Roosts in caves or buildings and forages in open habitats	<u>Low:</u> Some suitable foraging habitat. Few suitable roosts in project area.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Long-legged myotis (<i>Myotis volans</i>)	—/SSC/—	Roosts in caves or buildings and forages in open habitats	<u>Very Low</u> : Some foraging habitat. Few suitable roosts in project area.
North American porcupine (<i>Erethizon dorsatum</i>)	—/SSC/—	Require rocky areas or trees for dens, abundant open space for foraging	<u>Low</u> : Some suitable foraging habitat exists onsite.
Pallid bat (<i>Antrozous pallidus</i>)	—/SSC/—	Common in open dry habitats with rocky areas for roosting	<u>Low</u> : Some foraging habitat exists. Few suitable roosts in the project area. Nearest known occurrence is 3.9 miles SW of the parcel near Grizzly Creek.
Silver haired bat (<i>Lasionycteris noctivagans</i>)	—/SSC/—	Nocturnal, migratory, solitary, roosts in tree cavities	<u>Low</u> : Few suitable roosts in the project area. Primarily forages at high altitude. Nearest occurrence is a polygon that overlaps with the project parcel, that covers most of Long Valley, that was observed in 1933 (Appendix C).
Sonoma tree vole (<i>Arborimus pomo</i>)	—/SSC/—	Old growth Douglas fir canopies	<u>None</u> : No suitable forest habitat exists onsite.
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	—/SSC/—	Hibernate in mines or caves, roost in man made structures and caves	<u>Medium</u> : Few man-made structures exist suitable for roosting. Some habitat for foraging. Nearest known occurrence is 3.0 miles SW of the parcel near Wilkinson Creek.
Western red bat (<i>Lasiurus blossevillii</i>)	—/SSC/—	Forages over open areas, roosts in trees or caves	<u>Very Low</u> : Little suitable roosting habitat. Some suitable foraging habitat.
Yuma myotis (<i>Myotis yumanensis</i>)	—/SSC/—	Forages over open areas, roosts in trees or caves	<u>Very Low</u> : No suitable nesting habitat exists onsite. Some suitable foraging habitat exists onsite.
HABITATS			
Coastal & Valley Freshwater Marsh (CVFM)	—	—	<u>None</u> : No marsh habitat exists onsite.
Northern Basalt Flow Vernal Pool (NBFVP)	—	—	<u>None</u> : No basalt flow vernal pool habitat exists onsite.
Northern Hardpan Vernal Pool (NHVP)	—	—	<u>None</u> : No hardpan vernal pool habitat exists onsite.
Northern Vernal Pool (NVP)	—	—	<u>None</u> : No vernal pool habitat exists onsite.

Taxon	Status ¹ Fed/State/CNPS	Habitat	Potential to Occur Within the Project Area
Sycamore Alluvial Woodland (SAW)	—	—	<u>None</u> : No woodland habitat exists onsite.
Valley Needlegrass Grassland (VNG)	—	—	<u>Low</u> : Some grassland habitat exists onsite.
Valley Oak Woodland (VOW)	—	—	<u>None</u> : No valley oaks exist onsite.
Valley Sink Scrub (VSS)	—	—	<u>None</u> : No sink habitat exists onsite.

¹ Status:

Federal

FE = Federally Endangered Species

FT = Federally Threatened Species

State

SE = State Endangered Species

ST = State Threatened Species

SSC = California Species of Special Concern

CFP = California Fully Protected Species

CNPS (applies to plants only)

List 1B = plants considered rare, threatened, or endangered in California and elsewhere

List 2B = plants rare, threatened or endangered in California, but more common elsewhere

List 3 = plant is likely rare but more information is required

List 4 = plants of limited distribution

² USFWS

APPENDIX B: SPECIES ENCOUNTERED

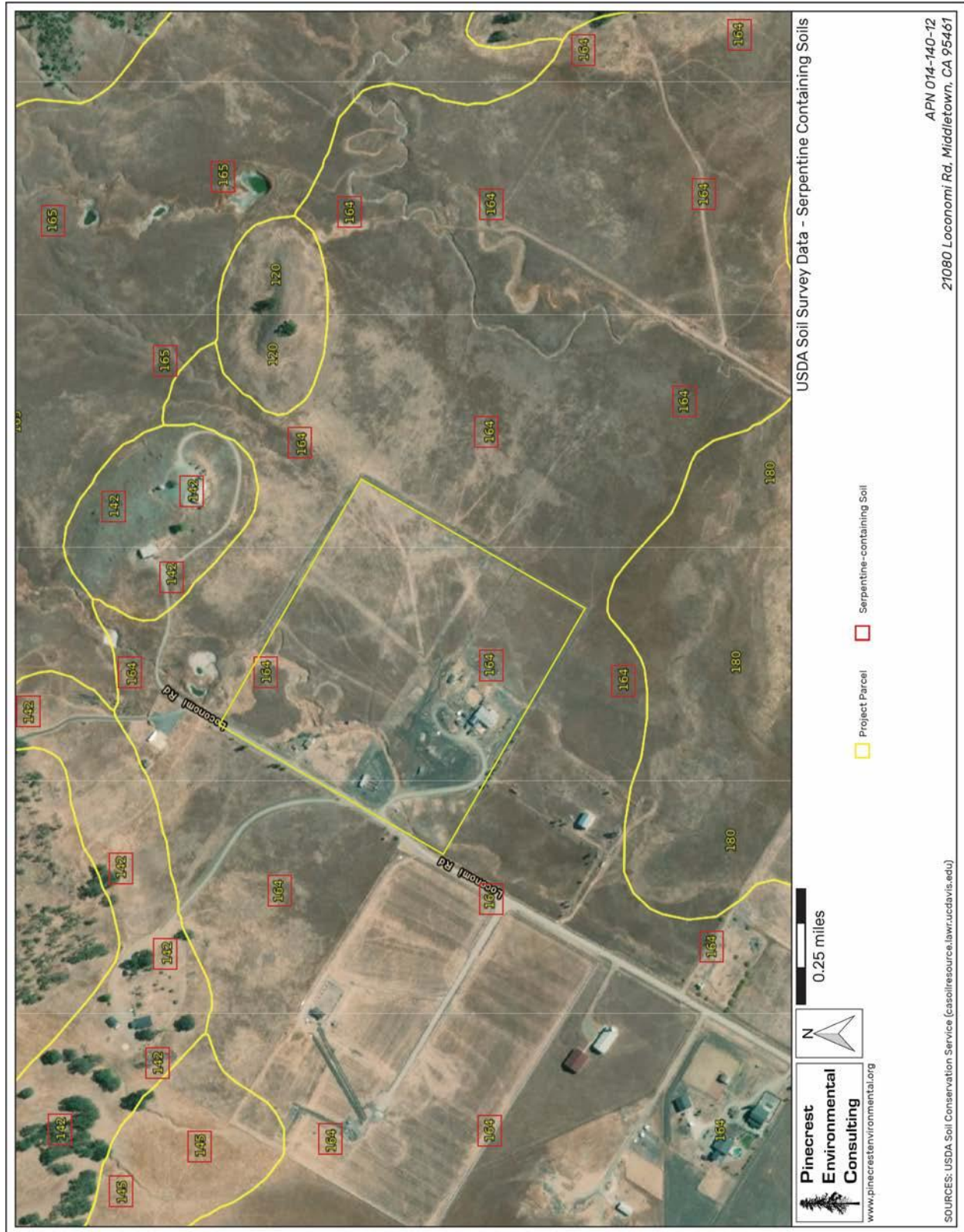
This list contains a list of all of the plants and animals observed onsite within the study area during the site visit. Any special-status species (SSS) are denoted in bold with an asterisk.

