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LE COLLINE VINEYARD PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT

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PRE-HARVEST INSPECTION AND NOTICE OF PREPARATION COMMENTS

APPENDIX A

Pre-Harvest Inspection Comment Letters

State of California
Department of Fish and Wildlife

M e m o r a n d u m

Date: September 15, 2016

To: Forest Practice Manager
North Coast Region Office
California Department of Forestry and Fire Protection (CAL FIRE)
135 Ridgway Avenue
Santa Rosa, CA 95401
SantaRosaReviewTeam@fire.ca.gov

From: Mr. Scott Wilson, Regional Manager
California Department of Fish and Wildlife-Bay Delta Region, 7329 Silverado Trail, Napa, CA 94558

Subject: California Department of Fish and Wildlife Pre-Harvest Inspection Report for Timber Harvesting Plan/Timber Conversion Plan (THP/TCP) 1-16-079 NAP "Le Colline"

PROJECT DESCRIPTION

Timberland Owner/Plan Submitter:	Le Colline LLC and Cold Springs LLC
County and General Project Location:	Napa; 0.5 miles south of the town of Angwin, CA
7.5 Minute Quadrangle(s):	St. Helena
CALWATER Planning Watershed:	Conn Creek (2206.500305)
Legal Description:	Mt. Diablo Base and Meridian; T8N, R5W, Section 8; Assessor Parcel Numbers 024-300-070, 024-300-071, 024-300-072, and 024-340-001
Total Area:	36.0 acres
Silviculture Treatments:	Conversion (32.0 acres), Non-Timberland Area (4.0 acres)
Winter Operations:	Yes, per winter operations plan
Erosion Hazard Rating:	Moderate
Harvest Methods:	Ground Based • Tractor, including end/long lining • Rubber tired skidder, Forwarder
Proposed In-Lieu Practices and Exceptions:	None proposed
Lake and Streambed Alteration Agreement:	None proposed

Pre-harvest Inspection (PHI) Date and Attendees:	August 29, 2016 • Scott Butler, Registered Professional Forester (RPF) • Steve Smith, RPF • Kimberley Sone, CAL FIRE • Jim Wright, Cal FIRE • Dan Stapleton, Cal FIRE • Kevin Brown, Regional Water Quality Control Board • Dave Longstreth, California Geologic Society (CGS) • Kevin Doherty, CGS • Jeanne Wetzel Chinn, California Department of Fish and Wildlife (CDFW) • Amanda Culpepper, CDFW • Angela Moran, CDFW • Brian Bordona, County of Napa Planning Department • Wesley Salter, County of Napa Planning Department • Dave DiCesaris, Landowner • Analise Rivero, Analytical Environmental Services (AES) • Ali Middlekauff, AES • Diane Wilson, Vineyard Engineering Consultant • Drew Aspegren, Vineyard Engineering Consultant

This report includes CDFW's recommendations based on the review of the 1-16-079 NAP Le Colline Timber Harvest Plan/Timber Conversion Plan (THP/TCP) and participation in the pre-harvest inspection (PHI). These recommendations are focused on avoiding or minimizing the proposed project's effects on fish, wildlife, and botanical resources. CDFW's recommendations do not necessarily reflect the opinion of other government agencies. CDFW's participation in the PHI was a reconnaissance level survey without quantitative sampling of fish, wildlife, aquatic invertebrates, rare and endangered plants, sediment, large woody debris, snags, canopy, vegetation composition, or stream flow.

CAL FIRE, acting as lead agency, is preparing a draft Environmental Impact Report (draft EIR) to analyze the potential environmental impacts of the Le Colline Vineyard Project under the California Environmental Quality Act (CEQA). CDFW reviewed the Notice of Preparation (NOP) and Administrative Draft EIR for the proposed project and submitted a comment letter dated May 10, 2016. The focus of this PHI report is on avoiding or minimizing impacts to fish and wildlife resources from proposed timber harvest activities.

DESCRIPTION AND SETTING

The THP/TCP is located on an 88-acre property within Napa County, approximately 0.5 miles south of the Town of Angwin (Figure 1). Under the THP, the project proposes to harvest 32 acres of timberland and clear 4 acres of existing grass and brush (non-timberland). Proposed future land uses, which will be analyzed under the draft EIR, include vineyard blocks, internal farm avenues and space for vineyard maintenance. The net vineyard area would be approximately 28 acres. The remaining 52 acres of the property would not be impacted by the project.

The THP area includes various stages of Douglas-Fir Forest Alliance developing over Mixed Manzanita-Chamise Chaparral Alliance, a dense stand of Douglas-Fir Forest Alliance, Mixed Oak Alliance, California annual grassland, and a rock outcrop. Several large ponderosa pines

are scattered throughout the southern portions of the property. Vegetation ranges from 20 to 120 years old, with evidence of past fire exposure in older vegetation types. Density and plant succession vary significantly, and plant succession is evident as conifers grow and capture the light. In the northern portion of the plan area, vegetation conditions show signs of stress as a result of shallow soil and drought, and the southern portion of the plan area has healthier vegetation where streams provide moisture. Elevations within the THP/TCP range from 1,450 to 1,700 feet above sea level with slopes ranging from 2 to 50 percent, and the project area slopes are primarily under 30%.

The THP/TCP is within the Conn Creek Watershed, a sub-watershed of the Napa River Watershed, and an Anadromous Salmonid Protection (ASP) watershed, which supports anadromous salmonids. Conn Creek is a Class I watercourse that drains to Lake Hennessey and the Napa River. The Napa River is listed as impaired under the Clean Water Act Section 303(d) due to pathogens, sediment and nutrients. The project area is located approximately 5.5 miles above Conn Dam and Lake Hennessey. Conn Dam is a total barrier for anadromy precluding access for salmonids to Lake Hennessy and upstream watercourses. As a result, the Conn Creek Watershed is considered to be outside of the Central California Evolutionarily Significant Unit (ESU) for coho salmon (*Oncorhynchus kisutch*) and steelhead (*Oncorhynchus mykiss*). Moreover, the THP/TCP is not located in a State Planning Watershed with populations of anadromous salmonids listed as threatened or endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA).

FIELD REVIEW AND TIMBER HARVEST PLAN ASSESSMENT

Field Assessment

During the PHI, the Review Team examined existing roads, proposed road construction areas, four proposed landings, and proposed fire hazard reduction areas. Special-status plant species were observed, as well as deer tracks, bear scat, fox scat in numerous locations, a rocky outcropping, five bat habitat trees, Class I, II, and III watercourses and Watercourse and Lake Protection Zones (WLPZs), vineyard blocks, two attenuation basins, three sediment basins, and two swales.

Roads, Landings, and Fire Hazard Reduction Areas

The Review Team began at the landing in the center of Block B and walked the eastern side of the THP along the proposed road construction area above a line of houses (Figure 1). Bushes in this area would be removed, and trees would be limbed to a height of eight feet for fire hazard reduction. The Review Team and the RPF discussed and agreed to rock the proposed road. Two large wildlife trees – Tree A (Figure 2), east of Block B along the proposed road, and Tree B (Figure 3), just west of Block B in a scarp area – are both in the fire reduction area, and would be preserved with the bottom 8 feet de-limbed to minimize ladder fuels. During the PHI, the landowner agreed to preserve an additional wildlife tree, Tree C (Figure 4), on the northwest corner of Block A2. CDFW questioned the need for the large fire hazard reduction boundary surrounding Block B. Following the PHI, CDFW and the RPF agreed to reduce the fire hazard reduction area by four acres around Block B and leave it intact as habitat for wildlife species. CDFW recommends removing the fire hazard reduction area in the south and southwest area surrounding Block B. Figure 5 is a map showing wildlife trees A, B, and C, the reduced fire hazard reduction area around Block C, and should be incorporated into the THP in Section II to replace the Habitat Enhancement Plan map (**Recommendation 1**).

South of Block B and above the newly constructed road is an area that the THP designates as an “erosion feature.” The Review Team examined this area, which CGS considers to be a

landslide area (Figure 6) with a scarp that needs to be addressed in the THP.

Removal of Water Lines

The Review Team found old water lines at the rocky outcropping (Figure 7) leading to Conn Creek. The rocky outcropping is 85 feet above Conn Creek on the west side of the plan area. The water lines were also found above the riparian zone in several locations on the west side of A1, along with an old camp containing blankets, clothing, a tent, garbage, plant pots, water lines, and fertilizers. CDFW recommends all water lines be taken out of the Conn Creek riparian zone (**Recommendation 2**).

Habitat Enhancement Plan

The Review Team walked along the western boundary of the proposed 12-acre Habitat Enhancement Plan area, inspecting existing conditions (Figure 8). The RPF proposes to girdle one tree per acre in areas where there are no snags to create more snags for wildlife use. The RPF also proposes to plant 1,000 ponderosa pine seedlings under the existing chemise/manzanita chaparral alliance native habitat; the seedlings would be shaded by the brush and receive enough groundwater to survive without watering; a twenty-five percent survival rate is expected. Planting these seedlings would be disruptive to an intact native habitat. CDFW recommends not disturbing the established natural chemise/manzanita chaparral alliance habitat (**Recommendation 3**).

Watercourses, Swales, and Basins

The Review Team evaluated an unnamed Class III watercourse on the property boundary at the northeast corner of Block A1. The delineation of this watercourse alignment is incorrect in the THP. The boundary flagging had been removed along this watercourse and also along Conn Creek. The Review Team worked with the RPF to correct the delineation of the Class III watercourse northeast of Block A1 and accompanying buffer zone, and worked with the RPF's assistant to clarify the WLPZ buffer for Conn Creek. The description of this feature should be updated in the THP to reflect the correct watercourse alignment, and the appropriate WLPZ should be established and flagged in the field. Flagging should be replaced for Conn Creek and all unnamed Class III watercourses where it is missing (**Recommendation 4**).

An issue of concern raised by CDFW and other Review Team members during the PHI was the treatment of instream basins, such as attenuation and sediment basins, how these basins should be classified, and what WLPZ protections should be applied to these features. Two Class III watercourses with attenuation basins were examined by the Review Team. The Review Team also inspected two Class III watercourses with sediment basins on the central western portion of Block D1. The basins on all of these Class III watercourses are instream basins, that is, they are in-channel basins that attenuate stormwater, or sediment and flood flows, on these watercourses. However, the THP does not treat these features as requiring Class III WLPZ protections. Class III protection measures should be extended to include each of the basins (**Recommendation 5**).

The Review Team observed a spring, and beneath it a large wetland feature between Blocks E1 and E2.[1] The grassy meadow adjoining the west boundary of the wetland (Figure 9) is not proposed as part of the conversion and would remain undisturbed. The THP/TCP map shows a gap between the bottom of the wetland and the beginning of the Class III watercourse below

[1] This feature is termed a "wetland seep", with a picture showing hydrophytic plants, in THP Appendix D, Figure 5.

(Figure 10). The plan proposes to harvest and convert this area as part of the vineyard. However, there is hydrological connectivity between the wetland and Class III watercourse; in other words, the wetland clearly flows into the watercourse. The THP should be revised to designate the area directly downstream of the wetland as a Class III watercourse, which provides connectivity between the wetland and Class III channel downstream; therefore, Class III WLPZ buffers should be applied in this area (**Recommendation 6**).

If this area is proposed to be converted to a vineyard or otherwise modified, the RPF should consult with CDFW regarding the need for notification under the Lake and Streambed Alteration Program. Federal Clean Water Act exemptions for timber activities may not apply to proposed vineyard conversion activities in this wetland area; therefore, the RPF may wish to consult the U.S. Army Corps of Engineering regarding the need for a wetland delineation and/or Section 404 permit.

Pallid Bat and Townsend's Big-Eared Bat

Pallid bats (*Antrozous pallidus*) are a state species of special concern. Townsend's big-eared bat (*Corynorhinus townsendii*) is currently listed as a candidate species under CESA[2] and is also a species of special concern. Timber harvest plans must contain operational provisions that avoid take as defined by and consistent with the candidate status of Townsend's big-eared bat under CESA, and avoid take of state species of special concern.

Within the THP area, there are five trees with exfoliating bark that are suitable day and night roosting habitat for pallid bats and Townsend's big-eared bats, as well as a rocky outcropping with cavities between the rocks that are suitable roosting habitat for pallid bats. The rocky outcropping is 85 feet from Conn Creek and is not in the proposed conversion area. Of the five suitable bat roosting trees, Trees #1 (Figure 11) and #5 (Figure 12) will be preserved, Trees #2 (Figure 13) and #4 (Figure 14) in Block E2, and Tree #3 (Figure 15) in Block D1 are proposed to be removed.

THP Appendix R provides acoustic and sunset fly-out (emergence) survey results, criteria for additional surveys prior to tree removal, and measures for protection of bat species prior to and during tree removal. The rocky outcropping and bat tree surveys detected pallid and Townsend's big-eared bats as well as other bat species. The first round of bat surveys detected special-status bats, but did not confirm roosting in trees or the rocky outcropping (i.e., findings were inconclusive). Further acoustic and sunset fly-out surveys will be performed a maximum of three days prior to construction with improved survey recording devices set closer to potential roosting areas and with microphones placed at higher elevations for improved sonar detection accuracy.

CDFW provided recommendations during First Review and the PHI to improve bat survey methods to provide more conclusive data. Responses to CDFW First Review questions #12 and #13 were not answered prior to the PHI because the biologists who wrote the Bat Survey Report were not available. The RPF agreed to text changes to THP Section II and THP Appendix R, the Bat Survey Report, to provide better protection of Townsend's big-eared bats. CDFW recommends that an additional acoustic and sunset fly-out survey be performed a maximum of three days prior to construction. (**Recommendation 7**). Positive survey data should be sent to California Natural Diversity Database (CNDDB).

[2] The California Fish and Game Commission voted on August 25, 2016 not to list Townsend's big-eared bat; however, the candidate status and protections under CESA remain in place until findings have been issued.

Wildlife Corridor

Block E2 includes a late seral forest of large and mid-size trees with little to no undergrowth (Figure 16). A grassy meadow and wetland adjoin Block E2 on the west side with a swale/Class III watercourse below the wetland going through E2 and connecting with a clearly defined Class III watercourse. Besides containing Bat Trees #2 and #4, this Block shows signs of being a significant wildlife corridor with bear and fox scat, and signs of raptors use with bird wash and prey remains surrounding the base of one tree (Figure 17), as well as several suitable perch trees and nesting trees. Given wildlife signs, mature forest characteristics, low ground cover/high visibility, and nearby meadow and wetland habitat, Block E2 appears to be an important area for wildlife use and movement. CDFW recommends further consideration of Block E2 as a wildlife corridor in the draft EIR, including application of feasible mitigation if this area is proposed to be converted to vineyards (**Recommendation 8**).

Northern Spotted Owl

Northern spotted owls (*Strix occidentalis caurina*) are listed as federally endangered, a species of special concern, and candidate for listing under CESA. Two historical activity centers (NAP0014 and NAP0028) are within 1.3 miles of proposed harvesting activities. The THP contains 3 acres of northern spotted owl nesting/roosting habitat and 19 acres of northern spotted owl foraging habitat, which will be converted to vineyards, which is over half of the 36-acre project. A pair of northern spotted owls were detected in activity center NAP0014 in all three 2016 surveys. A northern spotted owl was detected in 2015 in NAP0028 during a CAL FIRE survey. There have been no barred owl detections in this area; barred owls are an invasive competitor that have displaced northern spotted owl throughout much of their range. CDFW's 1st Review question #14 inquired whether or not cumulative effects of other conversions in this area had been considered. The reply was non-responsive, indicating "[t]he property owners have no control over future land-uses of the landscape outside their ownership," and they knew of one other potential conversion project within 1.3 miles of this project so it was, "therefore, not addressed for the LeColline Project." CDFW has provided a map (Figure 21) showing other conversions in the area, excluding the Ciminelli (1-16-044 NAP) and this THP, with northern spotted owl activity centers in large circles, and positive detections of northern spotted owls in dots. Other recent conversions in the area, which are part of the public record, include 1-00-213 NAP, 1-00-447 NAP, 1-01-287 NAP, 1-01- 409 NAP, 1-01-429 NAP, 1-02-203 NAP, 1-03-187 NAP, and 1-13-074 NAP. CDFW recommends a more rigorous evaluation of cumulative effects, including an evaluation of foraging and nesting habitat loss associated with the approved and pending timber conversion projects described above ["reasonably foreseeable projects" as defined in CEQA Guidelines Section 15130(b)(1)(A)], of northern spotted owl habitat be provided in the THP. Such an analysis is also indicated under U.S. Fish and Wildlife Service guidelines (USFWS, 2008) to demonstrate that northern spotted owl habitat quantities will be retained at or above the habitat threshold for take under ESA. (**Recommendation 9**).

Special Species Plants

The Review Team observed pink and yellow flagging in a meadow on the western edge of Block B for protection of narrow-anthered brodiaea (*Brodiaea leptandra*, brodiaea) (Figure 18). Brodiaea is an annual, has a California Native Plant Society status of 1B.2 ("rare, threatened, or endangered in California and elsewhere") and is only visible in spring when flowering. In addition to the flagging, the RPF agreed to place rocks or wood around plants for further protection. The Review Team also observed the perennial Napa false indigo (*Amorpha californica* var. *napensis*) (Figure 19), also listed by the California Native Plant Society as 1B.2, in two locations; several plants are in an area just north of Block B and south of Winding Way

Road, with another near Bat Tree #5. THP Appendix D, Plate 5, page 51, is a map showing locations of the two special species plants (Figure 20). Currently, Napa false indigo has a five-foot buffer from activities. The RPF explained there is no plan to protect Napa false indigo, as it does well in disturbance. Although a small level of disturbance may be beneficial, extensive disturbance of the topsoil, as frequently occurs during harvesting operations may have an adverse impact on this species. Also, due to extended drought conditions, the plant populations and seed banks may be more spatially extensive than currently estimated. CDFW recommends flagging both plant species, and placing a 25-foot buffer around each area where the brodiaea and Napa false indigo populations are located (**Recommendation 10**). CDFW further recommends placing the narrow-anthered brodiaea and Napa false indigo on the Conversion map and Habitat Enhancement Plan map (**Recommendation 11**).

RECOMMENDATIONS

CDFW is a trustee agency for California's fish, wildlife, and native plant resources (Public Resources Code Section 21000, et seq.), a responsible agency pursuant to CEQA §15381 and §15386, and a Review Team agency under 14 CCR §1037.5(a). In this capacity and in accordance with Forest Practice Rules 14 CCR § 1037.5(f), CDFW recommends feasible and project-specific mitigation measures to be incorporated into the THP.

1. The RPF should replace the fire hazard reduction map in the THP in Section II, page 93 to reflect the revised agreed upon map shown in Figure 5.

2. The property owner should take out all unpermitted water lines in the Conn Creek riparian zone.

3. The RPF should leave the established natural chemise/manzanita chaparral alliance habitat intact, and replace the Habitat Enhancement Plan to reflect no disturbance in this 12 acre portion of the plan area.

4. The RPF should correct the delineation of the Class III watercourse northeast of Block A1 and accompanying buffer zone, and update the THP maps to reflect correct watercourse alignment, and the appropriate WLPZ should be established and flagged in the field. Flagging should be replaced for Conn Creek and all unnamed Class III watercourses where it is missing.

5. The RPF should extend the Class III protection measures to include each of the two attenuation basins and two sediment basins (not including sediment basin C).