PLANTS
<i>Achillea millefolium</i>
<i>Acmispon americanus</i>
<i>Aira caryophylla</i>
<i>Avena barbata</i>
<i>Brassica nigra</i>
<i>Bromus diandrus</i>
<i>Bromus hordeaceus</i>
<i>Bromus tectorum</i>
<i>Camissonia contorta</i>
<i>Carduus pycnocephalus</i>
<i>Centaurea solstitialis</i>
<i>Chenopodium album</i>
<i>Chlorogalum pomeridianum</i>
<i>Cichorium intybus</i>
<i>Cirsium vulgare</i>
<i>Cladophora spp.</i>
<i>Croton setiger</i>
<i>Cuscuta pentagona</i>
<i>Cynosurus echinatus</i>
<i>Dipsacus fullonum</i>
<i>Eleocharis macrostachya</i>
<i>Elymus caput-medusae</i>
<i>Elymus elymoides</i>
<i>Erodium botrys</i>
<i>Eryngium aristulatum</i>
<i>Eschscholzia californica</i>
<i>Eucalyptus spp.</i>
<i>Festuca myuros</i>
<i>Festuca perennis</i>
<i>Geranium molle</i>
<i>Gnaphalium palustre</i>
<i>Grindelia camporum</i>
<i>Helianthus bolanderi</i>
<i>Helminthotheca echioides</i>
<i>Hemizonia congesta</i>
<i>Holocarpha virgata</i>
<i>Hypochaeris glabra</i>

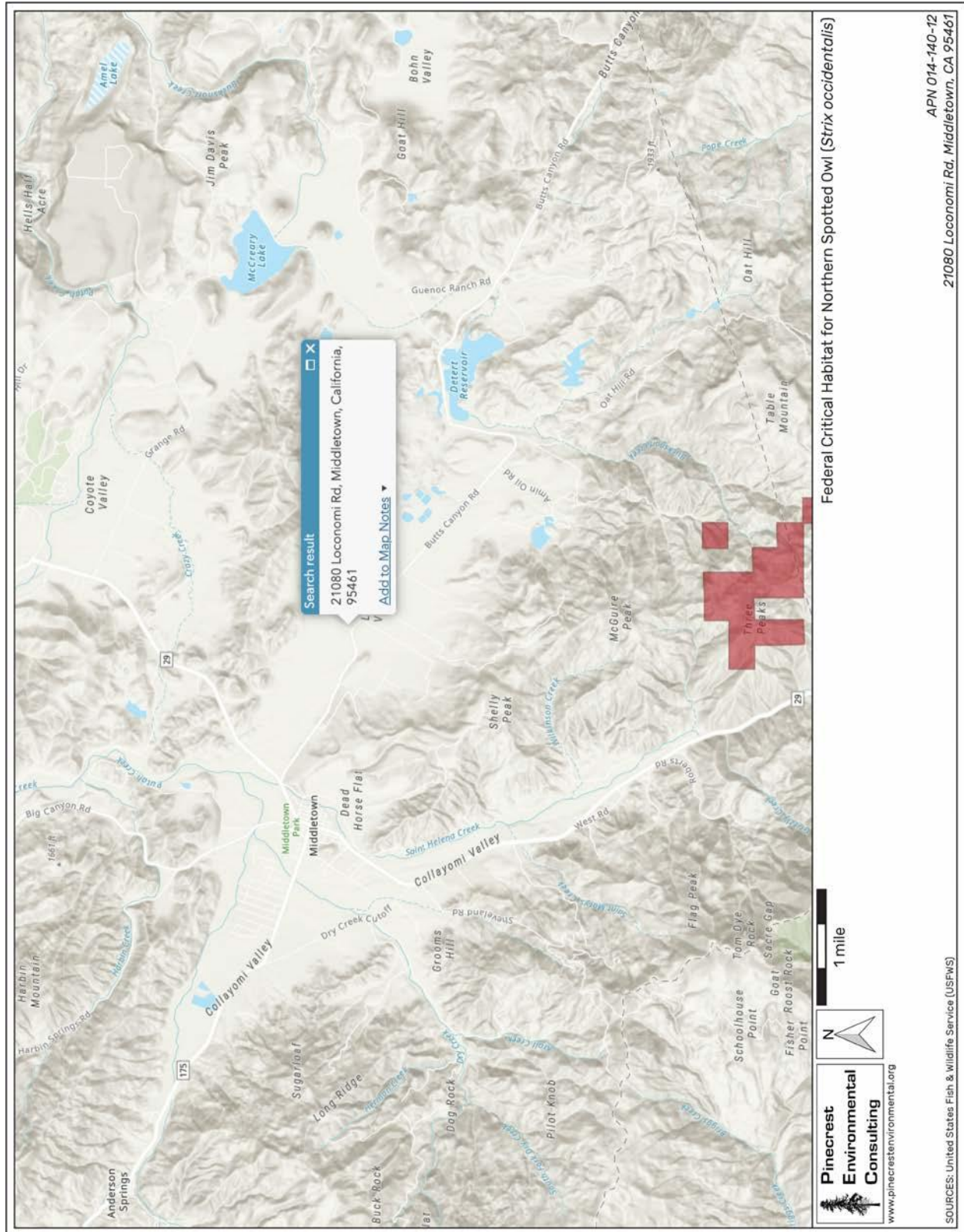
<i>Juncus effusus</i>
<i>Juncus oxymetris</i>
<i>Medicago polymorpha</i>
<i>Navarretia leucocephala</i>
<i>Plantago lanceolata</i>
<i>Polypogon monspeliensis</i>
<i>Ranunculus arvensis</i>
<i>Raphanus sativa</i>
<i>Rumex acetocella</i>
<i>Rumex crispus</i>
<i>Sonchus asper</i>
<i>Spergula rubra</i>
<i>Torilis nodosa</i>
<i>Tragopogon dubius</i>
<i>Trifolium hirtum</i>
<i>Trifolium incarnatum</i>
<i>Vicia sativa</i>

ANIMALS
<i>Cathartes aura</i>
<i>Corvus brachyrhynchos</i>
<i>Euphagus cyanocephalus</i>
<i>Lepus californicus</i>
<i>Melanerpes formicivorus</i>
<i>Otospermophilus beecheyi</i>
<i>Passerculus sandwichensis</i>
<i>Sceloporous occidentalis</i>
<i>Thomomys bottae</i>
<i>Zenaida macroura</i>

APPENDIX D: SERPENTINE SOILS MAP



APPENDIX E: REGIONAL CRITICAL HABITAT MAP



APPENDIX F: CANNABIS CULTIVATION BEST MANAGEMENT PRACTICES

Best management practices (BMPs) are designed to prevent, minimize, and control the discharge of waste and pollutants associated with site operations and maintenance for the aforementioned project. Many of these BMPs are considered enforceable conditions under State Water Resources Control Board *Cannabis* General Order No. WQ 2019-0001-DWQ.

F.1 CANNABIS CULTIVATION

- Pesticide and fertilizer storage facilities shall be located outside of the riparian corridor setbacks for structures.
- Pesticide and fertilizer storage facilities shall not be located within 100 feet of a wellhead, or within 50 feet of identified wetlands.
- Pesticide and fertilizer storage facilities shall be adequate to protect pesticide and fertilizer containers from the weather.
- Store all bags and boxes of pesticides and fertilizers off the ground on pallets or shelves.
- If the structure does not have an impermeable floor, store all liquid pesticides and fertilizers on shelves capable of containing spills or provide appropriate secondary containment.
- Routinely check for leaks and spills.
- Have spill cleanup kit onsite to be able to respond to any leaks or spills.
- Inspect planting stock for pests and diseases prior to planting.
- Avoid planting stock with pests and disease and notify the supplier of the planting stock of the infestation.
- Comply with all pesticide laws and regulations as enforced by the California Department of Pesticide Regulation and County Agricultural Commissioner.
- For pesticides with the signal word CAUTION that have listed food uses, comply with all pesticide label directions as they pertain to personal protective equipment, application method, and rate, environmental hazards, longest reentry intervals and greenhouse and indoor use directions.
- For all other pesticides, use must comply with all label requirements including site and crop restrictions.
- Prior to the use of any registered pesticide on *Cannabis*, Operator Identification Number should be obtained from the County Agricultural Commissioner if required.
- Submit monthly pesticide use reports to the County Agricultural Commissioner if required.
- Prior to applying fertilizers, evaluate irrigation water, soils, growth media, and plant tissue to optimize plant growth and avoid over fertilization.

- Apply fertilizers at label rates and no higher.
- Do not apply fertilizers in a way that will result in runoff that may contaminate ground or surface water or escape via airborne drift or fugitive dust.
- Observe riparian corridor setbacks for agricultural cultivation as applicable. These shall be maintained as “no touch” areas and demarcated with appropriate flagging.
- The removal of vegetation is prohibited within riparian setback areas.
- No equipment, vehicles, or other materials shall be stored in the riparian setback areas.
- Composting areas shall not be located in the riparian setback areas.
- Irrigation must be conducted in a manner that does not result in runoff from the cultivated area.
- Any water tanks or storage facilities must obtain permits from the local City or County planning department where required.
- The use of membrane based water bladders is prohibited.
- If using an irrigation system, inspect for and repair leaks prior to planting each year and continuously during the season.
- Irrigation systems shall be equipped with a backflow prevention devices and shutoff valves.
- Recycle or properly dispose of all plastic bags, containers, and irrigation materials.
- Properly dispose of green waste in a manner that does not discharge pollutants to a watercourse. This may be accomplished by composting, chipping, and/or shredding.
- The method of green waste disposal must be documented.
- Used growth medium (soil and other organic medium) shall be handled to minimize or prevent discharge of soil and residual nutrients and chemicals to watercourses. Proper disposal could include incorporating into garden beds, spreading on a stable surface and re-vegetating, storage in watertight dumpsters, or covering with tarps or plastic sheeting prior to proper disposal.
- The method of disposal of growth medium must be documented.
- Compost piles are to be located outside of riparian setbacks for agricultural cultivation and in a manner that will not discharge pollutants to a watercourse.
- If necessary, construct a berm or install fiber roll around compost area to prevent runoff or use straw wattles around perimeter.
- Cover compost piles with tarp or impermeable surface prior to fall rains and continuously throughout the rainy season.
- Leave a vegetative barrier along the property boundary and interior watercourses to act as a pollutant filter.
- Avoid soil disturbance between November 1 and April 15 and during times of active precipitation.
- All exposed and disturbed soil must be covered with a minimum of 2 inches of mulch, such as straw, bark, wood chips, etc., by November 15. Alternatively, establish a thick cover crop over disturbed areas composed of native species.
- Erosion control materials shall be available on site at all times in the form of straw, mulch, wattles, silt fencing, erosion control fabrics, sand bags, or other materials adequate to cover areas of disturbed soil or incipient erosion events.