6. The RPF should revise the maps in the THP on page 91 and 174 to designate the area directly downstream of the wetland as a Class III watercourse, which provides connectivity between the wetland and Class III channel downstream, and flag with Class III WLPZ buffers.

7. The RPF should include in Appendix R that additional acoustic and sunset fly-out surveys shall be performed a <u>maximum of three days</u> prior to construction, and that positive detections will be sent to CNDDB.

8. The RPF should provide should provide in-depth consideration of Block E2 as a wildlife corridor in the draft EIR, including application of feasible mitigation if this area is converted to vineyards.

9. The RPF shall provide a more rigorous evaluation of cumulative effects, including an evaluation of foraging and nesting habitat loss associated with the approved and pending timber conversion projects described above ["reasonably foreseeable projects" as defined in CEQA Guidelines Section 15130(b)(1)(A)], of northern spotted owl habitat be provided in the THP. Such an analysis is also indicated under U.S Fish and Wildlife Service guidelines (USFWS, 2008) to demonstrate that northern spotted owl habitat quantities will be retained at or above the habitat threshold for take under the Endangered Species Act.

10. The RPF should flag both plant species, Brodiaea and Napa False Indigo, and place a 25-foot buffer around each area where the Brodiaea and Napa False Indigo are located as a buffer to prevent seed impaction and restriction of plant distribution.

11. The RPF should include the special species plants found in the project area, narrow-anthered brodiaea and Napa false indigo, on the Conversion map and Habitat Enhancement Plan map.

Please direct questions or correspondence regarding this memorandum to Ms. Jeanne Wetzel Chinn, Environmental Scientist, at (707) 944-5523 or Jeanne.Chinn@wildlife.ca.gov; or Ms. Randi Adair, Senior Environmental Scientist (Supervisory), at (707) 944-5596.

cc: Scott Butler, RPF
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REFERENCES

Baker, Michael D., et al., Habitat Use of Pallid Bats in Coniferous Forests of Northern California, 2008. Northwest Science, Vol. 82, No. 4, p.269-275

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California Native Plant Society, 2014. Rare and Endangered Plant Inventory, Accessed on September 7, 2016.

Napa County, 2008. Napa County General Plan. June 3, 2008. Available online at: http://www.countyofnapa.org/generalplan/. Accessed on June 21, 2016.

USFWS, 2008. NSO Take Avoidance Analysis and Guidance, For California Coast Forest District and Interior Forest District, Attachments A and B. March 15, 2011.

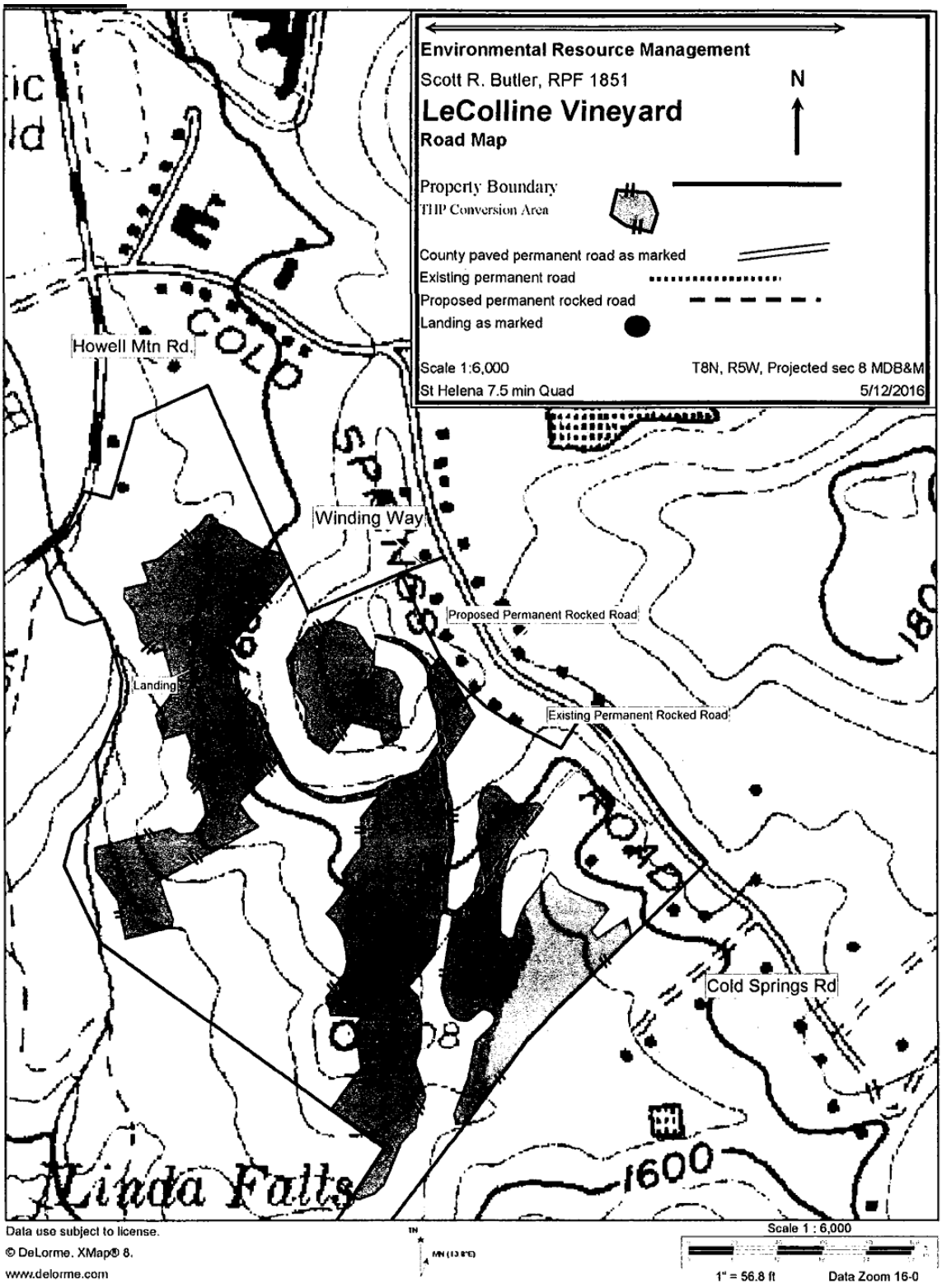

Figure 1 –Map of Project Site
Source: THP, Section II, Page 94

Figure 2 – Wildlife Tree A

Figure 3 – Wildlife Tree B

Figure 4 – Wildlife Tree C

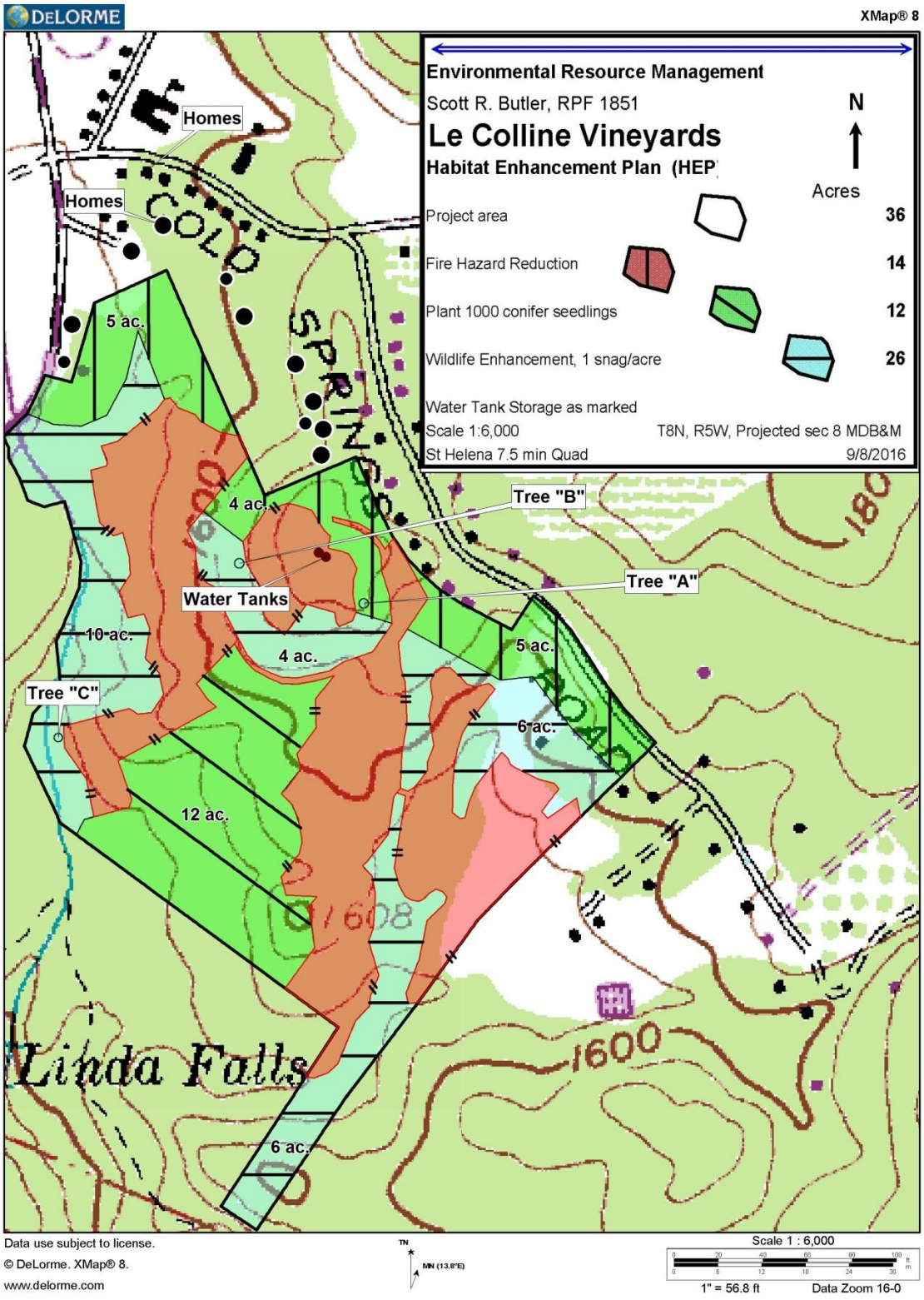

Figure 5 – Wildlife Tree Map and Fire Hazard Reduction Area, Revised 9/8/2016

Figure 6 – Scarp below Block B,
And Above New Road to be Constructed

Figure 7 – Marijuana lines above Conn Creek

Figure 8 – Habitat Enhancement Plan Area

Figure 9 – Grassland Adjoining Wetland

Figure 10 – Hydrologically connected area in E2 between the Wetland and Class III

Figure 11 – Bat Habitat Tree #1

Figure 12 – Bat Habitat Tree #5

Figure 13 –Bat Habitat Tree #2

Figure 14 – Bat Habitat Tree #4

Figure 15 – Bat Habitat Tree #3

Figure 16 – Mature Forest in E2

Figure 17 – Raptor Tree in Block E2

Figure 18 – Narrow-anthered Brodiaea

Figure 19 – Napa False Indigo

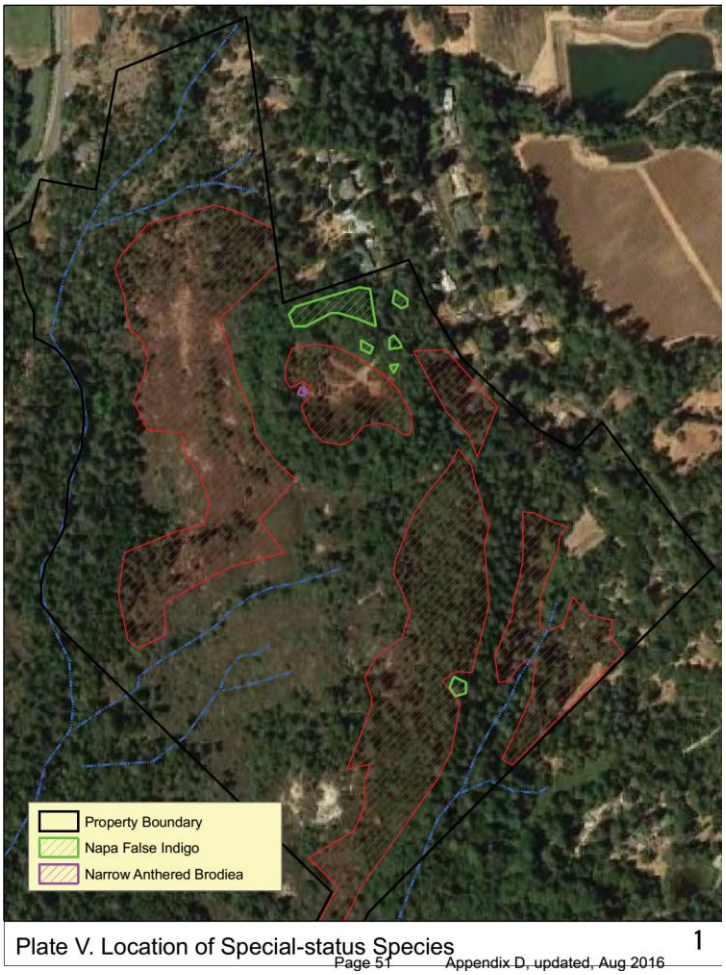

Figure 20 – Appendix D, Plate 5, p.51

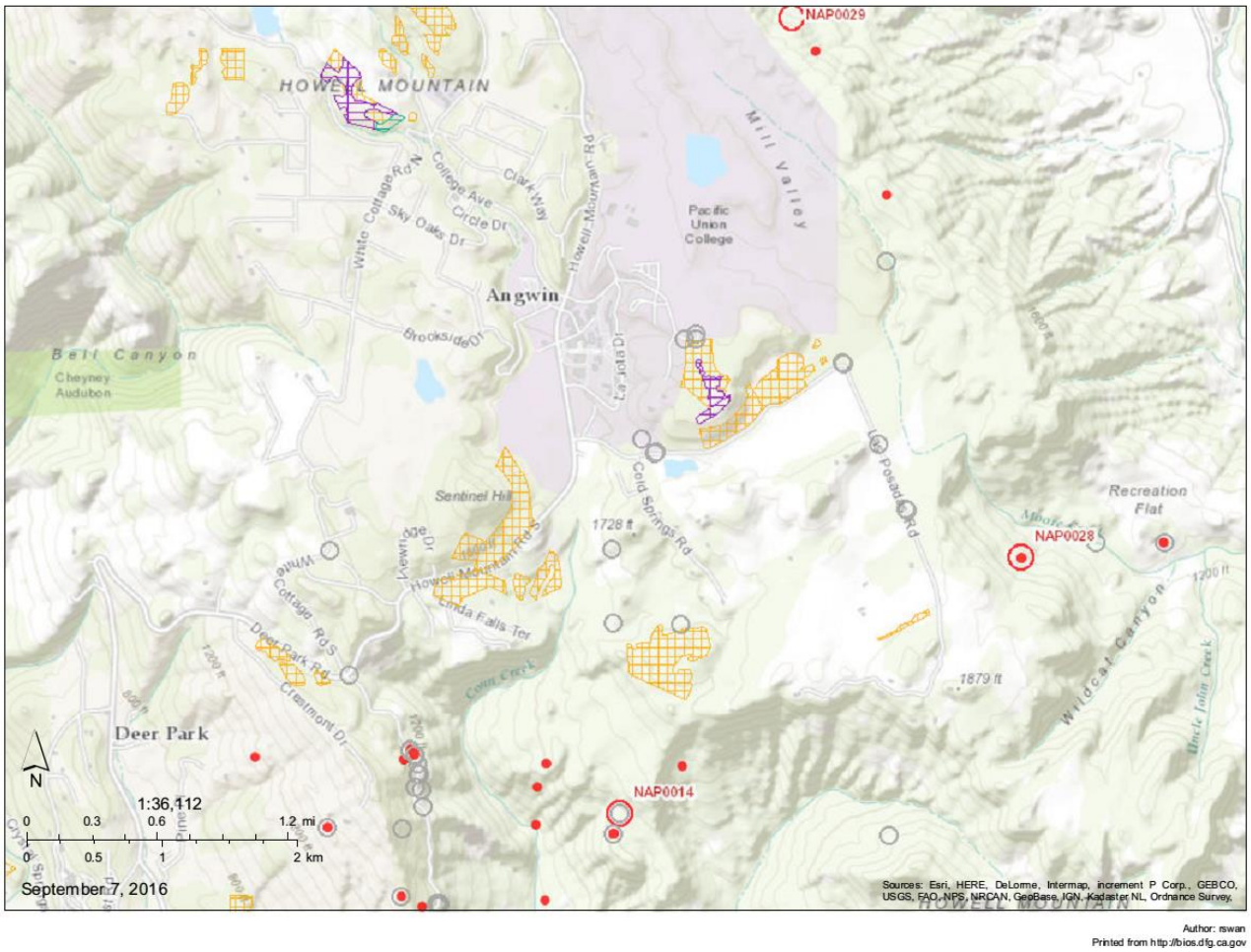

Figure 21 – Map of Other Conversions in the Area in Gold,
Not Included: Ciminelli & LeColline THP/TCPs
Red Circles = NSO Activity Centers
Red Dots = NSO Positive Detections

Source: CDFW 2016. Timber harvest exemption data provided by CAL FIRE

State of California • Natural Resources Agency
Department of Conservation
California Geological Survey
135 Ridgway Avenue
Santa Rosa CA 95401

Edmund G. Brown Jr., *Governor*
John G. Parrish, Ph.D., *State Geologist*

MEMORANDUM

DATE: September 14, 2016

TO: Helge Eng, Deputy Director
California Department of Forestry and Fire Protection
135 Ridgeway Avenue
Santa Rosa, California 95401

FROM: Kevin Doherty
Department of Conservation
California Geological Survey
135 Ridgeway Avenue
Santa Rosa, California 95401

Red Highlighted, Scott Comments
Green Highlighted, Comments for Lou Gilpin
Blue Highlighted, Comments for Drew and Diane

SUBJECT: Engineering Geologic Review of Timber Harvesting Plan 1-16-079 NAP

Inspection Date: August 29, 2016

County: Napa

Quadrangle: St. Helena 7.5' Quadrangle

Watershed: Conn Creek (2206.500305)

Silvicultural Method: Conversion

Slopes: Gentle to Steep

Logging System: Ground Based

EHR: Moderate

Legal Description: Sec 8 (Projected), T8N, R5W; MDB&M.

Timberland Owner/Plan Submitter:
Le Colline, LLC/Cold Springs, LLC

Participants-Affiliation:
RPF – Scott Butler
Steve Smith – RPF
Dave DiCesaris – Landowner
Diane Wilson – Napa Valley Vineyard Engineering
Drew Aspegren – Napa Valley Vineyard Engineering
Analise Rivero – AES
Ali Middlekauff – AES
Kimberly Sone – Cal Fire
Jim Wright – Cal Fire
Dan Stapleton – Cal Fire
Brian Bordona – Napa County
Wesley Salter – Napa County
Jeanne Chinn – CDFW
Angela Moran – CDFW
Mandy Culpepper – CDFW
Kevin Brown – RWQCB
David Longstreth – CGS
Kevin Doherty – CGS

Area: 32 acres

Geologic Concerns: Potential effects of operations on slope stability; construction of new roads and use of existing roads and skid trails; potential for sediment delivery to Conn Creek and tributaries.