- In the event of a forecast storm event likely to produce runoff, apply mulch, wattles, or other erosion prevention measures to the disturbed areas prior to rain event.
- Any grading or drainage conducted as part of site preparation shall have permits from local County or City agencies if required.

F.2 EROSION & SEDIMENT CONTROL

- Erosion control and sediment detention devices and materials shall be incorporated into the cleanup/restoration work design and installed prior to the end of project work and before the beginning of the rainy season or any predicted rain events.
- Any continuing, approved project work conducted after October 15 shall have erosion control measures completed and up-to-date.
- All erosion control measures shall be inspected daily during severe rain events.
- Erosion control materials shall be, at minimum, stored on-site at all times during approved project work between May 1 and October 15.
- Approved project work within the 5-year flood plain shall not begin until all temporary erosion controls (straw bales or silt fences that are effectively keyed-in) are installed downslope of cleanup/restoration activities.
- Native species appropriate to the local habitat shall be used for all revegetation purposes. Non-invasive, non-persistent grass species (e.g., barley grass) may be used for their temporary erosion control benefits to stabilize disturbed slopes and prevent exposure of disturbed soils to rainfall.
- Upon work completion, all exposed soil present in and around the cleanup/restoration sites shall be stabilized within 7 days.
- The disturbed area will be minimized at all times to only that which is essential for the completion of the project.
- Provide temporary cover over disturbed areas that are not currently being worked on.
- Heavy equipment shall not be used in flowing water.
- Use of heavy equipment shall be avoided or minimized in a channel bottom with rocky or cobbled substrate.
- Heavy equipment shall not introduce chemicals or foreign sediment to the channel (e.g., remove mud from tracks or cover channel work area with plastic sheeting prior to heavy equipment entry).
- When heavy equipment is used, any woody debris and stream bank or streambed vegetation disturbed shall be replaced to a pre-project density with native species appropriate to the site.
- When possible, existing ingress or egress points shall be used or work shall be performed remotely from the top of the creek banks.
- Divert runoff away from unprotected slopes or loose soils using a combination of mats, geotextiles, silt fencing, wattling, check dams, sediment basins, vegetated buffers, or rock armor.
- Deploy appropriate erosion control measures such as silt fencing or straw wattles around all temporary exposed piles or soil or surface disturbances.

- All temporary exposed piles or soil or surface disturbances shall have tarping and sand bags or other stabilization materials deployed in order to prevent discharge of sediments in the event of a rain or wind event.
- Geotechnical fabric shall be deployed on all exposed dirt surfaces with a slope of greater than 15% and staked in place during ground disturbing activities, and silt fencing deployed on slopes of greater than 15% where appropriate.
- Sand bags, straw bales, or other devices shall be placed at appropriate locations near and alongside the roadsides and swales in anticipation of large storm events.
- Bioswales and cultivation areas including parking areas shall be maintained free of trash including empty soil and pesticide or fertilizer containers.
- Locations of sediment sources shall be identified during rain events and mitigated where appropriate.
- Protect ditch inlets and outlets from erosion using rock armor.
- Silt fencing shall be installed downstream of rock piles, stockpiles, and temporary soils storage areas.
- Desilting or retention basins shall be installed if the capacity of the natural percolation exceeds the inputs during routine storm events.
- Sediment traps shall be used on all exposed driveway surfaces where natural vegetation is not able to be established.
- Exposed unvegetated surfaces will be graveled where appropriate.
- Rock placed for slope protection shall be the minimum necessary to avoid erosion, and shall be part of a design that provides for native plant revegetation and minimizes bank armoring.
- Soil exposed as a result of project work, soil above rock riprap, and interstitial spaces between rocks shall be revegetated with native vegetation by live planting, seed casting, or hydroseeding prior to the rainy season of the year work is completed.
- Avoidance of earthwork on steep slopes and minimization of cut/fill volumes, combined with proper compaction, shall occur to ensure the area is resilient to issues associated with seismic events and mass wasting. If cracks are observed, or new construction is anticipated, consultation with a qualified professional is recommended.
- Culvert fill slopes shall be constructed at a 2:1 slope or shall be armored with rock.
- If it is necessary to conduct work in or near a live stream, the work space shall be isolated to avoid project activities in flowing water.
- Any spoils associated with site maintenance shall be placed in a stable location where it cannot enter a watercourse.
- Sidecasting shall be minimized and shall be avoided on unstable areas or where it has the potential to enter a watercourse.
- Entrance to the project site shall be maintained in a condition that will prevent tracking or flowing of sediment into the public right-of-way.
- All sediment spilled, dropped, washed, or tracked onto the public right-of-ways shall be removed immediately.
- When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-ways.

- When wheel washing is required, it shall be done in an area stabilized with crushed stone that drains into a sediment trap fitted with appropriate erosion control measures.
- To control surface water runoff in and around cultivation areas use fiber rolls or wattling and stake appropriately and perpendicular to the flow path.
- Cover crops should be utilized on all exposed slopes that are not able to be protected by other means.
- Cover crops should be native species as described in the associated biological resources report.
- Rip compacted soils prior to placing spoils to prevent the potential for ponding under the spoils that could result in spoil site failure and subsequent sedimentation.
- Compact and contour stored spoils to mimic the natural slope contours and drainage patterns to reduce the potential for fill saturation and failure.
- Ensure that spoil materials are free of woody debris, and not placed on top of brush, logs or trees.
- Inspect all roads and culverts regularly for blockages.

F.3 WATER USE & POLLUTION

- Ensure that all appropriate water rights permits are filed with the State Water Resources Control Board.
- Notify the California Department of Fish and Wildlife by submitting a Lake and Streambed Alteration (LSA) notification package if the proposed activities involve substantial diversion from or alteration of the bed or bank of a stream or other waterbody.
- Ensure that all water storage features are permitted from the Department of Water Rights if necessary.
- All refueling and pesticide and chemical storage and transfer shall occur greater than 100 feet away from any swales, creeks, or natural areas.
- All refueling and pesticide and chemical storage and transfer shall occur on top of an impermeable metal or other fabric mat that is no less than 2 inches high on all sides and capable of completely containing any spillage.
- Concrete truck and other vehicles shall not be washed out in natural areas or directly onto soil and shall be washed out into a metal or other impermeable basin and disposed of properly such that no water is discharged to the soil.
- All waste shall be kept in plastic drums with tight fitting lids so that water is not able to make contact with the contents and potentially leach to the environment.
- All pesticide sprays shall occur on windless nights for outdoor facilities.
- Chemical or fertilizer wastes shall never be disposed of into swales or creeks and shall be contained inside closed-roof facilities and designated with appropriate labeling until it is possible to dispose of properly.
- Septic leach fields and graywater mulch fields shall be maintained free of large vegetation and not used for aboveground storage that may impact their proper functioning.

- Chemical contamination (fuel, grease, oil, hydraulic fluid, solvents, etc.) of water and soils is prohibited during routine equipment operation and maintenance.
- The use or storage of petroleum-powered equipment shall be accomplished in a manner that prevents the potential release of petroleum materials into waters of the state (Fish and Game Code 5650).
- Schedule excavation and grading activities for dry weather periods.
- Designate a contained area for equipment storage, short-term maintenance, and refueling. Ensure it is located at least 50 feet from waterbodies.
- Inspect vehicles for leaks and repair immediately.
- Clean up leaks, drips and other spills immediately to avoid soil or groundwater contamination.
- Conduct major vehicle maintenance and washing offsite.
- Ensure that all spent fluids including motor oil, radiator coolant, or other fluids and used vehicle batteries are collected, stored, and recycled as hazardous waste offsite.
- Ensure that all construction debris is taken to appropriate landfills and all sediment disposed of in upland areas or offsite, beyond the 100-year floodplain.
- Use dry cleanup methods (e.g., absorbent materials, cat litter, and/or rags) whenever possible. If necessary for dust control, use only a minimal amount of water.
- Sweep up spilled dry materials immediately.
- Separate organic material (e.g., roots, stumps) from the dirt fill and store separately. Place this material in long-term, upland storage sites, as it cannot be used for fill.
- Spoils shall not be placed or stored in locations where soils are wet or unstable, or where slope stability could be adversely affected.
- Do not locate spoil piles in or immediately adjacent to wetlands and watercourses.
- Store spoil piles in a manner (e.g. cover pile with plastic tarps and surround base of pile with straw wattle) or location that would not result in any runoff from the spoil pile ending up in wetlands and watercourses.
- Keep temporary disposal sites out of wetlands, adjacent riparian corridors, and ordinary high water areas as well as high risk zones, such as 100-year floodplain and unstable slopes.
- Conduct operations on a size and scale that considers available water sources and other water use and users in the planning watershed.
- Implement water conservation measures such as rainwater catchment systems, drip irrigation, mulching, or irrigation water recycling where possible.
- Hauled water utilized for irrigation shall be documented via receipt or similar, and show the date, name, and license plate of the water hauler, and the quantity of water purchased.
- If using a water storage tank, do not locate the tank in a flood plain or next to equipment that generates heat. Locate the tank so it is easy to install, access, and maintain.
- Vertical tanks should be installed according to manufacturer's specifications and placed on firm, compacted soil that is free of rocks/sharp objects and capable of bearing the weight of the tank and its maximum contents.
- Install float valves on tanks to prevent them from overflowing.

- Place proper lining or sealing in ponds to prevent water loss.

F.4 ROAD MAINTENANCE & GENERAL CONSTRUCTION

- Always limit work to the appropriate work date windows considering wet weather, migratory bird and other biological and environmental constraints that may be placed on the project.
- Proper design and location of roads and other features is critical to ensuring that a road or other feature be adequately drained and is best accomplished through consultation with a qualified professional.
- Placement of temporary access roads, staging areas, and other facilities shall avoid or minimize disturbance to habitat.
- If inspection identifies surface rills or ruts, then surfacing and drainage likely needs maintenance. Consultation should be made with a licensed professional to design appropriate erosion control strategies.
- Design of roads should allow for sheet flow of water and use water bars and rolling dips to break up slope length.
- Vehicle speed shall be kept to a maximum of 10 mph while onsite to minimize dust generation.
- All unvegetated and unpaved roadways and vehicle turnarounds shall be graveled to a depth of not less than 1" in order to prevent dust and sediment entrainment.
- Applicant will use geotechnical fabric or similar materials on exposed slopes, and distribute weed-free straw mulch wherever possible on exposed surfaces on the perimeter of all graded roads and graveled areas.
- Roads and the berms alongside all roads shall be maintained free of headcuts, gullies, stutter bumps, and other erosion features capable of discharging sediment to adjacent grassland areas.
- Roads will be graveled with clean rock whenever required to prevent dust and sediment erosion during the wet season.
- Whenever possible, road maintenance activities shall be performed from May 1 to October 15.
- Work performed outside of this window should take extra precautions for winter weather erosion control prevention beyond that which is described in this Plan.
- A 48 hour advance forecast for rain shall trigger a temporary cessation of work, and all soils piles will need to be covered and secured with sandbags or other materials.
- Placement of temporary access roads, staging areas, and other facilities shall avoid or minimize disturbance to habitat.
- Whenever feasible, finished grades shall not exceed 1.5:1 side slopes. In circumstances where final grades cannot achieve 1.5:1 slope, additional erosion control or stabilization methods shall be applied as appropriate for the project location.
- Spoils and excavated material not used during project activities shall be removed and placed outside of 100-year floodplains.
- Upon completion of grading, slope protection of all disturbed sites shall be provided prior to the rainy season through a combination of permanent vegetative treatment, mulching, geotextiles, and/or rock, or equivalent.