References:

California Geological Survey, 1999 (Revised), Factors Affecting Landslides in Forested Terrain, California Geological Survey (formerly Division of Mines and Geology) Note 50, 5p.

California Geological Survey, 2013, Guidelines for Engineering Geologic Reports for Timber Harvesting Plans, California Geological Survey (formerly Division of Mines and Geology) Note 45, 6p.

Dwyer, M.J., Noguchi, N., O'Rourke, J., 1976, Reconnaissance Photointerpretation Map of Landslides in 24 Selected 7.5 Minute Quadrangles in Lake, Napa, Solano, and Sonoma Counties, California, St. Helena 7.5-Minute Quadrangle: United States Geological Survey, Open File Map 76-74, Sheet 12 of 25, scale 1:24,000.

Fox,Jr., K.F., Sims, J.D., Bartow, J.A., Helley, E.J., 1973, Preliminary Geologic Map of Eastern Sonoma County and Western Napa County, California; USGS Miscellaneous Field Studies MF-483, map scale 1:62,500.

Gilpin, L.M., 2014, Engineering Geologic Evaluation, Le Colline Vineyard, APN 024-300-070, 071, 072 & 024-340-001, Cold Springs Road, Angwin, California; dated November 25, 2014.

Gilpin, L.M., 2016, Response to Comments, Engineering Geologic Evaluation, Le Colline Vineyard, APN 024-300-070, 071, 072 & 024-340-001, Cold Springs Road, Angwin, California; dated August 22, 2016.

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Jennings, C.W., Bryant, W.A., 2010, Fault Activity Map of California, Geological Data Map No.6, California Geological Survey, Scale 1:750,000.

Petersen, M.D., Bryant, W.A., Cramer, C.H., Cao, T., Reichle, M.S., Frankel, A.D., Lienkaemper, J.J., McCory, P.A., and Schwartz, D.P., 1996, Probabilistic Seismic Hazard Assessment for the State of California: California Department of Conservations, Division of Mines and geology Open File Report 96-08; U.S. Geological Survey, Open File Report 96-706.

Aerial Photographs Inspected:

Napa County, 1973, Black and white photographs, Flight 3575, Roll 1, Frames 240, 241; nominal scale 1:24,000.

Napa County, 1989, Black and white photographs, Flight AV 3566, Roll 10, Frames 14, 16; nominal scale 1:28,800.

WAC Inc., 1999, Color photographs, Flight WAC-C-99, Roll 5, Frames 238, 239; nominal scale 1:24,000.

Google earth images: 38°33'39.63"N and 122°26'17.28"W. Google Earth., 7/9/1993; 8/11/2004; 6/11/2005; 4/24/2010; 7/17/2012; 6/1/2013; 8/23/2014; 4/1/2015; Accessed August 25, 2016.

Lidar Images: 38°33'39.63"N and 122°26'17.28"W. Napa County, LiDAR, 2003, collected by National Center for Airborne Laser Mapping (NCALM); obtained from opentopography.org.

Geologic Conditions:

Timber Harvest Plan 1-16-079 NAP is in an area underlain by Pliocene age Sonoma Volcanics (Fox and others, 1973, Figure 1). It is described as locally welded or partially welded pumicitic ash-flow tuff, with intercalated bedded agglomeritic tuff, andesitic or basaltic lava flows, tuff breccia, bedded tuff, and pumicitic tuff. PHI observations of weathered bedrock exposed along trails and in road cuts within and adjacent to the plan area generally appeared as weathered fine-grained light

gray tuff consistent with descriptions by Fox and others (1973). The plan area is located approximately 16 miles east of the active Maacama Fault Zone and 16 miles southwest of the Hunting Creek fault (Jennings and Bryant, 2010). The Maacama fault is capable of generating a Maximum Moment Magnitude 7.1 earthquake with a recurrence interval of 220 years (Petersen and others, 1996). The Hunting Creek fault is capable of generating a Maximum Moment Magnitude 6.9 earthquake (Gilpin, 2014). High ground acceleration associated with fault rupture along these fault systems are likely contributing factors for movement on deep-seated landslides in Napa County.

Soils complexes identified in the THP are the Forward Gravelly Loam, 2 to 9 percent slopes, Forward Gravelly Loam, 9 to 30 percent slopes, Forward Gravelly Loam, 30 to 75 percent slopes, and Kidd Loam, 15 to 30 percent slopes. Soils observed during the PHI generally consisted of gray to brown clay and gravelly loams that appeared well drained. The site inspection concurs with the Moderate Erosion Hazard Ratings calculations included with the THP.

Site slopes (ranging from 20 to 50± percent gradients) drain to the west and southwest via Class II and III watercourses that are tributaries to Conn Creek, a Class I watercourse. No landslides are mapped within or adjacent to the THP boundary (Dwyer, 1976, Figure 2 and Gilpin, 2014, Figure 3). A landslide feature observed within the THP boundary during the PHI is discussed below under the Specific Observations portion of this memo.

Agency Question: 1). The THP proposes conversion harvesting directly adjacent to and upslope of what appear to be existing residential structures. The plan attached geologic report (Gilpin Geosciences, 2014) does not discuss potential impacts to the structures from harvesting. Are additional mitigations necessary to minimize adverse impacts to the slope stability above the residential structures?

Response: The THP proposes to conduct conversion harvesting directly adjacent to and upslope of existing residential houses along the eastern THP boundary. Conversion harvesting is similar to a clearcut and is anticipated to significantly reduce existing canopy and root function. Based on review of the THP map and PHI observations, it appears conversion harvesting is proposed within 30 to 40-feet of the adjacent residential structures. Additionally, the THP proposes to construct an approximately 600-foot long segment of a new permanent road along 30-percent slopes approximately 75 to 100-feet upslope of the residential structures. Public comment letters received by Cal Fire express concern that proposed harvesting operations will adversely affect slope stability above the residential structures. The proposed operations and proximity of the adjacent residential structures to the proposed harvest area constitutes a public safety concern. The plan attached engineering geologic evaluation (Gilpin, 2014) does not identify the residential structures, describe existing conditions or discuss potential impacts of the proposed harvesting operations.

In response to CGS first review comments, the project geologist submitted a 2-page memo, dated August 22, 2016. This memo noted the shallow, competent bedrock at the site and included a general statement that no evidence of slope instability was observed above the residences. The conclusion presented was that no additional mitigations were necessary. The memo does not include a geomorphic description specific to the slope above the residences or specifically address potential impacts of proposed operations on the slope, including potential changes to root function, drainage and subsurface hydrology resulting from road construction and the loss of canopy adjacent to and above the residential structures. CGS Note 45 recommends that geologic investigations identify and discuss potential impacts to houses, public buildings, roads or other features that could be potentially adversely affected by landsliding or surface soil erosion

associated with timber harvesting activities. Based on the lack of supporting information provided in the engineering geologic evaluation it is difficult to determine whether potential impacts to public safety have been adequately evaluated. The area was visited during the PHI and is discussed under the Specific Observations portion of the memo.

Agency Question: *2). The THP proposes to construct a new road below an erosional feature identified in the plan attached geologic report (Gilpin Geosciences, 2014) located above the head of a mapped Class III watercourse. Are additional mitigations needed to minimize adverse impacts to slope stability and sediment delivery?*

Response: The THP proposes to construct approximately 2800-feet of new permanent road within the central and northern portions of the THP area. Based on review of the THP map and PHI observations, portions of the proposed road alignment are located below steep (approximately 50-percent) slopes and a large bowl-shaped feature. The proposed road crosses approximately 50-feet up slope of the head of a mapped Class III watercourse. The road construction is not discussed in the plan attached engineering geologic evaluation (Gilpin, 2014). The proposed road alignment was visited during the PHI and is discussed under the Specific Observations portion of the memo.

Specific Observations: *(keyed to Figures 4, 5, 6 and 7)*

CGS-1: What appears to be an approximately 150 to 200-foot wide and long bowl-shaped feature was observed along the southern slopes of a geomorphic knoll near the northeastern THP boundary. A Class III watercourse is mapped approximately 50 to 75-feet below the bowl-feature. The top of the knoll is approximately 3.5-acres in size and surface drainage appears to be generally to the northwest. A small section of the top of the knoll (approximately 0.5-acre) appears to drain to the bowl-shaped feature along the southern slope of the knoll. The swale of the bowl-shaped feature below the top of the knoll did not appear incised or channelized during the PHI. The plan attached engineering geologic evaluation describes the bowl-shaped feature as a drainage channel resulting from long-term erosion of the volcanic bedrock. Based on the small drainage area above the bowl-shaped feature and the lack of channelization observed within the bowl-shaped feature, it appears unlikely that surface drainage alone would be responsible for the feature.

Geomorphic topographic indicators as observed during review of aerial photographs (sets 1973, 1989, 1999, Google Earth images), lidar images (Figure 6) and on ground PHI observations suggest that the bowl-shaped feature is likely a translational landslide feature. This topographic evidence for landsliding consists of concave slopes approximately 75 to 100-feet feet high that likely corresponds to a weathered and rounded main scarp. The presumed body of the feature includes evidence of localized historic activity including benched topography and 30 to 65-percent slopes that support several pistol-butted and slightly swept second and third growth conifers. Small concave depressions were observed along the sides of the main scarp. Loose debris was observed along the steep slopes and on the benches below concave depressions where it appears groundwater has seeped through the face of the headwall. These features appear to be historic to recent weathered debris slide scarps.

The THP proposes to construct a new permanent road along an existing bench below the likely landslide feature. The bench appeared to be nearly level and only a minimal amount of grading is required to establish the road surface. Fire Hazard Removal harvesting, approved separately from the THP, is proposed along the side slopes of the knoll and within the presumed landslide feature. Harvesting above the headwall of the landslide feature can potentially change the hydrologic cycle

by reducing evapotranspiration. Increased infiltration and resulting pore pressures as a result of the reduction in canopy may increase the potential for adverse impacts to slope stability. As was discussed during the PHI, establishing a no-harvest zone within and above the landslide feature would retain canopy and root function and minimize the potential for adverse impacts to slope stability.

Road construction and harvesting in Timber Harvest Block C: The THP proposes to construct approximately 2800-feet of new permanent road. An approximately 600-foot long segment of the proposed new road is located approximately 75 to 100-feet up slope of five existing residential structures. The approximately 20 to 30-percent slope below the road alignment is proposed for conversion harvesting within Timber Conversion Block C. Canopy below the road alignment appeared low to moderate, with few conifers observed. The approximately 30-percent slope above the road alignment is located between Timber Conversion Blocks B and C and appeared to support straight standing second growth conifers. No evidence of slope instability (for example fresh scarps, exposed soils, bulging ground, pistol-butted or swept conifers) was observed along proposed road alignment above the residential structures. The THP proposes that the 600-foot road segment be rocked and outsloped, minimizing the potential for road runoff to concentrate and erode the road surface. The THP describes Fire Hazard Reduction harvesting, approved separately from the THP, as proposed on the slope above the road alignment between Timber Conversion Blocks B and C. Only conifer seedlings under 4-inches in diameter and ground fuels up to 8-feet in height are proposed for removal, which is anticipated to retain root function and canopy minimizing adverse impacts to slope stability above the proposed road alignment. According to the RPF, generally the road is proposed to be constructed using full bench/end haul methods, however some cut/fill construction will also be employed. It was discussed that where cut/fill road construction methods are proposed above the residential structures, a keyway should be constructed and the fill placed in compacted lifts. The RPF agreed.

Rock Fill: The THP proposes to construct a rock fill on 20 to 25-percent slopes along the western boundary of Timber Conversion Block A1 approximately 200-feet above Conn Creek, a Class I watercourse. The rock fill is located in an area identified as non-timberland. The fill is proposed to be constructed of rock generated from ground preparation and locally gathered volcanic field stones removed from the slope during brush clearing along the slope. Ground preparation is described in the plan attached Erosion Control Plan (ECP, Appendix B) as ripping the existing surface to a maximum depth of 36-inches and tilling. Public comment letters received by Cal Fire express concern that proposed harvesting operations will increase the potential for sediment delivery to Conn Creek. Mitigations proposed in the ECP, including constructing diversion ditches, sediment basins and attenuation basins, appear designed to minimize the potential for sediment delivery to Con Creek. A typical rock fill cross section, describing ground preparation, keyway construction and maximum fill face slope gradient, is included on page 5, Sheet 3 of 3 of Appendix B (Figure 7) attached to the THP. The cross section does not include the proposed thickness of the rock fill or describe potential mitigations designed to minimize adverse impacts to the stability of the steep fill face. During the PHI, the project engineer stated that determining exact fill thickness would be difficult due to the hummocky nature of the terrain and the variable size of the rocks proposed for use. It was discussed, that including mitigation measures designed to minimize adverse impacts to slope stability resulting from the construction of a thick and steep fill face would minimize the potential for the rock fill to fail. The RPF agreed.

Specific Recommendations:

Public Safety: The project geologist shall amend the geology report to specifically include a description of the slope above the residences of concern. This description shall include slope steepness, slope aspect in relation to the residences, anticipated soil thickness and morphology (i.e. smooth, hummocky etc.). The amendment shall specifically address the effects of the proposed operations on the slope including increased soil moisture and direct raindrop impact, potential loss of reinforcing root function, altered drainage patterns and slope loading or undercutting resulting from the proposed timber harvest and road construction.

CGS-1: The project geologist shall specifically address the points presented above under Site Specific Observations. The resultant document shall be made a part of the plan and shall be submitted for Agency review a reasonable amount of time prior to Second Review. Alternatively, the suspected landslide feature shall be identified on the THP maps. Additionally, Section II of the THP shall be revised to describe that harvesting, including Fire Hazard Removal harvesting, shall not occur on the landslide feature or within 50-feet of the headwall as was flagged in the field during the PHI.

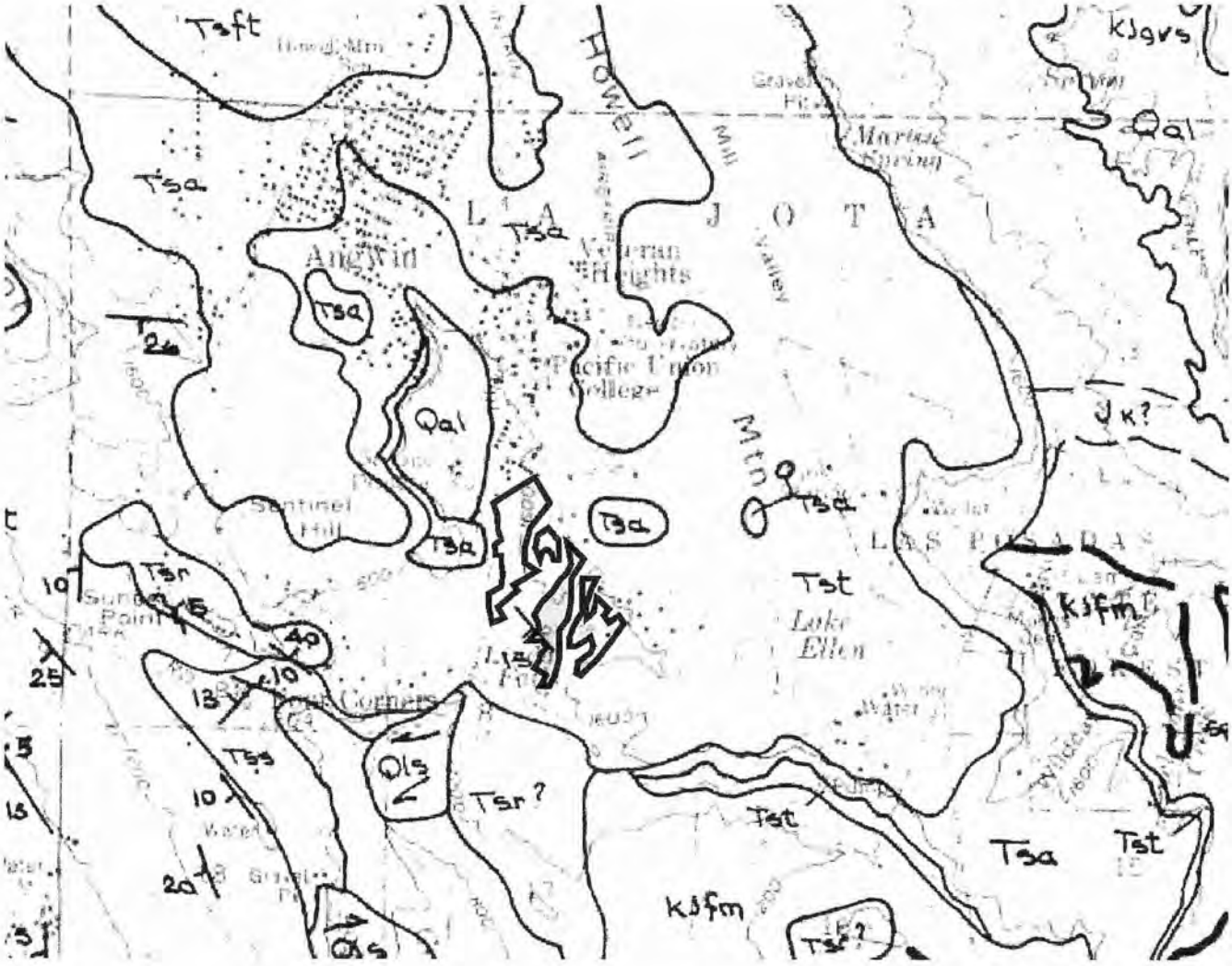
Road construction and harvesting in Timber Harvest Block C: Prior to second review Section II of the THP shall be revised to describe that cut/fill road construction along the road alignment above the residential structures shall be constructed with a keyway and fill placed in 12-inch compacted lifts.

Rock Fill: Prior to second review Section II of the THP shall be revised to describe mitigation measures designed to minimize the potential for failure of the thick and steep rock fill face. Mitigation measures discussed with the project engineer during the PHI include constructing benches in the fill face at 10-foot intervals if the fill face exceeds 10-feet in height.

Original signed by
Kevin F. Doherty, PG # 7824
Engineering Geologist

Concur
9/14/2016 original signed by
Date, Gerald Marshall, CEG # 1909
Senior Engineering Geologist

Attachments: Figures 1, 2, 3, 4, 5, 6 and 7



Explanation

Tsa	Sonoma Volcanics - Lava Flows
Tst	Sonoma Volcanics - Ash Flow Tuff
KJfm	Franciscan Formation
Qls	Landslide Deposits
Qal	Alluvium

N

0 1350' 2700'

Base Map: Modified from Fox,Jr., K.F., Sims, J.D., Bartow, J.A., Helley, E.J., 1973, Preliminary Geologic Map of Eastern Sonoma County and Western Napa County, California; USGS Miscellaneous Field Studies MF-483, map scale 1:62,500.

- Geologic contact, dashed where approximately located
- Rotational/Translational Landslide
- Earthflow
- Debris Slide
- Debris Flow/Torrent Track
- Debris Slide Amphitheater/ Slope
- Inner gorge
- Active Landslide (too small to show at map scale)
- Disrupted ground
- Slopes >70 percent
- 75 Strike and dip of bedding
- Shaded area represents estimated limits of proposed harvest area.