- Position vehicles and other apparatus so as to not block emergency vehicle access.
- After construction is complete, all storm drain systems and culverts shall be inspected and cleared of accumulated sediment and debris.
- Sediment barriers including wattles and silt fencing should be checked for sediment accumulation following each significant rainfall and sediment removed or the feature replaced as needed.
- Road drainage shall be discharged to a stable location away from a watercourse.
- Use sediment control devices, such as check dams, sand/gravel bag barriers, and other acceptable techniques, when it is neither practical nor environmentally sound to disperse ditch water immediately before the ditch reaches a stream.
- Within areas with potential to discharge to a watercourse (i.e. within riparian areas of at least 200 feet of a stream) road surface drainage shall be filtered through vegetation, slash, or other appropriate material or settled into a depression with an outlet with adequate drainage.

F.5 SWALE & VEGETATION MANAGEMENT

- The work area shall be restored to pre-project work condition or better.
- Any stream bank area left barren of vegetation as a result of cleanup/restoration activities shall be stabilized by seeding, replanting, or other means with native trees, shrubs, and/or grasses appropriate to the site prior to the rainy season in the year work was conducted.
- Ensure that vegetated swales are properly formed, allow moderate velocity water passage without causing sediment entrainment, and are otherwise functioning properly.
- Create and expand vegetated bioswales where necessary, should additional construction or road maintenance be required, in order to maintain flow without scour.
- All bioswales and other drainage features requiring revegetation will be seeded with native vegetation and lawns and hedgerows maintained in good health and watered in dry years.
- Vegetation including grasses shall be mowed as necessary to create fire breaks and to prevent the accumulation of fuels that would be able to sustain a ground fire.
- All vegetation shall be surveyed on foot once a year by staff and new outbreaks of any invasive weeds identified by the California Invasive Plant Council as noxious or invasive to be removed by the owner or qualified landscaping professionals.
- Channels and swales that show evidence of overland flow and scour (e.g. bare of vegetation) shall be seeded with native grasses such as *Stipa pulchra*, *Hordeum brachyantherum*, *Elymus glaucus*, and *Bromus carinatus*, and kept vegetated at all times.
- If shrubs and non-woody riparian vegetation are disturbed, they shall be replaced with similar native species appropriate to the site.
- Disturbance to native shrubs, woody perennials or tree removal on the streambank or in the stream channel shall be avoided or minimized.
- If riparian trees over six inches dbh (diameter at breast height) are to be removed, they shall be replaced by native species appropriate to the site at a 3:1 ratio.
- Where physical constraints in the project area prevent replanting at a 3:1 ratio and canopy cover is sufficient for habitat needs, replanting may occur at a lesser replacement ratio.

- Vegetation planting for slope protection purposes shall be timed to require as little irrigation as possible for ensuring establishment by the commencement of the rainy season.
- The spread or introduction of exotic plant species shall be avoided to the maximum extent possible by avoiding areas with established native vegetation during cleanup/restoration activities, restoring disturbed areas with appropriate native species, and post-project monitoring and control of exotic species.
- Removal of invasive exotic species after construction activities is strongly recommended. Mechanical removal (hand tools, weed whacking, hand pulling) of exotics shall be done in preparation for establishment of native plantings.
- Where permanent soil stabilization is required a locally-appropriate mix of native grass species shall be used such as a mix containing *Nassella pulchra*, *Hordeum brachyantherum*, *Elymus glaucus*, and *Bromus carinatus* or as described in the site's Biological Resources Assessment.
- Entire cultivation site shall be seeded and maintained as a permanent non-tilled cover crop during non-usage times. Straw mulch shall be used where native seeding is not practicable.
- Use mulches (e.g. wood chips or bark) in cultivation areas that do not have ground cover to prevent erosion and minimize evaporative loss.
- Mulch shall be applied at a rate of 4000 lbs / acre and seeding shall be applied to achieve 70% cover in the first year or approximately 200 lbs / acre.
- Annual inspections for the purpose of assessing the survival and growth of revegetated areas and the presence of exposed soil shall be conducted for three years following project work.
- Dischargers and/or their consultant(s) or third party representative(s) shall note the presence of native/non-native vegetation and extent of exposed soil, and take photographs during each inspection.
- Dischargers and/or their consultant(s) or third party representative(s) shall provide the location of each work site, pre- and post-project work photos, diagram of all areas revegetated and the planting methods and plants used, and an assessment of the success of the revegetation program in the annual monitoring report as required under relevant state and local water board regulations.

F.6 IRRIGATION & CULTIVATION MANAGEMENT

- Cultivation-related waste shall be stored in a place where it will not enter a stream.
- Soil bags and other garbage shall be collected, contained, and disposed of at an appropriate facility, including for recycling where available.
- Pots shall be collected and stored where they will not enter a waterway or create a nuisance.
- Plant waste and other compostable materials be stored (or composted, as applicable) at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwaters.
- Imported soil for cultivation purposes shall be minimized. In the event that containers (e.g. grow bags or grow pots) are used for cultivation, reuse of soil shall be maximized to the extent feasible.

- Spent growth medium (i.e. soil and other organic medium) shall be handled to minimize discharge of soil and residual nutrients and chemicals to watercourses. Proper handling of spent soil could include incorporating into garden beds, spreading on a stable surface and revegetation, storage in watertight dumpsters, covering with tarps or plastic sheeting prior to proper disposal.
- Trash containers of sufficient size and number shall be provided and properly serviced to contain the solid waste generated by the project.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Use lined bins or dumpsters to reduce leaking of liquid waste. Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash. Consider using refuse containers that are bear-proof and/or secure from wildlife.
- Refuse shall be removed from the site on a frequency that does not result in nuisance conditions, transported in a manner that they remain contained during transport, and the contents shall be disposed of properly at a proper disposal facility.
- Ensure that human waste disposal systems do not pose a threat to surface or ground water quality or create a nuisance. Onsite treatment systems should follow applicable County ordinances for human waste disposal requirements, consistent with the applicable tier under the State Water Resources Control Board Onsite Waste Treatment System Policy.
- Install buffer strips, bioswales, or vegetation downslope of cultivation areas to filter runoff of chemicals from irrigation.
- Irrigate at rates to avoid or minimize runoff.
- Regularly inspect and repair leaks in mains and laterals, in irrigation connections, or at the ends of drip tape and feeder lines.
- Design irrigation system to include redundancy (i.e., safety valves) in the event that leaks occur, so that waste of water is prevented and minimized.
- Recapture and reuse irrigation runoff (tailwater) where possible, through passive (gravity-fed) or active (pumped) means.
- Construct retention basins for tailwater infiltration; percolation medium may be used to reduce pollutant concentration in infiltrated water. Constructed treatment wetlands may also be effective at reducing nutrient loads in water.
- Ensure that drainage and/or infiltration areas are located away from unstable or potentially unstable features.
- Regularly replace worn, outdated or inefficient irrigation system components and equipment.
- Leave a vegetative barrier along the property boundary and interior watercourses to act as a pollutant filter.
- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Evaluate irrigation water, soils, growth media, and plant tissue to optimize plant growth and avoid over-fertilization.
- All chemicals shall be stored in a manner, method, and location that ensures that there is no threat of discharge to waters of the State.

- Products shall be labeled properly and applied according to the label.
- Use integrated pest management strategies that apply pesticides only to the area of need, only when there is an economic benefit to the grower, and at times when runoff losses are least likely.
- Periodically calibrate pesticide application equipment.
- Use anti-backflow devices on water supply hoses, and other mixing/loading practices designed to reduce the risk of runoff and spills.
- Petroleum products shall be stored with a secondary containment system such as a pan or a tub
- Throughout the rainy season, any temporary containment facility shall have a permanent cover and side-wind protection, or be covered during non-working days and prior to and during rain events.
- Materials shall be stored in their original containers and the original product labels shall be maintained in place in a legible condition. Damaged or otherwise illegible labels shall be replaced immediately.
- Bagged and boxed materials shall be stored on pallets and shall not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials shall be covered during non-working days and prior to rain events.
- Have proper chemical and fertilizer storage instructions posted at all times in an open and conspicuous location.
- Prepare and keep a spill prevention and cleanup plan onsite when dealing with any hazardous materials.
- Keep ample supply of appropriate spill clean-up material near storage areas.
- Plant cover crops to boost soil fertility, improve soil texture, and protect from storm caused sediment runoff.

F.7 SPECIAL-STATUS SPECIES AVOIDANCE MEASURES

- All employees and contractors including one-time contractors and day-laborers should be distributed cards with visual identifications of all of the aforementioned special-status species, including both male and female, and juvenile and adult forms, and be briefed on all of the following AMMs contained herein. Species cards may be obtained from PEC on request.
- Observation of any of the aforementioned SSS onsite shall result in immediate stoppage of all work and notification of PEC and/or CDFW.
- All animals observed onsite shall be allowed to leave the premises voluntarily without being harassed.
- Vehicle speeds should be limited to 5 mph all year, with 3 mph limit during amphibian breeding and migration season from October 1-June 1, and for breeding bird season from February 1-September 1.
- Avoid ground disturbance including trenching, grading, or road scraping to a depth of greater than 10" without first clearing the site from a qualified biologist during estivation season, June 1

November 30, to avoid disturbing estivating amphibians.

- All roadways and culverts should be inspected once before major rain events and once after to ensure that all erosion control materials are effective and not discharging sediment to any jurisdictional watercourses.
- All containers and other vessels left outside unattended should be checked before use to ensure that no animals are inside.
- Vessels including buckets should be turned over on their sides to allow animals to escape.
- No holes greater than 6" deep should be left exposed and uncovered to avoid making "pitfall traps" into which animals can enter but cannot escape. If holes such as post holes must be left for more than 24 hours they should be checked daily to ensure no animals are inside.
- Only native woody species should be planted wherever revegetation is required such as along the sides of roadcuts and culvert abutments.
- No aerial wires or lines should be permitted that may impede the flight path of nesting birds.
- No upward pointed lights should be permitted during anytime during the year, and ambient outdoor night time lights should be prohibited during the breeding bird period from February 1 to September 1.
- Use of rodenticides should not be used under any circumstances due to the hazard of secondary ingestion by raptors.

APPENDIX G: STREAM CLASSIFICATION CRITERIA

The following stream classification criteria were copied from the California Department of Forestry & Fire Protection *Forest Practice Rules* (CALFIRE 2017) and is widely used by many state and local agencies. Most state and local jurisdictions require setbacks of 50, 100, and 150 feet from Class III, II, and I streams, respectively, although greater setbacks may be required in some jurisdictions.

Watercourse – a natural or artificial channel through which water flows.

- Perennial watercourse (Class I*):
 1. In the absence of diversions, water is flowing for more than nine months during a typical year.
 2. Fish always or seasonally present onsite or includes habitat to sustain fish migration and spawning, and/or
 3. Spring: an area where there is concentrated discharge of ground water that flows at the ground surface. A spring may flow any part of the year. For the purpose of this Policy, a spring does not have a defined bed and banks.
- Intermittent watercourse (Class II*):
 1. In the absence of diversions, water is flowing for three to nine months during a typical year,
 2. Provides aquatic habitat for non-fish aquatic species,
 3. Fish always or seasonally present within 1,000 feet downstream, and/or
 4. Water is flowing less than three months during a typical year and the stream supports riparian vegetation.
- Ephemeral watercourse (Class III*): In the absence of diversion, water is flowing less than three months during a typical year and the stream does not support riparian vegetation or aquatic life. Ephemeral watercourses typically have water flowing for a short duration after precipitation events or snowmelt and show evidence of being capable of sediment transport.
- Other watercourses (Class IV*): Class IV watercourses do not support native aquatic species and are man-made, provide established domestic, agricultural, hydroelectric supply, or other beneficial use.

*Except where more restrictive, stream class designations are equivalent to the Forest Practice Rules Water Course and Lake Protection Zone definitions (California Code of Regulations, title 14, Chapter 4. Forest Practice Rules, Subchapters 4, 5, and 6 Forest District Rules, Article 6 Water Course and Lake Protection).



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MEMORANDUM

Date: May 1, 2021
To: Michael Colbruno
From: Dr. Christopher T. DiVittorio, Pinecrest Environmental Consulting, Inc.
Subject: Results of early/mid season special-status plant survey at Lake County APN 014-140-12

Dear Michael Colbruno,

This memorandum details the findings of a mid/late spring special-status plant survey for the above-referenced property. This memorandum is intended as an addendum to the Biological Assessment (BA) that was previously prepared for the property, to satisfy the second mid/late spring survey required by the County of Lake.