Date: Sep. 2016	Regional Geologic Map*	Figure:
Scale: 1" = 2700'	To Accompany	1
Approved By: CGS	Engineering Geologic Review of THP 1-16-079 NAP	

Explanation

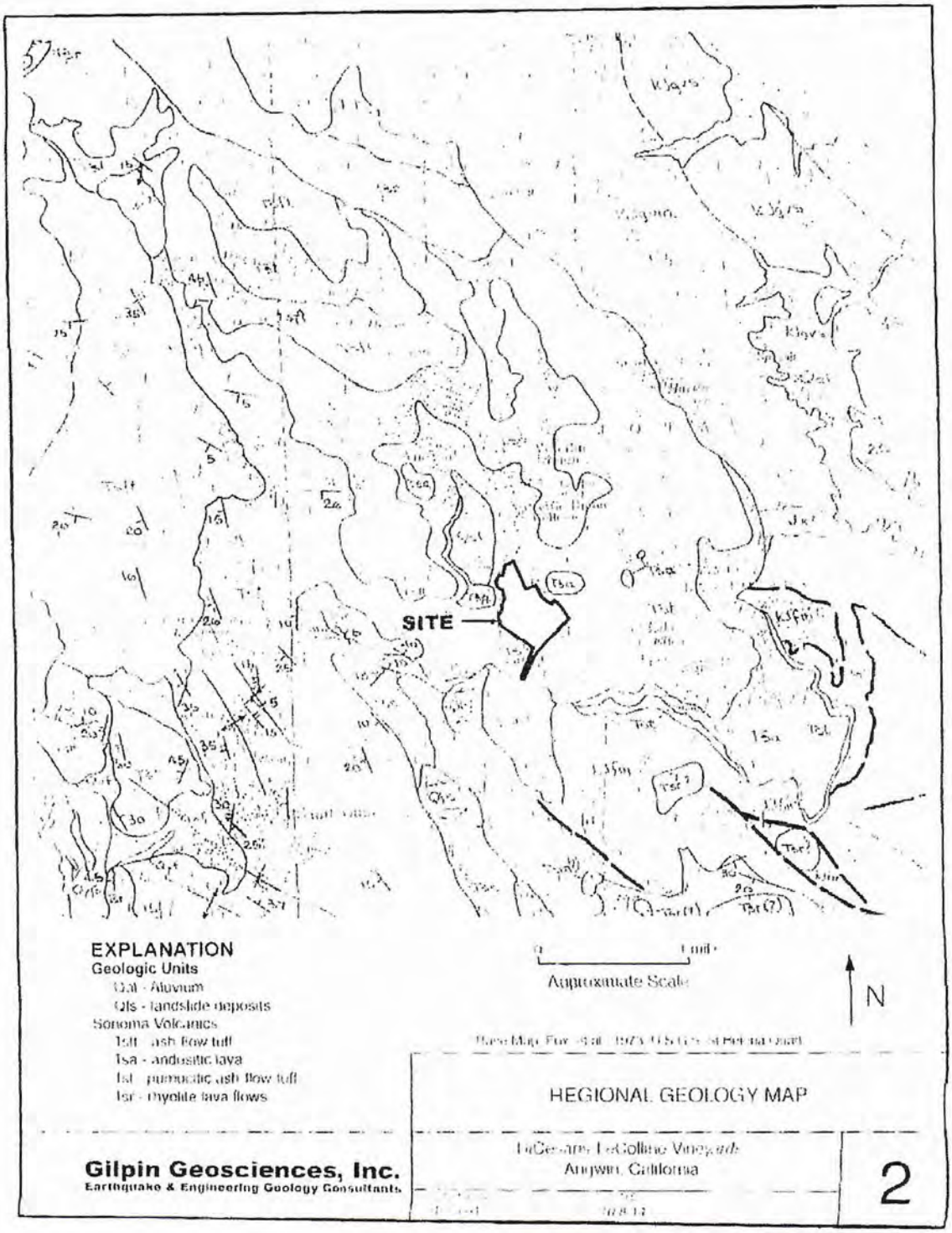
- Geologic contact, dashed where approximately located
- Rotational/Translational Landslide
- Earthflow
- Debris Slide
- Debris Flow/Torrent Track
- Debris Slide Amphitheater/ Slope
- Inner gorge
- Active Landslide (too small to show at map scale)
- Disrupted ground
- Slopes >70 percent
- 75 Strike and dip of bedding
- Shaded area represents estimated limits of proposed harvest area.

N

0 1250' 2500'

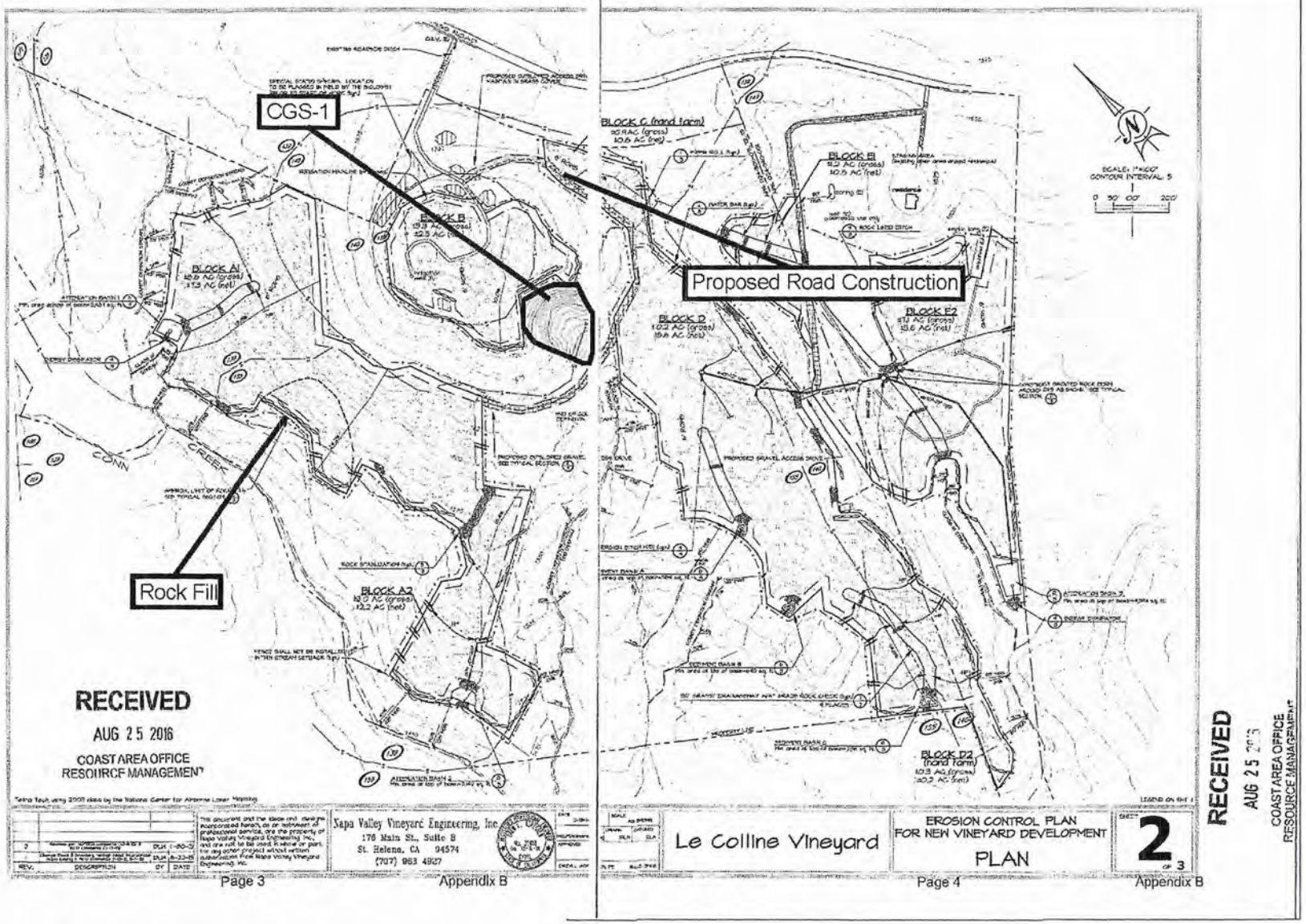
Base Map: Modified from Dwyer, M.J., Noguchi, N., O'Rourke, J., 1976, Reconnaissance Photointerpretation Map of Landslides in 24 Selected 7.5 Minute Quadrangles in Lake, Napa, Solano, and Sonoma Counties, California, St. Helena 7.5-Minute Quadrangle: United States Geological Survey, Open File Map 76-74, Sheet 12 of 25, scale 1:24,000.

Date: Sep. 2016	Regional Geologic Map*	Figure:
Scale: 1" = 2500'	To Accompany	2
Approved By: CGS	Engineering Geologic Review of THP 1-16-079 NAP	



Base Map: Modified from Gilpin, 2014, THP 1-16-079 NAP, pg. 7

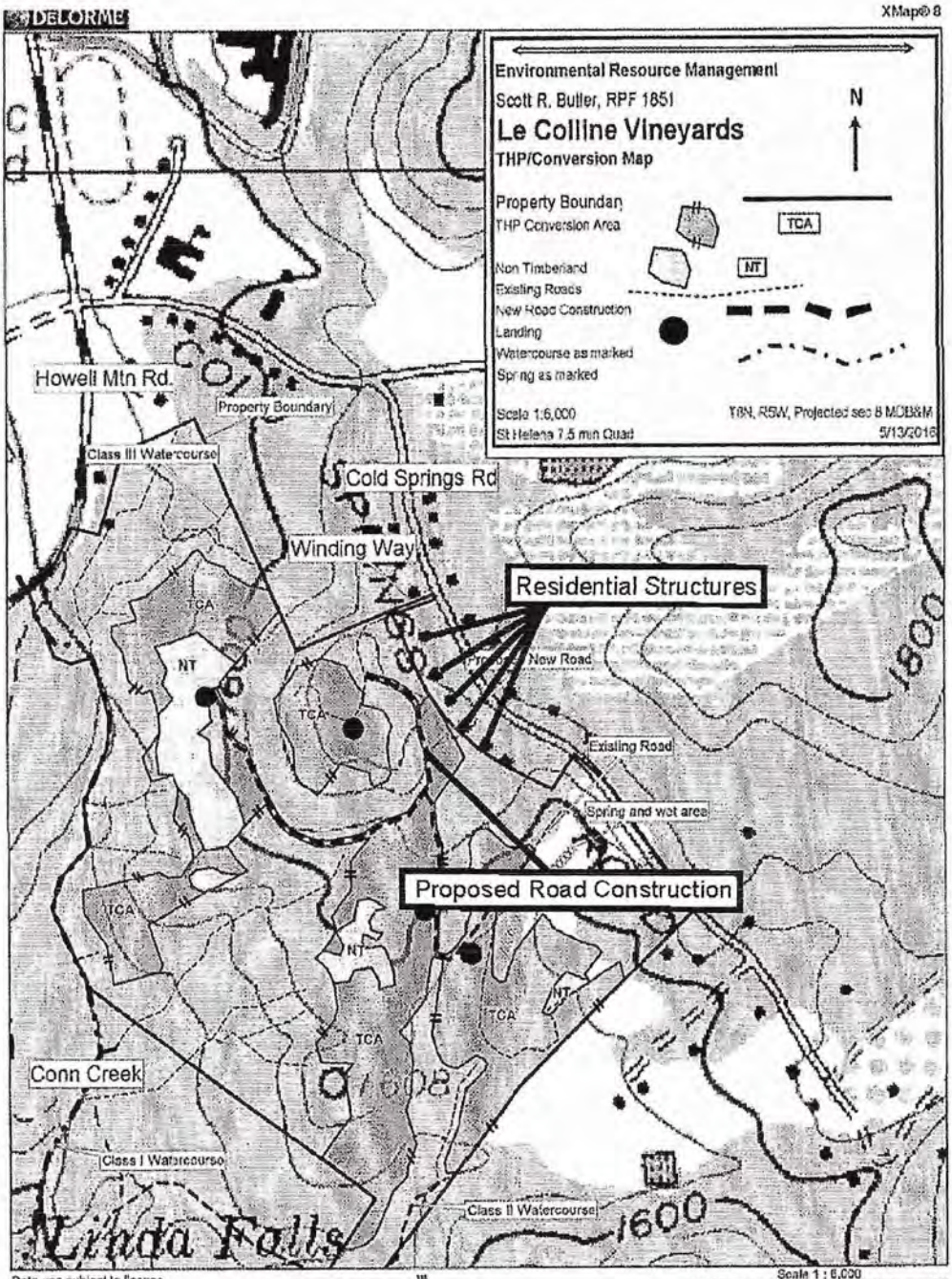
Date: Sep. 2016	Site Map To Accompany Engineering Geologic Review of THP 1-16-079 NAP	Figure: 3
Approved By: CGS		



Base Map: Modified from THP 1-16-079 NAP, RPF Response to First Review, pages 14-15

Site Map To Accompany Engineering Geologic Review of THP 1-16-079 NAP

Figure: 4



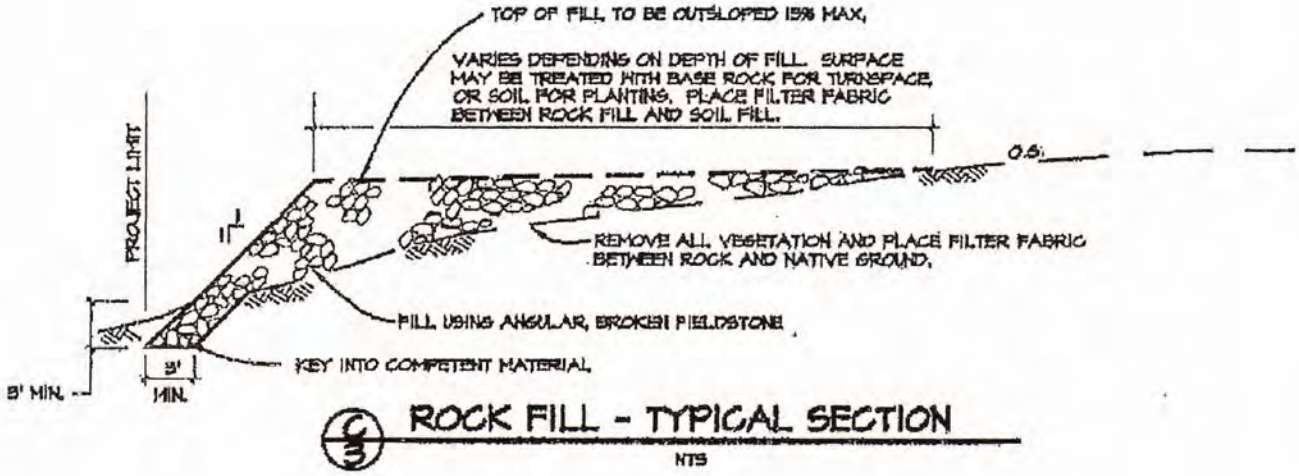
RECEIVED
AUG 25 2016
COAST AREA OFFICE
RESOURCE MANAGEMENT

Base Map: Modified from THP 1-16-079 NAP, RPF Response to First Review, pg. 91

Date: Sep. 2016	Site Map To Accompany Engineering Geologic Review of THP 1-16-079 NAP	Figure: 5
Approved By: CGS		

Base Map: Modified from Napa County, LiDAR, 2003, collected by National Center for Airborne Laser Mapping (NCALM).

Date: Sep. 2016	Site Map	Figure:
	To Accompany	
Approved By: CGS	Engineering Geologic Review of THP 1-16-079 NAP	6



C/3 ROCK FILL - TYPICAL SECTION

NTS

SPECIAL NOTE-RSP

Rock Slope Protection (RSP) shall be locally gathered field stone (25, lb), or class light, as defined in Caltrans Standard Specifications, Sec. 72-2.02. A non woven filter fabric (Mirafi 140 N, or equal) shall be placed between all RSP and earthen material.

Base Map: Modified from THP 1-16-079 NAP, RPF Response to First Review, pg. 5

Date: Sep. 2016	Sketch Schematic Cross Section Rock Fill - Typical Section Erosion Control Plan THP 1-16-079 NAP	Figure: 7
Approved By: CGS		

APPENDIX A

NOP and Comment Letters

California Department of Forestry and Fire Protection

To: State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

From: Bill Solinsky
CAL FIRE, Resource Management
P.O. Box 944246
Sacramento, CA 94244-2460

Subject: Notice of Preparation of a Draft Environmental Impact Report
Le Colline Vineyard Conversion Project
April 13, 2016

The California Department of Forestry and Fire Protection (CAL FIRE) is the Lead Agency and Napa County is a Responsible Agency for the preparation of an Environmental Impact Report (EIR) for the Le Colline Vineyard Conversion Project (Proposed Project) in compliance with the California Environmental Quality Act (CEQA). Consistent with CEQA Guidelines Section 15082, CAL FIRE, as Lead Agency, has prepared this Notice of Preparation (NOP) to inform all responsible and trustee agencies that an EIR will be prepared. The purpose of the NOP is to describe the Proposed Project and potential environmental effects in order to allow agencies and interested parties to provide input on the scope and content of the EIR. A copy of this NOP and the figures referenced herein is provided on CAL FIRE's website: http://calfire.ca.gov/resource_mgt/resource_mgt_EPRP_PublicNotice.php. Comments on this NOP are due to CAL FIRE by 5:00 PM on May 13, 2016.

Project Summary

The purpose of the Proposed Project is to convert approximately 35 gross acres to 28 net acres of commercial vineyard with an additional 1.0 acre of disturbance that includes the construction of three new access driveways and improvement of an existing dirt trail. Therefore, the total project area will be 36± acres (Project Site). A Timberland Conversion Permit (TCP) is required for the Project Site, which triggers preparation of a CEQA document for the Proposed Project. Given the potential for environmental impacts, an Environmental Impact Report (EIR) is being prepared. A Napa County Erosion Control Plan (ECP) is also required for the Proposed Project. The environmental impacts of the TCP, the ECP, and the development of the vineyard on the Project Site will be evaluated against the CEQA baseline of the Project Site. In addition, a Timber Harvest Plan (THP) is being prepared concurrently for the harvest of the 32 gross acres and will be processed separately by CAL FIRE. The THP will be evaluated by CAL FIRE through a CEQA equivalent process consistent with the Forest Practice Rules. The EIR will include the THP, the TCP, and the ECP as attachments.

Project Location

The Project Site is located on an approximately 88.3-acre property within the un-sectioned portion of Township 8N Range 5W of the Mount Diablo Base and Meridian (MDBM). The property is comprised of four parcels identified as Napa County APNs 024-300-070, 024-300-071, 024-300-072, and 024-340-001. The property is located at 300 Cold Springs Road, just southeast of the Town of Angwin in northern Napa County, California, as shown in **Figure 1**.

Environmental Setting

Land uses in the vicinity of the property include rural residences, vineyards, wineries, and open space. Property elevations range from approximately 1,415 feet to 1,750 feet above mean sea level. Soils on the property are predominantly Forward gravelly loam and Kidd loam. The slopes on the Project Site range from 7 to 29 percent. The

property drains to the Conn Creek watershed, tributary to Lake Hennessey thence the Napa River. Conn Creek runs along the southwest property line. There are four county-definitional streams and three Class III watercourses on the property; setbacks have been provided from these drainages in accordance with the Napa County Conservation Regulations and Forest Practice Rules. A map of the Project Site is included as **Figures 2** and **3**.

As part of the EIR process, a report on the biological resources within the Project Site and immediate surrounding area has been prepared. The following habitats have been identified to date within the property: California Annual Grasslands Alliance, Mixed Oak Alliance, Douglas Fir Alliance, Chamise Alliance, Freshwater Wetland, Rock Outcrop, and Ponderosa Pine Alliance. One of the parcels includes a residence and associated landscaping. In addition, two special status plant species have been located within the property. Impacts to these habitats and special status species will be addressed in the EIR.

General Plan/Zoning Designations
The Project Site is zoned Agricultural Watershed (AW).

Project Description
The Proposed Project will convert approximately 32 acres of timberland and 4 acres of brush to a commercial vineyard within an 88.3-acre property. The 35± gross acres plus an additional 1.0 acre of road improvements result in a total Project Site of 36± acres. Within the Project Site, 28± net acres of vineyards will be planted within five vineyard blocks (**Figure 3**); vineyard blocks would be accessed via the existing driveway at Winding Way and the existing driveway off of Cold Springs Road. The vineyard blocks will include wine grape vines as well as internal farm avenues and space for vineyard maintenance operations; therefore, the net area of the vineyard will be approximately 28 acres. The establishment of the vineyard as part of the Proposed Project is consistent with the current Napa County zoning designation of Agricultural Watershed (AW).

The Project Site is not located within a Timberland Production Zone (TPZ). However, since the Proposed Project would convert "non-TPZ timberland to a non-timber growing use" through timberland operations in which "future timber harvests will be prevented or infeasible because of land occupancy and activities thereon," a TCP and approval is required from CAL FIRE consistent with the Z'Berg-Nejedly Forest Practice Act (Division 4, Chapter 8, Public Resources Code) and California Forest Practice Rules (Title 14, California Code of Regulations). CAL FIRE will therefore be the CEQA Lead Agency on the EIR.

Harvested timber will be shipped to saw mills and ports in Northern California. All non-merchantable trees and vegetation would be removed, chipped, and/or burned on-site, consistent with CAL FIRE, Napa County, and San Francisco Bay Area Air Quality Management District standards. Suitable forest products such as sawlogs, firewood and wood chips will be marketed as is economically feasible. Wood products leaving the site would be transported in logging trucks. Material leaving the site would exit via Cold Springs Road and Winding Way. New internal farm roads would be limited to access between blocks; no new access points to county roads are required. As a result of implementation of the ECP and the Forest Practice Act, post-project sediment erosion conditions and peak hydrological runoff are projected to be below pre-project conditions; these aspects are detailed in the hydrological report and sediment report that have been prepared for the Proposed Project and will be included with the EIR as attachments.

Chapter 18.108 of the Napa County Code (Conservation Regulations) requires an ECP be prepared by a Licensed Civil Engineer for the Proposed Project and approved by Napa County because slopes on the Project Site are

greater than 5 percent. Consequently, Napa County will be a Responsible Agency for the EIR.

Environmental Factors Potentially Affected

Anticipated impacts of the Proposed Project on the following list of resource areas will be analyzed in the EIR per CEQA Guidelines (Title 14 CCR Division 6, Chapter 3). The impacts of the Proposed Project will be determined by evaluating against the CEQA baseline, which is the Project Site as it currently exists (prior to the THP).

Aesthetics: The Project Site is not visible by vehicles traveling on Cold Springs Road. However, the proposed vineyard may be visible from surrounding residences. An analysis of potential impacts to aesthetics from the Proposed Project will be provided in the EIR.

Agriculture and Forestry Resources: The impacts of the Proposed Project to these resources will be a primary subject of the EIR. An analysis of impacts to agricultural and forestry resources in the vicinity of the Project Site and local region will be included in the EIR.

Air Quality: Non-merchantable trees and vegetation will be removed, chipped, and/or burned on-site, consistent with Napa County and San Francisco Bay Area Air Quality Management District standards. An analysis of potential impacts to air quality from construction and operation of the Proposed Project will be provided in the EIR.

Biological Resources: An analysis of potential impacts to biological resources as a result of the construction and operation of the Proposed Project will be provided in the EIR.

Cultural Resources: A preliminary cultural resources survey of the Project Site did not identify any significant historic or cultural resources on the Project Site. One isolated projectile point made of obsidian and one isolated obsidian flake tool were located onsite, neither of which constitutes a significant historic or cultural resource. Further analysis of potential impacts to cultural resources as a result of the Proposed Project will be provided in the EIR.

Geology/Soils: An ECP is required to be prepared for the Proposed Project, which includes erosion control measures to be implemented during construction and operation of the vineyard. Further analysis of potential impacts to local geology/soils will be provided in the EIR.

Greenhouse Gas Emissions: An analysis of potential impacts due to the Proposed Project's greenhouse gas emissions attributed to construction, operation, and tree canopy removal will be provided in the EIR.

Hazards and Hazardous Materials: An analysis of hazards and hazardous materials as they pertain to construction and operation of the Proposed Project will be provided in the EIR.

Hydrology/Water Quality: The property is located in the Conn Creek watershed, a County-designated Sensitive Domestic Water Supply Drainage. An analysis of impacts from the Proposed Project to local hydrology and water quality will be provided in the EIR. Particular attention will be paid to the Napa River Section 303(d) standards. Groundwater from two existing wells will be the water source for the vineyard and will be discussed further in the EIR.

Land Use/Planning: No significant impacts are anticipated. As stated above, the Proposed Project would result in the development of a vineyard within the 36-acre Project Site, which is consistent with the current Napa County zoning designation, Agricultural Watershed. An analysis of impacts to land use/planning due to the Proposed Project

will be provided in the EIR.

Mineral Resources: No known mineral resources that are of State, regional, or local value are identified on or within the vicinity of the Proposed Project site, and therefore no significant impacts are anticipated. No further analysis will be provided in the EIR.

Noise: No significant impacts are anticipated. However, given the proximity of existing residences, an analysis of noise impacts to the Project Site and vicinity as a result of construction and operation of the Proposed Project will be provided in the EIR.

Population/Housing: The Proposed Project would not induce substantial population growth and would displace neither existing housing nor people; therefore, no significant impacts are anticipated. No further analysis will be provided in the EIR.

Public Services: The Proposed Project would not result in a substantial increase of demand on public services, and therefore no significant impacts are anticipated. No further analysis will be provided in the EIR.

Recreation: The Proposed Project would not include construction of any recreational facilities and would not increase the use of existing recreational facilities, and therefore no significant impacts are anticipated. No further analysis will be provided in the EIR.

Transportation/Traffic: Wood products leaving the site would be transported in logging trucks. Material leaving the site would exit via Cold Springs Road and Winding Way. New internal farm roads would be limited to access between blocks; no new access points to county roads are required. An analysis of transportation/traffic issues as they pertain to construction and operation of the Proposed Project, including the off-site hauling of logs due to the THP, will be provided in the EIR.

Utilities/Service Systems: The Proposed Project would not result in any additional demands on utilities and service systems. Groundwater will be pumped from existing on-site wells and serve as the irrigation water source, and no wastewater will be generated. Therefore, no significant impacts are anticipated, and no further analysis will be provided in the EIR.

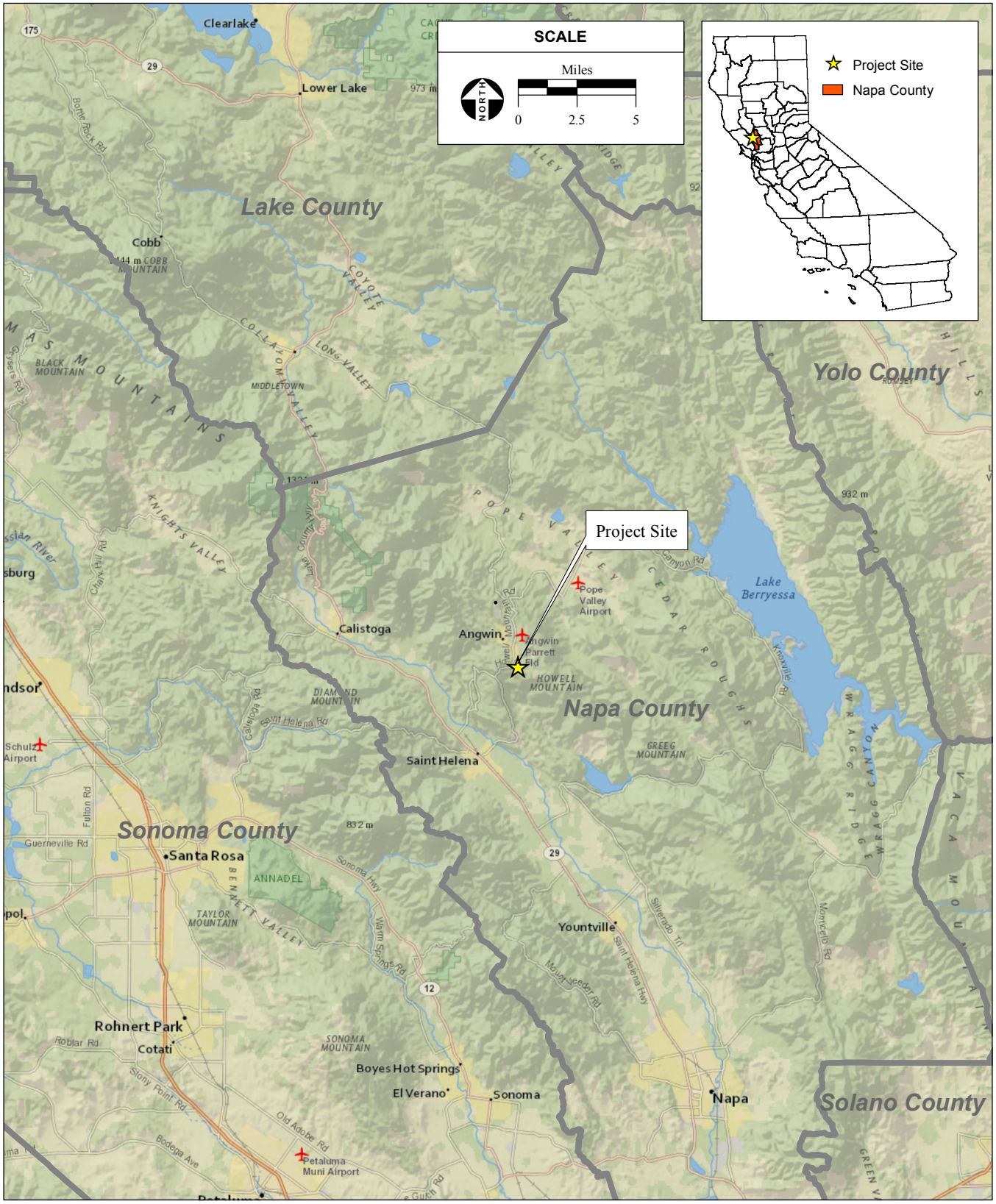
Mandatory Findings of Significance: A complete analysis of mandatory findings of significance, including cumulative impacts of the Proposed Project, will be provided in the EIR.

In order for comments to be considered, please submit written comments no later than **5:00 PM** on **May 13, 2016** to:

Bill Solinsky
CAL FIRE, Resource Management
P.O. Box 944246
Sacramento, CA 94244-2460

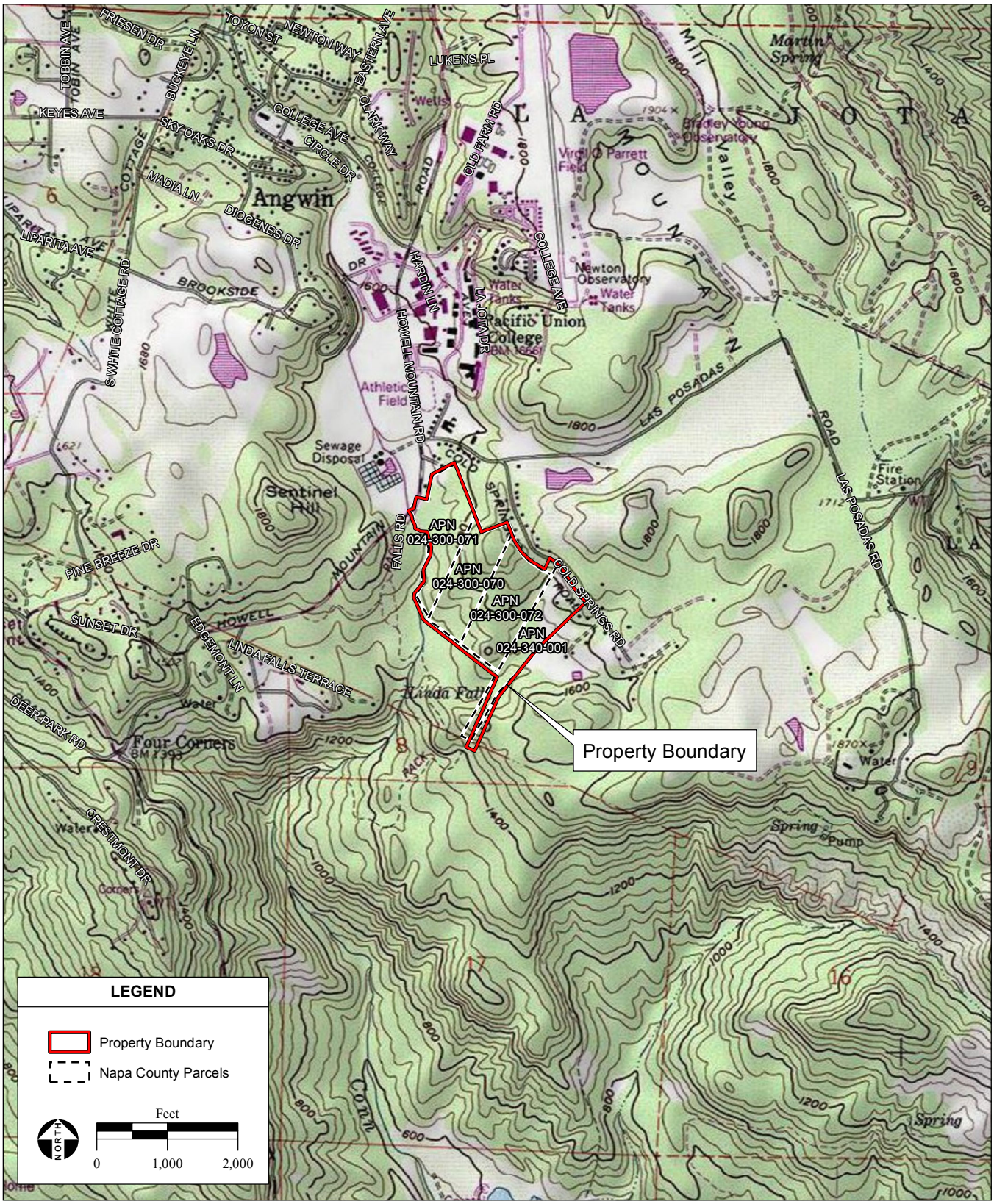
Email: SacramentoPublicComment@fire.ca.gov (Please include "Le Colline Vineyard" in subject line).

Comments by Fax will not be accepted.



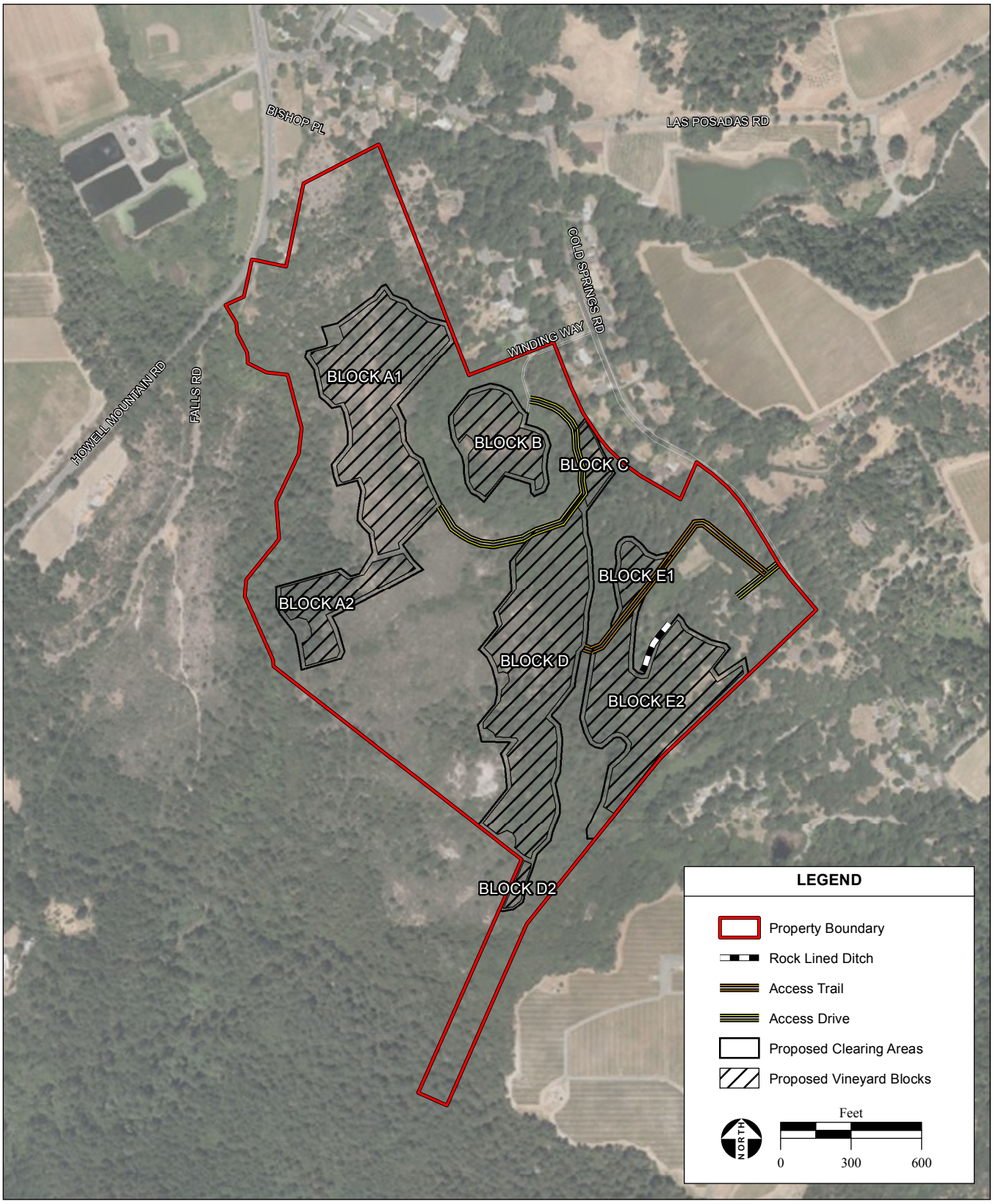
SOURCE: NatGeo, 2015; AES, 2015

Figure 1
Regional Location



SOURCE: "Saint Helena, CA" USGS 7.5 MinuteTopographic Quadrangle, T8N, R5W, Unsectioned Area of Saint Helena, Mt. Diablo Baseline & Meridian; ESRI Data, 2015; AES, 2015

Figure 2
Site and Vicinity



SOURCE: Microsoft aerial photograph, 2/4/2012; Napa Valley Vineyard Engineering, Inc., 2015; ESRI Data, 2015; AES, 2015

Figure 3
Project Site Boundary

A Tradition of Stewardship
A Commitment to Service

Planning, Building & Environmental Services

1195 Third Street, Suite 210
Napa, CA 94559
www.countyofnapa.org

David Morrison
Director

May 12, 2016

Bill Solinsky
CAL FIRE
Division of Resource Management
P.O. Box 944246
Sacramento, CA 94244-2460

RE: N.O.P. COMMENTS
Le Colline Vineyard Conversion: File No. P14-00410-ECPA
300 Cold Springs Road: APNs 024-300-071, -072, -073, and 024-340-001

Dear Mr. Solinsky:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) for the Environmental Impact Report (EIR) that will be prepared for the Le Colline Vineyard Conversion and Timber Harvest Plan Application. The project involves the removal of timberland and other native vegetation including oak woodland, Douglas fir forest, and chaparral and development of approximately 36 acres of new vineyard and related infrastructure.