On April 20, 2021 the site was visited by PEC botanists Dr. Christopher DiVittorio and Dr. Zoya Akulova, who surveyed the entirety of the project area using methods as specified in the California Department of Fish & Wildlife (CDFW) publication titled *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*, dated March 20, 2018.

A description of natural habitats, jurisdictional watercourses, potential wetlands, and special-status species known from the vicinity can also be found in the original BA. Provided here is an updated vegetation description and species list of species that were identifiable in the mid/late spring time period. The season was unusually short thus late season plants were flowering at the time of the visit and all species were identifiable.

Methods

A botanical field survey was conducted starting at 10:00 AM and involved walking the entire project area on foot in parallel lines approximately 15 feet apart, identifying every species that was flowering, and making note of any species that were past flowering or that had not yet flowered. Table 1 contains a list of all herbaceous and woody species observed in the vicinity of the project area that were identifiable at this time. Voucher specimens were taken of any species that required identification in the laboratory. All terminology follows currently accepted nomenclature as described in *The Jepson Manual* (2012).

Results & Recommendations

All of the plant species identified at the time of the survey are presented in Table 1. One special-status plant species was positively identified in the project area, *Astragalus breweri* (Brewer's milk-vetch), a perennial plant in the Fabaceae family. This species is not listed as Threatened or Endangered by the State or Federal governments, but is included on California Native Plant Society List 4.2, plants with limited distributions.

This plant was previously found onsite and entered into the CNDDDB database so this occurrence is not surprising. The extent of the population is shown in Figure 1.

Our recommendation is to avoid the areas shown in Figure 1 and to locate cultivation in the eastern portion of the property. This should avoid all wetlands and the populations of this species.

If individuals of this species are found growing in the project areas at any time in the future, topsoil should be excavated to a depth of 6 inches and the soil distributed in an area of the parcel that is not going to be disturbed.

Sincerely,



Christopher DiVittorio, PhD
President, PEC
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Table 1: List of plant species observed onsite during the early-spring plant survey. Plant species that were unable to be identified to species are denoted with “?” or “.sp” and will be revisited at a later date.

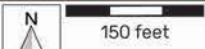
Scientific name	Common name	Native
<i>Achyrachaena mollis</i>	Blow-wives	yes
<i>Acmispon wrangelianus</i>	Chilean trefoil	yes
<i>Agoseris heterophylla</i> var. <i>cryptopleura</i>	Mountain dandelion	yes
<i>Agoseris heterophylla</i> var. <i>heterophylla</i>	Annual agoseris	yes
<i>Astragalus breweri</i> (CNPS List 4.2)	Brewer’s milk vetch	yes
<i>Avena barbata</i>	Slender wild oats	no
<i>Bromus hordeaceus</i>	Soft chess	no
<i>Capsella bursa-pastoris</i>	Shepherd’s purse	no
<i>Castilleja rubicundula</i> ssp. <i>lithospermoides</i>	Cream sacs	yes
<i>Centaurea solstitialis</i>	Yellow star thistle	no
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	Soap plant	yes
<i>Eleocharis macrostachya</i>	Spike rush	yes
<i>Elymus caput-medusae</i>	Medusa-head	no
<i>Elymus multisetus</i>	Big squirreltail grass	yes
<i>Epilobium brachycarpum</i>	Narrowleaf willowherb	yes
<i>Erodium cicutarium</i>	Redstem filaree	no
<i>Eryngium</i> sp.	Coyote thistle	yes
<i>Euphorbia peplus</i>	Petty spurge	no
<i>Festuca</i> sp.	Fescue	no
<i>Grindelia</i> sp.	Gum plant	yes
<i>Helianthus</i> sp.	Sunflower	yes
<i>Hordeum brachyantherum</i>	Meadow barley	yes
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	no
<i>Juncus</i> sp.	Iris-leaf rush	yes
<i>Lactuca saligna</i>	Willowleaf lettuce	no
<i>Lasthenia californica</i>	California goldfields	yes
<i>Lepidium nitidum</i>	Shining peppergrass	yes
<i>Leptosiphon parviflorus</i>	Common leptosiphon	yes
<i>Lupinus bicolor</i>	Miniature lupine	yes
<i>Lupinus luteolus</i>	Butter lupine	yes
<i>Malva nicaeensis</i>	Bull mallow	no
<i>Matricaria discoidea</i>	Pineapple weed	no
<i>Medicago polymorpha</i>	California burclover	no
<i>Melilotus indicus</i>	Annual yellow sweetclover	no
<i>Mentha pulegium</i>	Pennyroyal	no
<i>Microseris douglasii</i> ssp. <i>douglasii</i>	Douglas’ microseris	yes
<i>Opuntia ficus-indica</i> (planted)	Prickly pear	no
<i>Poa secunda</i>	One sided bluegrass	yes
<i>Pogogyne serpylloides</i>	Thyme leaf mesa mint	yes
<i>Ranunculus occidentalis</i>	Western buttercup	yes
<i>Sidalcea diploscypha</i>	Fringed checkerbloom	yes

<i>Sisyrinchium bellum</i>	Blue-eyed grass	yes
<i>Spergularia rubra</i>	Red sand-spurrey	no
<i>Toxicoscordion fremontii</i>	Fremont's star lily	yes
<i>Trifolium bifidum</i>	Notch leaf clover	yes
<i>Trifolium dichotomum</i>	Branched Indian clover	yes
<i>Trifolium willdenovii</i>	Tomcat clover	yes
<i>Triphysaria versicolor</i> ssp. <i>faucibarbata</i>	Yellow owl's clover	yes
<i>Vicia villosa</i>	Hairy vetch	no



FIGURE 1


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 www.pinecrestenvironmental.org



- | | |
|---|--|
|  Property Line |  Class II Watercourse |
|  Residence / Outbuilding |  Class III Watercourse |
|  Gate |  Potential Wetland |
|  Dirt Road |  Groundwater Well |
|  Culvert |  <i>Astragalus breweri</i> |
| |  Cultivation Area [lowest impact] |

SOURCES: Google Earth; PEC Inc.

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