As a Responsible Agency (California Code of Regulations [CCR] Section 15381) under the California Environmental Quality Act (CEQA) it is the County's obligation to review and decide on the permit for the proposed hillside vineyard, an Agricultural Erosion Control Plan application (ECPA), for the development of 36 acres of new vineyard as referenced in the ECPA application. It is the County's intention, via this correspondence, to ensure that environmental review of the project, pursuant to CEQA, considers impacts associated with entire project including the proposed vineyard development and subsequent vineyard operations (CCR Section 15063.1). For the County to rely on the EIR for the review and approval of the County ECPA permit, the EIR will need to adequately disclose any potential impacts of the entire project and include appropriate mitigation measures for those impacts.

A CEQA document that does not adequately disclose and assess potential impacts of the entirety of the project could result in additional environmental review when the County conducts its discretionary review of the associated permit noted above, which could result in delays to the applicant and project implementation, as well as, potential project modifications. In addition, it is the County's obligation to only approve projects that are consistent with the policies set forth by our General Plan (2008). As such, the County would like you to consider the following comments regarding the NOP as they relate to CEQA and General Plan consistency.

A. Biological Resources: The comments below are based on the County's review of the Kjeldsen Biological Resources Report, dated July 2015, received as a supplemental attachment to the ECPA. These comments should be addressed through a revised biological report and/or within the Biological Resources section of the EIR.

i. Napa County Conservation Policy CON-24 requires preservation, to the extent feasible, of other significant vegetation that occur near the heads of drainages or depressions to maintain diversity of vegetation type and wildlife habitat as part of agricultural projects. Doug fir, Ponderosa pine trees, and oak trees at the westerly edge of Blocks A1, A2, D, and E, typically areas where sediment basins are placed, are ideal candidates to meet this preservation requirement and they should be avoided.
ii. Napa County Conservation Policy CON-24 also requires retention of oak woodland to the extent feasible. Therefore, rationale will need to be provided stating why impacts to oak woodlands cannot be avoided and the Planning Director will make the ultimate determination of infeasibility. If portions of oak woodlands are deemed infeasible to retain, then replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio is required. Currently, no infeasibility rationale has been provided and the current project would result in 8 acres of oak woodland impacts and 12 acres of avoidance, which does not meet the second step of the CON-24 hierarchy (2:1 preservation requirement) in the event avoidance, in whole or in part, is infeasible. Lastly, it is not clear that there are any opportunities for replacement within the project parcels, and on this subject the report is silent.
iii. Please provide an expanded discussion of cumulative woodland loss; considering the setting and surrounding vineyard development and potential cumulative impacts (in particular cumulative loss of forest land). As noted in *A.ii.*, there are opportunities for further woodland avoidance near Conn Creek and at the heads of waters of the U.S./State that should be considered.
iv. Wildlife Movement: The EIR should evaluate the project's potential impact on wildlife movement. While it is acknowledged that proposed wildlife exclusion fencing is limited to the footprint of the proposed vineyard blocks, the EIR should consider the potential impacts to small mammals as a result of the installation of such fencing. Ultimately, the fencing should be designed to ensure that impacts to wildlife movement remain less than significant.

B. Water Supply Availability and Use:

i. The EIR should consider drought conditions (dry years) in assumptions made related to rainfall and recharge potential to adequately analyze potential impacts to groundwater, and where necessary, related summer time base flows of nearby watercourses. The EIR will need to include the estimated project water use, including existing and proposed uses of water on the project parcel(s), shall include estimates for normal and dry water years. If an alternative water source will be used for dry years (e.g. trucked in water for non-potable uses), the alternate source, source location and estimated water volume shall be disclosed.

C. Land Use and Planning

i. Please note that the EIR should include a discussion of how the proposed project and mitigation measures achieves or are otherwise consistent with applicable County Goals, Policies and Regulations:
   Goal CON-2: Maintain and enhance the existing level of biodiversity.
   Goal CON-3: Protect the continued presence of special-status species, including special-status plants, special-status wildlife, and their habitats.

Policy CON-13: The County shall require that all discretionary residential, commercial, industrial, recreational, agricultural, and water development projects consider and address impacts to wildlife habitat and avoid impacts to fisheries and habitat supporting special-status species to the extent feasible. Where impacts to wildlife and special-status species cannot be avoided, projects shall include effective mitigation measures and management plans including provisions to:

d) Provide protection for habitat supporting special-status species through buffering or other means.
e) Provide replacement habitat of like quantity and quality on- or off-site for special-status species to mitigate impacts to special-status species.
f) Enhance existing habitat values, particularly for special-status species, through restoration and replanting of native plant species as part of discretionary permit review and approval.

Policy CON-17: Preserve and protect native grasslands, serpentine grasslands, mixed serpentine chaparral, and other sensitive biotic communities and habitats of limited distribution. The County, in its discretion, shall require mitigation that results in the following standards:

a) Prevent removal or disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species.
b) In other areas, avoid disturbances to or removal of sensitive natural plant communities and mitigate potentially significant impacts where avoidance is infeasible.
e) Require no net loss of sensitive biotic communities and habitats of limited distribution through avoidance, restoration, or replacement where feasible. Where avoidance, restoration, or replacement is not feasible, preserve like habitat at a 2:1 ratio or greater within Napa County to avoid significant cumulative loss of valuable habitats.

Policy CON-24: Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat through appropriate measures including one or more of the following:

a) Preserve, to the extent feasible, oak trees and other significant vegetation that occur near the heads of drainages or depressions to maintain diversity of vegetation type and wildlife habitat as part of agricultural projects.
c) Provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio when retention of existing vegetation is found to be infeasible. Removal of oak species limited in distribution shall be avoided to the maximum extent feasible.

Policy CON-27: The County shall enforce compliance and continued implementation of the intermittent and perennial stream setback requirements set forth in existing stream setback regulations.

Policy CON-55: The County shall consider existing water uses during the review of new water uses associated with discretionary projects, and where hydrogeologic studies have shown that the new water uses will cause significant adverse well interference or substantial reductions in groundwater discharge to surface waters that would alter critical flows

to sustain riparian habitat and fisheries or exacerbate conditions of overdraft, the County shall curtail those new or expanded water uses.

Chapter 18.108 Napa County Conservation Regulations (Section 18.108.010 NCC) in part encourages: the preservation of the natural resources of the county of Napa; minimization of grading operations and other such man-made effects in the natural terrain; preservation of riparian areas and other natural habitat by controlling development near streams and watercourses; and, development which minimizes impacts on existing land forms and preserves existing vegetation.

D. Transportation and Circulation/Safety

i. The EIR should address whether there would be a less than significant impact on traffic and circulation as a result of the proposed project, such as impacts associated with the number of truck and worker trips associated with vineyard development and installation, and subsequent ongoing vineyard operation to support that conclusion. The EIR should include information regarding the approximate anticipated equipment and trips necessary to implement and maintain the proposed project. This information should be incorporated when assessing potential construction and operation air quality and GHG emission impacts associated with the proposed project. In addition, the EIR should address whether the proposed access routes during construction and operations increase hazards as well as whether the access design is consistent with County policies as they relate to public safety.

In short, the intent of these comments is to outline the sufficiency of the environmental review document in identifying and analyzing the potential impacts of the entire project and the ability of the County to utilize the document in reviewing and issuing associated permits necessary for project implementation. In addition, its intent is to highlight the County's obligation to only approve projects that are consistent with the goals and policies set forth by the Napa County General Plan (2008).

I would like to thank you for providing the County an opportunity to review and comment on the NOP and eventually the draft EIR. If you should have any questions regarding any of the above items, please feel free to contact me at your convenience at 707-299-1788 or wesley.salter@countyofnapa.org.

Sincerely,

Wesley Salter
Planner III

Cc: Brian Bordona, Supervising Planner, Engineering and Conservation Division (email only)
Drew Aspegren, Napa Valley Vineyard Engineering, Inc., 176 Main Street, St. Helena CA 94574 (email only)
Scott Butler, Environmental Resource Management, 889 Hwy 20-26, Ontario, OR 97914 (email only)

May 13, 2016

Mr. Bill Solinsky
CAL FIRE, Resource Management
PO Box 944246
Sacramento, CA 94224-2460

Subject: Le Colline LLC Vineyard
Assessor's Parcel: 024-300-071,072,073 & 024-340-001

Dear Mr. Solinsky:

The City of Napa Public Works Water Division (Water Division) has reviewed the above mentioned project and is unable to determine that the proposed erosion control protection measures are sufficient to safeguard against an increase (by no more than one percent individually or ten percent cumulatively) of sediment or other pollutants into the Water Division's Lake Hennessey reservoir. The City has great concern over increased introduction of nutrients and dissolved pollutants into the municipal water supply such as phosphates, nitrates and sulfates used in agricultural practices. As State water quality compliance policies stiffen, the Water Division continues to monitor the reservoir's water quality and will consider the ten percent cumulative impacts amidst continual data collection, analysis and reporting per Napa County Ordinance CON 18.108.027 Sensitive Domestic Water Supply Drainages. The owner shall be responsible for ensuring that all erosion control measures remain intact and are routinely maintained to prevent exceedance of said runoff levels.

The Water Division is a public water supplier that owns and operates Lake Hennessey, which is the main source of supply used to serve water to homes and workplaces, to provide fire protection, and to meet other needs of more than 86,000 people throughout Napa Valley. The Water Division appreciates the attention to detail in the submitted erosion control plans including the attenuation basins. However, the Water Division remains concerned that the proposed project will cause significant adverse impacts associated with increased dissolved nutrients and pollutants mobilized into the public water supply of Lake Hennessey despite the mitigation measures aimed at sediment described in the erosion control plan. To insure effectiveness of the erosion control measures are maintained throughout the life of the project sufficient to avoid impacts to the water supply, the Water Division requires monitoring and sample analyses of the creek both upstream and downstream of the project outfalls. The samples shall be analyzed at minimum for the presence and concentrations of the following parameters:

- Turbidity
- Specific conductance
- Phosphates

- Sulfates
- Nitrogen (as ammonia)
- pH

Frequency: three times each year as follows

- Within 72 hours after the first major storm event (1 or more inches of rainfall within 24 hours) of the wet season Oct 1 – April 30th
- Within the period Jan 1-31st
- Within the period May 1-30th

Location: Upstream of the project site and downstream of the outfall and runoff area of the project site. Locations must remain consistent each year and be identified using GPS coordinates. Analyses must be performed at an ELAP-certified laboratory and the results submitted within 30 days of samples being gathered and include the chain of custody. Data shall be submitted to:

City of Napa Water Division
Attn: Water Quality Manager
PO Box 660
Napa, CA 94559

The Water Division owns and operates a certified laboratory at our water treatment facility and is amenable to providing empty sample bottles and performing the analyses as cost control measures.

Please contact me at 257-9319 if you have any questions or require additional information.

Respectfully,

Joy Eldredge, P.E.
Water General Manager

cc: Michael Hether
scoop/file

CITY of NAPA
www.cityofnapa.org/water

PUBLIC WORKS DEPARTMENT
WATER DIVISION
1340 Clay Street
Mailing Address:
P.O. Box 660
Napa, California 94559-0660
Phone: (707) 257-9521
Fax: (707) 258-7831
California Relay Service (CRS) Dial 7-1-1

July 29, 2015

Mr. Brian Bordona
County of Napa
Planning, Building & Environmental Sciences
1195 Third Street, Room 210
Napa, CA 94559-3092

Subject: Le Colline LLC Vineyard Conversion (P14-00410-ECPA)
Assessor's Parcel: 024-300-071,072,073 & 024-340-001

Dear Mr. Bordano:

The City of Napa Public Works Water Division (Water Division) has reviewed the above mentioned project and is unable to determine that the proposed erosion control protection measures are sufficient to safeguard against an increase (by no more than one percent individually or ten percent cumulatively) of sediment or other pollutants into the Water Division's reservoir (Lake Hennessey). The City has great concern over increased turbidity levels in the creeks, the introduction of phosphates as used for fertilizers as well as pesticides used in agricultural practices. As State water quality compliance policies stiffen, the Water Division continues to monitor the reservoir's water quality and will consider the ten percent cumulative impacts amidst continual data collection, analysis and reporting. The owner shall be responsible for ensuring that all erosion control measures remain intact and are routinely maintained to prevent exceedance of said runoff levels.

Details regarding the fertilizer brand was not provided with the submitted plan. It is known the most effective agricultural fertilizers have a lasting residual and therefore are required to include Prop 65 language regarding potential harmful health effects. These are also the most persistent in the environment and detrimental to runoff water quality. Attached is one example of a Product Data Sheet for a fertilizer with Ammonium phosphate sulfate (16-20-0.)

The Water Division is a public water supplier that owns and operates Lake Hennessey, which is the main source of supply used to serve water to homes and workplaces, to provide fire protection, and to meet other needs of more than 86,000 people throughout Napa Valley. The Water Division appreciates the attention to detail in the submitted erosion control plans including the attenuation basins. However, the Water Division remains concerned that the proposed project will cause significant adverse impacts to the public water supply from Lake Hennessey despite the robust mitigation measures described in the erosion control plan. To insure erosion control measures are maintained throughout the life of the project sufficient to avoid impacts to the water supply, the Water Division requires monitoring and sample analyses of the creek both upstream and downstream of the project outfalls. At owner's expense, the samples shall be analyzed at minimum for the following parameters:

- Turbidity

- pH
- Phosphates
- Ammonia
- Sulfur
- Total Nitrogen
- TOC
- Acute toxicity

Frequency: every 2 months for the period from Nov 1 – May 1 each year. Subject to increased monitoring frequency if downstream analytical results exceed upstream results.
Location: Upstream of the project site and immediately downstream of the outfall and runoff area of the project site. Locations must remain consistent each year and be identified using GPS coordinates. Analyses must be performed at an ELAP-certified laboratory and the results submitted within 30 days of samples being gathered and include the chain of custody. Data shall be submitted to:

City of Napa Water Division
Attn: Water Quality Manager
PO Box 660
Napa, CA 94559

Please contact me at 257-9319 if you have any questions or require additional information.

Respectfully,

Joy Eldredge, P.E.
Water General Manager

cc: Michael Hether
scoop/file

Simplot

PRODUCT DATA SHEET

Simplot agropell AGRONOMICALLY SUPERIOR NPK FERTILIZERS

AMMONIUM PHOSPHATE
16-20-0
with 13% Sulfur

GUARANTEED ANALYSIS

Total Nitrogen (N) 16.00%
16.00% Ammoniacal Nitrogen
Available Phosphate (P_2O_5) 20.00%
Sulfur (S) 13.00%

Derived from Monoammonium Phosphate and Ammonium Sulfate.

Information regarding the contents and levels of metals in this product is available on the Internet at http://www.regulatory-info-jr.com

This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986, requires notification of potential exposure to substances identified by the State of California as causing cancer, birth defects or other reproductive harm.

PHYSICAL CHARACTERISTICS

		US	Metric
Lbs. of Nutrients (Ton / Tonne):	Nitrogen (N)	320	358
	Phosphate (P_2O_5)	400	448
	Sulfur (S)	260	291
	Combined Nutrient Total	**980**	**1097**
Bulk Density (lbs per ft³ / kg per m³):	Poured	60	969
	Packed	62	1001

Solubility in Water: Better than 90%.

Granule Size: 98% retained by Tyler screen mesh #16. (This is an in-line product of uniformly sized granules.)

USES

1. An excellent fertilizer for use on soils and crops requiring nitrogen, phosphate and sulfur. The nitrogen is long lasting and the phosphate and sulfur are in forms that are immediately available to the plant.
2. Adapts to a wide range of application methods: fall plow-down, spring preplant broadcast, banding at time of planting, drilled in with small grain seed, side dressed and broadcast on pasture or grass alfalfa stubble.
3. Ideal combination of N, P_2O_5 and S to apply as a starter fertilizer on most crops.
4. Can be used in custom blending as a source of nitrogen, phosphate and sulfur.
5. For specific application rates follow the recommendation of a qualified individual or institution, such as, but not limited to, a certified crop advisor, agronomist, university crop extension publication, or apply according to recommendations in your approved nutrient management plan.

ADVANTAGES

1. High sulfur content–contains sulfate sulfur the type utilized by plants. It also makes soils more friable, improves moisture penetration, aids in crop residue breakdown, increases the availability of other nutrients and helps reclaim alkaline soils.
2. High water soluble phosphate–goes to work quickly and is utilized most efficiently by plants.
3. Long lasting non-leachable nitrogen–the nitrogen is in the ammonium form which resists leaching and provides nitrogen to the plant over a longer period of time.
4. Low volatility–form of nitrogen and phosphate that resists volatility.
5. Nitrogen and Phosphate combination improved nutrient uptake–ammoniacal form of nitrogen combined with phosphate helps the plants to utilize the phosphate more efficiently.
6. Monoammonium phosphate–the risk of fertilizer injury to germinating seeds is reduced.
7. Acidic fertilizer–has a slight acidic effect which helps offset nutritional problems in calcareous soils.

BULK STORAGE PRECAUTION

This product is not suitable for storage in overhead/upright free standing bins. The J.R. Simplot Company will not warrant or guarantee product stored in this manner and will not be subject to any claims against set-up product, damaged bins, labor to remove product or other damages and liabilities. An example of overhead/upright bins include but not limited to Stor-King, Wheatland, Meridian and others. This warning includes bins that have special "Fertilizer Coatings" to the internal walls to promote free flowing of the contents.

SAFETY

Slight abrasion may result from eye contact or prolonged skin contact. Not generally considered toxic. Nonflammable.

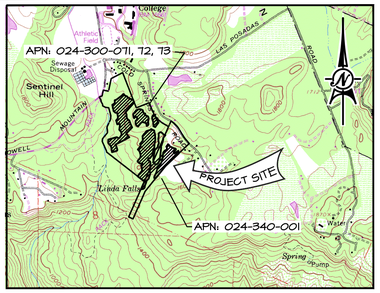
14060_ammoniumsulfate_16200_us-metric_R3-6-2012

APPENDIX B

EROSION CONTROL PLAN

LE COLLINE VINEYARD
EROSION CONTROL PLAN
FOR NEW VINEYARD DEVELOPMENT

SHEET INDEX



PORTION OF ST. HELENA 7.5 MIN. QUAD MAP

Vicinity Map

1" = ±2000'

Narrative

This project consists of A Timberland Conversion (pursuant to a Timber Conversion Permit) and the development of approximately 32.8 gross acres (±25.0 net acres) of new vineyard within APNS 024-300-071, 72, 73, and 024-340-001, a total holding of 88.34 acres, located at 300 Cold Springs Rd., Angwin. The project includes construction of three new access drives and improvement of an existing dirt trail, for a total project area of 33.8 acres. The parcels consist of brush and tree canopy, and existing access drives. Parcel 024-340-001 includes a residence with landscaping. There is existing access from Cold Springs Rd. and from Winding Way. Existing ground slopes within the project area range from 7% to 29%. The vinerows will run northeast/southwest and will be planted 6' apart. Blocks C & D2 shall be hand-farmed with limited use of motorized equipment. Cultivation practices are described below under Permanent Erosion Control Measures. A new drip irrigation system will be installed and an existing irrigation well will serve as the water source. Water use on the new vineyard is expected to be ±11.7 acre-feet per annum (afa); total use on the holding is expected to be 12.5 afa.

The USGS St. Helena 7.5 minute Quad Map shows one blueline stream (Conn Creek) running along the southwest property line, four county definition streams and three Class III streams (as identified by CalFire) within the parcels and appurtenant to the project. Setbacks have been provided in accordance with the Napa County Conservation Regulations. The project drains toward Conn Creek and lies within the Conn Creek-Upper Reach and Conn Creek Main Fork subwatersheds.

Soils within the block boundaries have been classified in the USDA Soil Conservation Service's Napa County Soil Survey, as Forward gravelly loam and Kidd loam.

Special Status Species identified in the Biological Report prepared by Kjeldsen Biological Consulting shall be avoided. Orange construction fence shall be placed around those plants by the owner, and the it shall be checked and approved by Napa County PBES prior to construction.

No Cultural Resources occur in the project area, as concluded in the Cultural Resources Study prepared by Origer & Associates.

No Slope Instability is evident in the project area, as concluded in the Engineering Geological Evaluation prepared by Gilpin Geosciences.

Vegetation Removal consists of brush and resident grasses, and trees as identified in the associated Timber Conversion Plan. All organic material to be burned or chipped shall be stacked at strategic locations within the cleared area. Burning of the organic material only shall take place after obtaining approval from all the governing agencies.

Ground preparation includes ripping to a maximum depth of 36" and tilling. Rock generated during land preparation will be used to construct a rock fill along the lower boundary of Block A as shown on the plan, and may be used for road surfacing and other erosion control features. Soil amendments shall be added as specified in the *Project Notes*.

Wildlife Exclusion Fencing may be installed around the vineyard, as shown on the plan, with gates and/or cattle guards provided at access locations. For convenience, the fence may be routed around trees and other imposing physical features. Fence shall be 6" min. wire mesh.

Temporary Erosion Control Measures consist of the installation of fiber rolls and the application of straw mulch where seeding occurs. The installation of all **fiber rolls** shall be completed in accordance with the appropriate detail along the contours at locations shown on the plan, prior to the rainy season at the end of years P-1 and P. They shall be left in place through the winter after planting after which they may be removed. A **straw mulch** cover shall be applied over all open and/or disturbed and seeded areas at the rate specified in the seeding requirements.

Permanent Erosion Control Measures consist of the following:

1) Clean and repair existing drainage features as needed.

2) Diversion ditches shall be constructed where shown on the plan, and maintained throughout the life of the vineyard. The ditches shall not be tilled or disked during any vineyard operations.

3) Rock lined ditches and rock stabilization at low points in the vineyard avenues shall be constructed of locally gathered fieldstone in accordance with the appropriate details. Some locations of rock stabilization are shown on the plan. Others may be discovered during construction. Rock structures shall remain in place as permanent features.

4) Construction of water bars where shown on the plan in accordance with the appropriate detail.

5) Attenuation basins shall be constructed where shown on the plan in accordance with the appropriate detail. Level water spreaders or energy dissipators shall be installed at the basin outlets in accordance with the appropriate detail.

6) A winter cover crop shall be planted within the new vineyard areas in year P-1. At the end of the growing season in year P, a permanent cover crop shall be planted within the new vineyard blocks (refer to cultivation chart under *Project Notes)*. In Blocks A thru D, the cover crop may be mowed and spot sprayed around the base of each vine using springtime applications of post-emergent contact sprays. Weeds within those blocks may also be spot sprayed, if desired. No strip spraying shall occur and NO PREEMERGENT SPRAYS SHALL BE USED. In Block E, the cover crop may be mowed, but NO SPRAYING shall occur within Block E. As a normal cultural practice no disking, ripping or other tillage shall occur within the vineyard once the permanent cover crop has been established. No areas outside the vineyard blocks, including avenues and turnspaces, shall be disked or sprayed at any time. Using this method a minimum ground cover of 80% will be obtained each winter in Blocks A thru D, and a minimum of 85% will be obtained in Block E. From time to time (every three or four years), it may be necessary to disk the cover crop to open up the ground or to re-establish proper ground cover. Should this be necessary, notification shall be provided to Napa County and Napa County RCD, and the work shall proceed as prescribed in Napa County Conservation, Development and Planning Department guidelines, dated April 8, 2004, entitiled "Protocol for Replanting/Renewal of Approved Non-Tilled Vineyard Cover Crops".

7) Implementation and adherence to the **Annual Winterization** program presented in the Project Notes.

Costs: The total cost of all erosion control measures is estimated to be $1500-2000/acre including equipment, materials, and labor.

The project site was visited by the plan preparer in May, 2014 to inspect the site, and will be visited during and after development to check for proper erosion control features.

Project Notes

APN & Owner:

024-300-071, 72, 73	Le Colline LLC 5 White Pine Canyon Rd Park City, UT 84060
024-340-001	Cold Springs LLC 5 White Pine Canyon Rd Park City, UT 84060

Site Address: 300 Cold Springs Rd., Angwin

Contact:	Jim Barbour @ 257-1829 Barbour Vineyards 104 Camino Dorado Napa, CA 94558	Drew L. Aspegren, P. E. @ 963-4927 Napa Valley Vineyard Engineering, Inc. 176 Main St., Suite B St. Helena, CA 94574

Mapping: Tetra Tech, using 2003 data by the National Center for Airborne Laser Mapping

Implementation Schedule: Work may begin during the first growing season after project approval and may be completed over several years. Preplant and planting year operations may be conducted over two growing seasons or they may be conducted during the same year. The work will be scheduled as follows:

Year P-1 April 1 thru Sept 1	Clearing, rock and root removal, stacking vegetation for burning or other disposal, disking, installing permanent erosion control measures prior to vineyard layout, staking and installation of drip system, installing temporary erosion control measures. Winterization, consisting of seeding and mulching, shall be completed by September 1.
Rainy Season Sep 15 thru March 31	Maintain erosion control measures, burning as allowed by government agencies.
Year P Apr 1 thru Sept 1	Complete unfinished pre-plant operations, plant vineyard and begin cultural practices (refer to cultivation chart below). Maintain all erosion control features.

Cover Cropping and Cultivation Practices

Year	Cultivation during growing season	Cover Crop, planted at end of growing season
Pre-plant (P-1)	rip and disk	winter cover crop
Planting (P)	full till	permanent cover crop
P+1 Forward	no till, spot spray	permanent cover crop

All ground disturbing activities shall be completed by September 1 of each year, and all erosion control measures shall be in place by September 15.

Seeding Requirements: All exposed or disturbed soils shall be seeded. Seed and fertilizer shall be applied hydraulically or broadcast at the rates specified below:

Le Colline mix @ 100 lbs/ac	Annual Calif. brome	30%
	Perennial Calif. brome	20%
	Blue wild rye	15%
	3 weeks fescue	15%
	Calif. poppy	10%
	Blue lupine	10%

Fertilizer : Ammonium phosphate sulfate (16-20-0) 200-240 lbs/ac

Soil Amendments, Block E	Dolomitic Lime	6 tons/ac
	Compost	5 tons/ac

An alternate seed mix and/or fertilizer may be used after review and approval by Napa County RCD.

Straw Mulch shall be spread over all disturbed and seeded areas. The mulch shall be certified weed free and shall be spread mechanically or by hand at the rate of 2 tons/acre.

Fiber Rolls shall be installed at the locations shown on the plan in accordance with the appropriate detail. Fiber Rolls shall be maintained through the winter after planting, after which they may be removed.

Water Bars shall be constructed where shown on the Plan. Water bars shall remain as permanent structures and shall be reshaped as necessary prior to each rainy season.

Diversion Ditches and Drop Inlets shall be contructed at the locations shown on the Plan. Ditch flowline shall be sloped to drain at 3 to 6%. Ditches shall remain as permanent structures and shall be reshaped as necessary prior to each rainy season.

Rock Stabilization and Rock Lined Ditches shall be constructed of locally gathered fieldstone, or class light as defined in Caltrans Standard Specifications, Sec. 72-2.02. A non woven filter fabric (Mirafi 140N, or equal) shall be placed between all RSP and earthen material.

Maintenance: A winter cover crop shall be seeded and mulched prior to September 15 during year P-1 (refer to the cultivation chart). At the end of the growing season in year P, a permanent cover crop shall be planted within the vineyard block (refer to *Permanent Erosion Control Measures* in the *Narrative*). The cover crop may be mowed in the spring after the seed has fully matured (hard dough stage) to ensure annual grass species regeneration for the following year. Minimum mowing height of 4" shall be maintained for establishing annual and perennial grasses. As a normal cultural practice, no tillage shall take place after the vineyard has been planted, and spraying shall occur as provided in the *Narrative* under *Permanent Erosion Control Measures*. A minimum ground cover of 80% will be obtained each winter in Blocks A thru D, and a minimum of 85% will be obtained in Block E. The owner shall be responsible for reseeding and maintenance in order to reach the desired degree of cover.

Annual Winterization: After harvest and prior to first rains, but no later than September 15 each year, the following winterization shall be completed:

1) The condition of the cover crop shall be evaluated, including those areas outside the vineyard, and the suitability and effectiveness of the seed mix shall be evaluated. Weak areas shall be reseeded as necessary; if addition of soil amendments is indicated, they shall be incorporated and those areas shall be seeded and mulched.

2) All roads and avenues/turnspaces which are not rocked or paved shall be seeded as needed to maintain a minimum 80% cover, and mulched, and shall remain undisturbed throughout the rainy season.

3) All ditches, drop inlets, culverts, and other drainage and erosion control features shall be inspected and repaired as necessary.

4) All basins shall be inspected, cleaned and repaired as necessary. The rock anchoring filter fabric on interior slope of dikes shall be replaced annually, or as needed.

5) All other existing erosion control and drainage features shall be inspected and cleaned, or repaired as necessary.

All erosion control measures and drainage features shall be inspected after each storm event, and repairs shall be promptly performed.

Legend

- BLOCK BOUNDARY
- AVENUE/TURNSPACE
- VINEYARD BOUNDARY (APPROX.)
- CPP — CORRUGATED POLYETHYLENE PIPE, SMOOTH WALL
- O, D.I. — DROP INLET
- 1/3 — DETAIL 1, SHEET 3
- (E) — EXISTING
- FIBER ROLL
- FLOWLINE OF DIVERSION DITCHES
- GRASS ACCESS DRIVE (proposed)
- GRAVEL ACCESS DRIVE (proposed)
- HP — HIGH POINT
- IRRIGATION MAINLINE (proposed)
- 25' - 18" CPP — LENGTH/SIZE/KIND OF PIPE
- PBES — PLANNING, BUILDING AND ENVIRONMENTAL SERVICES (Napa County)
- MSB — MINIMUM SETBACK
- PROPERTY LINE
- PROPOSED WILDLIFE EXCLUSION FENCE
- RSP — ROCK SLOPE PROTECTION
- SCS — SOIL CONSERVATION SERVICE
- 139 — SCS SOIL MAPPING UNIT
- SCS SOIL TYPE BOUNDARY
- SPECIAL STATUS SPECIES TO BE AVOIDED (approx. location)
- SUBSURFACE DRAINAGE PIPE
- WATER BAR

Special Notes-Attenuation Basins

1. Basin geometry shall be determined by field survey. Prior to construction, the final basin design shall be presented to NCPBES for approval. Alternates to the rock fill may be, but not limited to, rock walls, concrete walls, rock or concrete box, or earth fill. In no case shall the basin footprint extend outside the approved project limits without written approval from NCPBES.

2. Synthetic liners shall be water tight. Seams shall be lapped and bonded as recommended by manufacturer. Sleeves shall be used on all pipe penetrations. Alternates to synthetic liners may be, but not limited to, gunite facing or grouted rock facing.

LE COLLINE VINEYARD
EROSION CONTROL PLAN
FOR NEW VINEYARD DEVELOPMENT

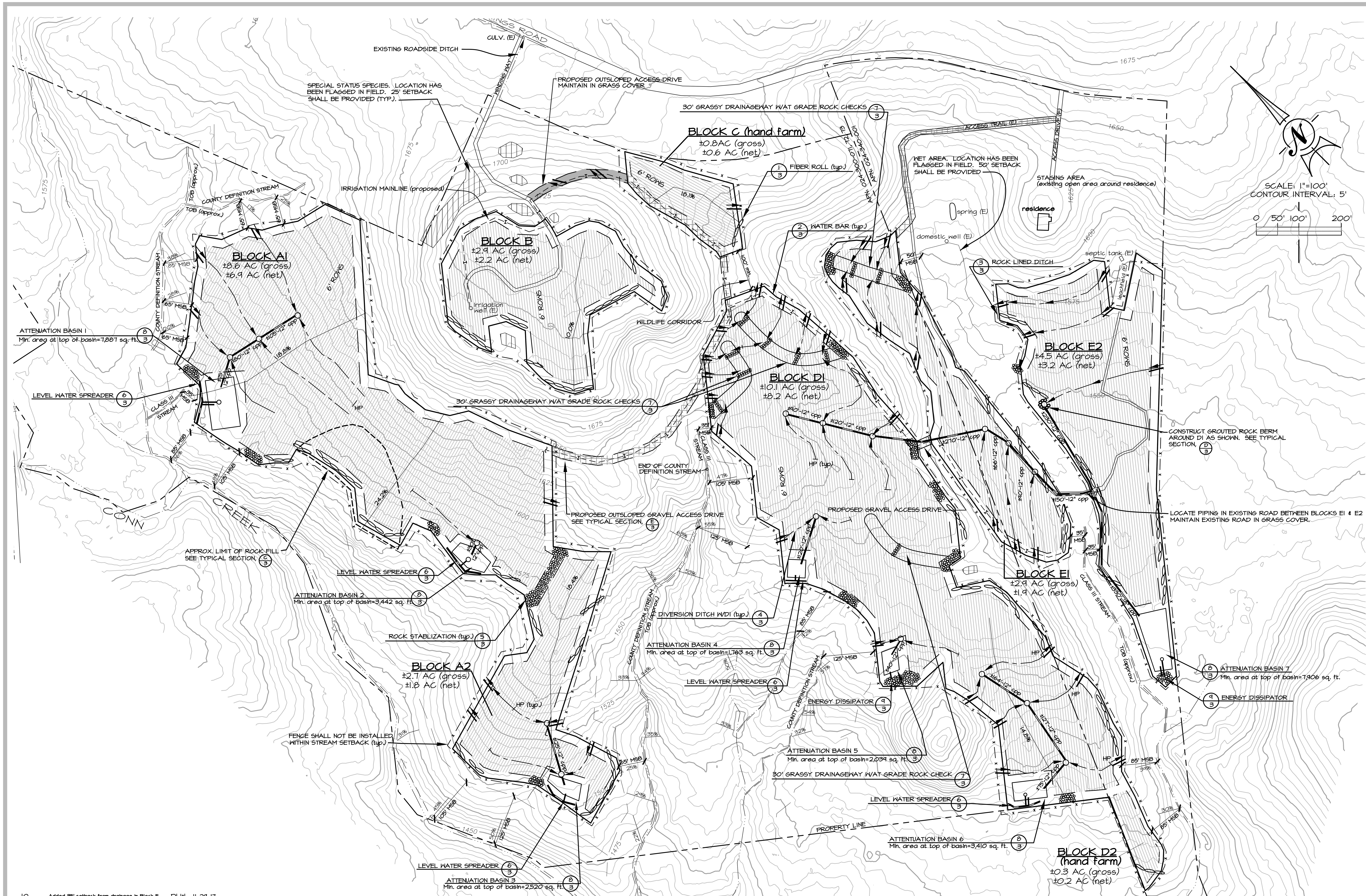
REGISTERED PROFESSIONAL ENGINEER
DREW L. ASPEGREN
No. 31418
Exp. 12-31-18
CIVIL
STATE OF CALIFORNIA

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574
(707) 963 4927

December 18, 2014
DATE

DREW L. ASPEGREN, PE
R.C.E. 31418

REV 10 11-29-17 DLW Added setback from drainage in Block E (sheet 2)
REV 9 6-1-17 DLW Revised per NCPBES comments (5-18-17)
REV 8 2-22-17 DLW Revised per ongoing environmental review (sheets 2 & 3)
REV 7 1-31-17 DLW Revised per ongoing environmental review (sheets 2 & 3)
REV 6 12-14-16 DLW Revised per ongoing environmental review
REV 5 7-7-16 DLW Revised seed mix specifications in Project Notes
REV 4 2-23-16 DLW Revised cover crop specifications in Narrative and Project Notes
REV 3 2-10-16 DLW Revised per RCD memo to NPBES (1-12-16)
REV 2 11-30-15 DLW Revised per NPBES comments (10-8-15) and RCD comments (7-17-15)
REV 1 6-22-15 DLW Revised per Napa County Comments (1-15-15) and RCD comments (5-7-15)



EXISTING ROADSIDE DITCH
CULV. (E)
WINDING WAY
SPECIAL STATUS SPECIES. LOCATION HAS BEEN FLAGGED IN FIELD. 25' SETBACK SHALL BE PROVIDED (TYP).
PROPOSED OUTSLOPED ACCESS DRIVE MAINTAIN IN GRASS COVER
30' GRASSY DRAINAGEWAY W/AT GRADE ROCK CHECKS
BLOCK C (hand farm)
±0.8AC (gross)
±0.6 AC (net)
FIBER ROLL (typ)
WET AREA. LOCATION HAS BEEN FLAGGED IN FIELD. 50' SETBACK SHALL BE PROVIDED
ACCESS TRAIL (E)
ACCESS DRIVE (E)
STAGING AREA (existing open area around residence)
residence
spring (E)
domestic well (E)
septic tank (E)
SCALE: 1"=100'
CONTOUR INTERVAL: 5'
0 50' 100' 200'
IRRIGATION MAINLINE (proposed)
COUNTY DEFINITION STREAM
TOB (approx)
BLOCK A1
±8.6 AC (gross)
±6.9 AC (net)
BLOCK B
±2.9 AC (gross)
±2.2 AC (net)
irrigation well (E)
WATER BAR (typ)
ROCK LINED DITCH
BLOCK E2
±4.5 AC (gross)
±3.2 AC (net)
WILDLIFE CORRIDOR
ATTENUATION BASIN 1
Min. area at top of basin=7,887 sq. ft.
LEVEL WATER SPREADER
CLASS III STREAM
BLOCK D1
±10.1 AC (gross)
±8.2 AC (net)
30' GRASSY DRAINAGEWAY W/AT GRADE ROCK CHECKS
CONSTRUCT GROUTED ROCK BERM AROUND D1 AS SHOWN. SEE TYPICAL SECTION.
END OF COUNTY DEFINITION STREAM
HP (typ)
CONN CREEK
PROPOSED OUTSLOPED GRAVEL ACCESS DRIVE SEE TYPICAL SECTION.
PROPOSED GRAVEL ACCESS DRIVE
LOCATE PIPING IN EXISTING ROAD BETWEEN BLOCKS E1 & E2 MAINTAIN EXISTING ROAD IN GRASS COVER.
APPROX. LIMIT OF ROCK FILL SEE TYPICAL SECTION.
LEVEL WATER SPREADER
ATTENUATION BASIN 2
Min. area at top of basin=3,442 sq. ft.
BLOCK E1
±2.9 AC (gross)
±1.9 AC (net)
DIVERSION DITCH WD1 (typ)
ROCK STABLIZATION (typ)
ATTENUATION BASIN 4
Min. area at top of basin=1,763 sq. ft.
BLOCK A2
±2.7 AC (gross)
±1.8 AC (net)
LEVEL WATER SPREADER
ATTENUATION BASIN 7
Min. area at top of basin=7,906 sq. ft.
ENERGY DISSIPATOR
ENERGY DISSIPATOR
FENCE SHALL NOT BE INSTALLED WITHIN STREAM SETBACK (typ)
ATTENUATION BASIN 5
Min. area at top of basin=2,039 sq. ft.
30' GRASSY DRAINAGEWAY W/AT GRADE ROCK CHECK
LEVEL WATER SPREADER
PROPERTY LINE
ATTENUATION BASIN 6
Min. area at top of basin=3,410 sq. ft.
BLOCK D2
(hand farm)
±0.3 AC (gross)
±0.2 AC (net)
LEVEL WATER SPREADER
ATTENUATION BASIN 3
Min. area at top of basin=2,520 sq. ft.

Tetra Tech, using 2003 data by the National Center for Airborne Laser Mapping

LEGEND ON SHT. 1

REV.	DESCRIPTION	BY	DATE
10	Added 35' setback from drainage in Block E	DLW	11-29-17
9	Revised per NCPBES comments (5-18-17)	DLW	6-1-17
8	Revised per ongoing environmental review	DLW	2-22-17
7	Revised per ongoing environmental review	DLW	1-31-17
6	Revised per ongoing environmental review	DLW	12-14-16
2	Revised per NCPBES comments (10-8-15) & RCD comments (7-17-15)	DLW	11-30-15
1	Change Block E boundary, realign road, incorporate Napa County & RCD comments (1-15-15, 5-7-15)	DLW	6-22-15

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(707) 963 4927

REGISTERED PROFESSIONAL ENGINEER DREW L. ASPEGREN No. 31418 Exp. 12-31-18 CIVIL STATE OF CALIFORNIA

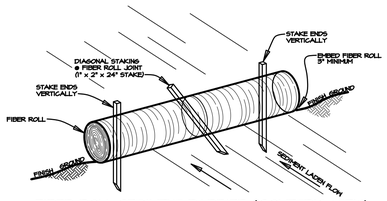
DATE 12-18-14 | SCALE AS SHOWN
14ECPDCesarisR10.dwg | DRAWN DLW | CHECKED DLA
APPROVED
DREW L. ASPEGREN, PE R.C.E. 31418

Le Colline Vineyard

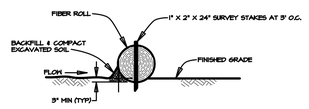
EROSION CONTROL PLAN FOR NEW VINEYARD DEVELOPMENT

PLAN

SHEET 2 OF 3

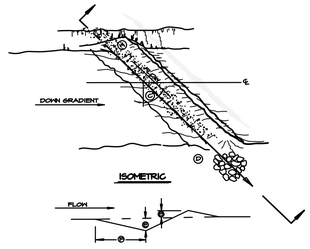


FIBER ROLL SEDIMENT BARRIER (ISOMETRIC VIEW)



FIBER ROLL SEDIMENT BARRIER (SECTION)

1/3 FIBER ROLL
N.T.S.

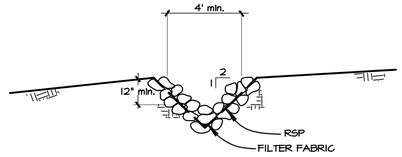


NOTES

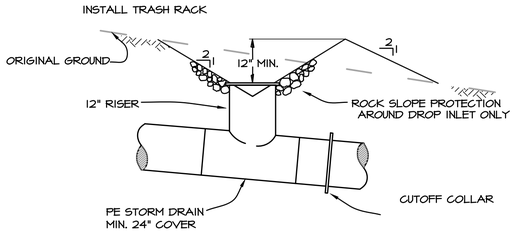
Waterbar construction for little or no traffic. Specifications are average and shall be adjusted to conditions.

A. Tie-in to bank if appropriate.
B. Cross drain berm height 4" to 6" above the roadbed.
C. Angle drain 30° to 45° degrees downgrade with road centerline.
D. Outfall structure as shown in plan.
E. Depth minimum 8".
F. 3' to 4'.

2/3 WATER BAR
N.T.S.



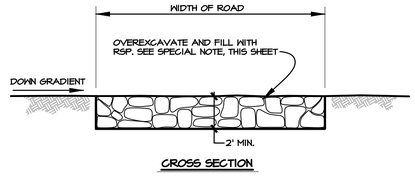
3/3 ROCK LINED DITCH
N.T.S.



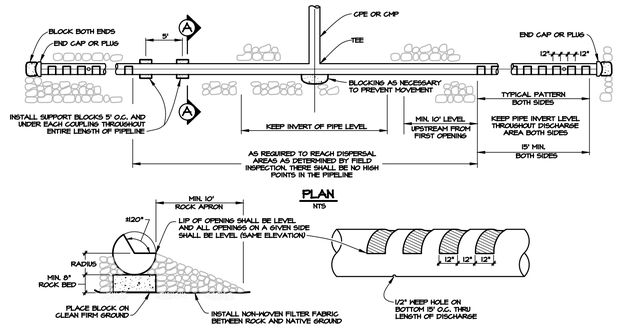
NOTES:

1. FLOWLINE SLOPE SHALL BE 3% TO 5%.
2. DIVERSION DITCHES SHALL BE SEEDED, MULCHED & COVERED W/LITE NETTING WHICH SHALL BE SECURELY ANCHORED IN PLACE.

4/3 DIVERSION DITCH & DROP INLET
N.T.S.



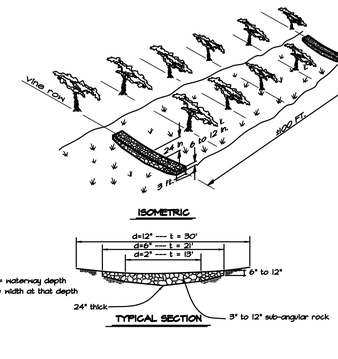
5/3 ROCK STABILIZATION
N.T.S.



PLAN
NTS

SECTION A
NTS

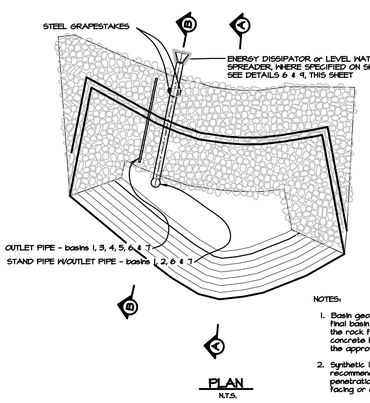
6/3 LEVEL WATER SPREADER
N.T.S.



NOTES:

1. The course of the drainageway shall be preserved. This drainageway SHALL NOT BE RIPPED within 20 feet either side of its natural flowline at any time during construction or vineyard operation.
2. The drainageway shall be seeded and fertilized by September 1, and shall be sufficiently pre-irrigated so that there is germination by September 15.
3. The drainageway may be planted to vineyard, but ripping and/or disking shall not be allowed as part of ground preparation or vineyard operation.

7/3 DRAINAGEWAY WITH AT GRADE ROCK CHECKS
N.T.S.

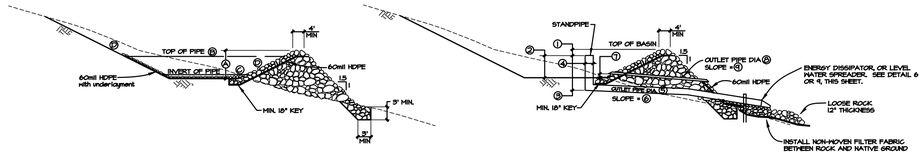


PLAN
N.T.S.

	BASIN						
	1	2	3	4	5	6	7
A - Basin Depth	8' MIN.	6' MIN.	4' MIN.	5' MIN.	5' MIN.	5.5' MIN.	8' MIN.
B - Area at top of stand pipe	6452sqft	2481 sqft	-	-	-	3170 sqft	6387 sqft
C - Area at invert of outlet pipe	7148 sqft	-	2306 sqft	1523 sqft	1648 sqft	2504 sqft	6032 sqft
D - Interior slope	2:1	2:1	2:1	2:1	2:1	2:1	2:1
1 - Top of basin to top of stand pipe	2'	1'	-	-	-	6"	2'
2 - Top of stand pipe to basin bottom	6'	5'	-	-	-	5'	6'
3 - Top of stand pipe to invert of outlet	7'	6'	-	-	-	6'	7'
4 - Diameter of stand pipe	8"	12"	-	-	-	8"	15"
5 - Diameter of outlet pipe	6"	8"	-	-	-	8"	10"
6 - Minimum slope of outlet pipe	.02 MIN.	.02 MIN.	-	-	-	.02 MIN.	.02 MIN.
7 - Basin bottom to outlet invert	7'	-	3.5'	4.25'	4'	3.5'	5.5'
B - Diameter of outlet pipe	6"	-	6"	6"	6"	6"	6"
9 - Minimum slope of outlet pipe	.02 MIN.	-	.02 MIN.	.02 MIN.	.02 MIN.	.02 MIN.	.02 MIN.

NOTES:

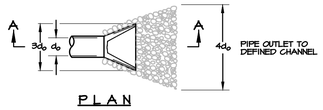
1. Basin geometry shall be determined by field survey. Prior to construction, the final basin design shall be presented to NCRBES for approval. Alternates to the rock fill may be, but not limited to, rock walls, concrete walls, rock or concrete box, or earth fill. In no case shall the basin footprint extend outside the approved project limits without written approval from NCRBES.
2. Synthetic liners shall be water tight. Seams shall be lapped and bonded as recommended by manufacturer. Sleeves shall be used on all pipe penetrations. Alternates to synthetic liners may be, but not limited to, gunite facing or grouted rock facing.



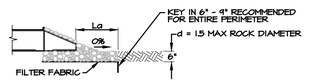
A BASIN
N.T.S.

B OUTLET PIPE
N.T.S.

8/3 ATTENUATION BASIN
N.T.S.



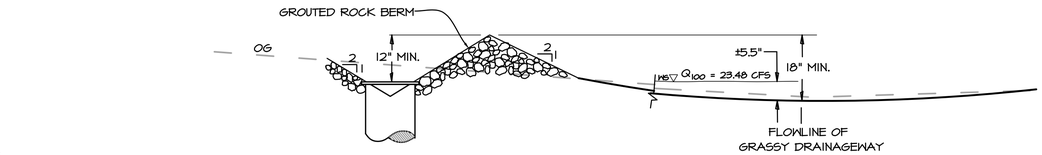
PLAN



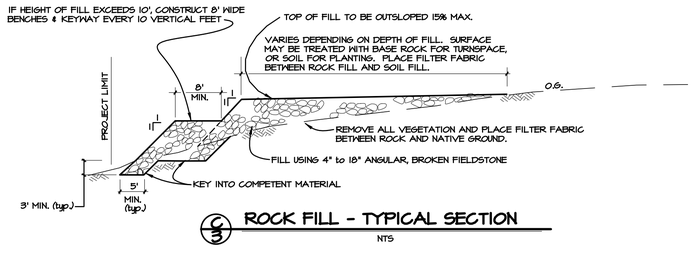
SECTION A

PIPE DIAMETER INCHES	DISCHARGE FT³/S	APRON LENGTH, La FT	RIP RAP D_{50} DIAMETER MIN INCHES
12	5	10	4
	10	13	6
18	10	10	6
	20	16	8
	30	23	12
	40	26	16

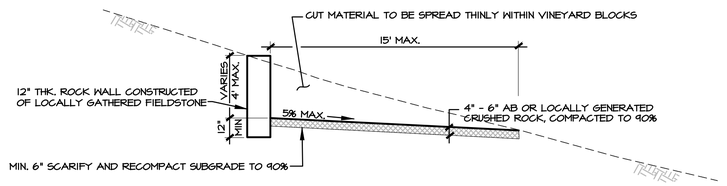
9/3 ENERGY DISSIPATOR
N.T.S.



D/3 BERM - TYPICAL SECTION
NTS



C/3 ROCK FILL - TYPICAL SECTION
NTS



E/3 NEW ACCESS DRIVE - TYPICAL SECTION
NTS

SPECIAL NOTE-RSP

Rock Slope Protection (RSP) shall be locally gathered field stone (25. lb.), or class light, as defined in Caltrans Standard Specifications, Sec. 72-2.02. A non woven filter fabric (Mirafi 140 N, or equal) shall be placed between all RSP and earthen material.

10	Revise section C	DLW	11-29-17
9	Revise detail 8	DLW	6-1-17
8	Revise detail 8	DLW	2-22-17
7	Revise detail 8	DLW	1-31-17
6	Add level water spreader detail	DLW	12-14-16
5	Revise typical section E3	DLW	6-7-16
2	Add berm typical section	DLW	11-30-15
1	Add section & basin details	DLW	6-22-15
REV.	DESCRIPTION	BY	DATE

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574
(707) 963 4927

REGISTERED PROFESSIONAL ENGINEER DREW L. ASPEGREN No. 31418 Exp. 12-31-18 CIVIL STATE OF CALIFORNIA

DATE	12-18-14
SCALE	AS SHOWN
DRAWN	DLW
CHECKED	DLA
14ECPDIcesarisR10.dwg	
APPROVED	
DREW L. ASPEGREN, PE	R.C.E. 31418

Le Colline Vineyard

EROSION CONTROL PLAN
FOR NEW VINEYARD DEVELOPMENT

DETAILS

SHEET 3 OF 3

APPENDIX C

CALEEMOD OUTPUT FILES

Le Colline

Napa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.00	User Defined Unit	34.50	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.6	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Ag Industrial

Construction Phase - Phase 1 assumed Sept - Oct 2015 (25d)
Phase 1 log haul assumed 75 days per truck (600 hr)

Phase 2 assumed April - June 2017 (50d)
Phase 2 grading assumed March 2017 (5d)

Phase 3 assumed March - July 2018
days to match final equipment list PDF

Site Prep utlitized due to lack of agircultural defaults in Caleemod

Off-road Equipment - grader and off highway not included in this phase

Off-road Equipment -

Off-road Equipment - Dozer and Excavators used defaults
Off-road Equipment - grader used defaults

Off-road Equipment - grader not included in this phase

log haulers assumed off-highway trucks - defaults used

Off-road Equipment - tractor default

Off-road Equipment - tractor default

Off-road Equipment - ATV = off highway tractor
Tractor and spray rig = default tractor

Off-road Equipment - tractor default

Off-road Equipment - tractor default

Grading - Total disturbed is gross acres for phase 1 and 2. Phase 3 is net acres from project description. Remaining = default.

Trips and VMT - Worker trips phase 1 = 3.2 = 4*0.8 because workers travel 80% of phase 1

Worker trips phase 3 = 10.8 to account for 27 days in 20 day step of phase

Hauling phase 3 = 1.39 grape trucks a day 25 (a season)/ 18 (days in that phase step)

On-road Fugitive Dust - defaults retained

Vehicle Trips -

Land Use Change -

Sequestration - no new trees

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	75.00	5.00
tblConstructionPhase	NumDays	30.00	18.00
tblConstructionPhase	NumDays	30.00	75.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	30.00	50.00
tblConstructionPhase	NumDays	30.00	25.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	30.00	40.00

tblConstructionPhase	NumDays	30.00	8.00
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tblConstructionPhase	PhaseStartDate	1/1/2017	4/3/2017
tblConstructionPhase	PhaseStartDate	4/17/2018	3/22/2018
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tblGrading	AcresOfGrading	0.00	34.50
tblGrading	AcresOfGrading	0.00	34.50
tblGrading	AcresOfGrading	0.00	34.50
tblGrading	AcresOfGrading	2.50	34.50
tblGrading	AcresOfGrading	0.00	27.60
tblGrading	AcresOfGrading	0.00	27.60
tblGrading	AcresOfGrading	0.00	27.60
tblGrading	AcresOfGrading	0.00	27.60
tblLandUse	LotAcreage	0.00	34.50
tblOffRoadEquipment	HorsePower	162.00	255.00
tblOffRoadEquipment	HorsePower	97.00	255.00
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tblOffRoadEquipment	LoadFactor	0.37	0.40
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.44	0.37

tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Graders
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	UsageHours	8.00	9.00
tblOffRoadEquipment	UsageHours	8.00	9.00

tblProjectCharacteristics	OperationalYear	2014	2018
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	1.39
tblTripsAndVMT	VendorTripLength	6.60	0.00
tblTripsAndVMT	VendorTripLength	6.60	0.00
tblTripsAndVMT	VendorTripLength	6.60	0.00
tblTripsAndVMT	VendorTripLength	6.60	0.00
tblTripsAndVMT	VendorTripLength	6.60	0.00
tblTripsAndVMT	VendorTripLength	6.60	0.00
tblTripsAndVMT	VendorTripLength	6.60	0.00
tblTripsAndVMT	VendorTripLength	6.60	0.00
tblTripsAndVMT	VendorTripLength	6.60	0.00
tblTripsAndVMT	WorkerTripLength	12.40	240.00
tblTripsAndVMT	WorkerTripLength	12.40	0.00
tblTripsAndVMT	WorkerTripLength	12.40	0.00
tblTripsAndVMT	WorkerTripLength	12.40	150.00
tblTripsAndVMT	WorkerTripLength	12.40	0.00
tblTripsAndVMT	WorkerTripLength	12.40	0.00
tblTripsAndVMT	WorkerTripLength	12.40	32.00
tblTripsAndVMT	WorkerTripLength	12.40	0.00
tblTripsAndVMT	WorkerTripLength	12.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1923	2.1698	1.1425	2.8400e-003	0.0541	0.0831	0.1373	8.6200e-003	0.0765	0.0851	0.0000	264.1815	264.1815	0.0760	0.0000	265.7782
2017	0.0808	0.8394	0.7808	9.2000e-004	0.3651	0.0420	0.4071	0.1768	0.0387	0.2154	0.0000	79.8099	79.8099	0.0188	0.0000	80.2042
2018	0.0194	0.1937	0.1593	2.7000e-004	0.0744	0.0121	0.0865	8.2200e-003	0.0112	0.0194	0.0000	24.1478	24.1478	7.2500e-003	0.0000	24.3001
Total	**0.2926**	**3.2028**	**2.0826**	**4.0300e-003**	**0.4936**	**0.1373**	**0.6309**	**0.1936**	**0.1263**	**0.3199**	**0.0000**	**368.1391**	**368.1391**	**0.1021**	**0.0000**	**370.2825**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1923	2.1697	1.1425	2.8400e-003	0.0541	0.0831	0.1373	8.6200e-003	0.0765	0.0851	0.0000	264.1812	264.1812	0.0760	0.0000	265.7779
2017	0.0808	0.8394	0.7808	9.2000e-004	0.3651	0.0420	0.4071	0.1768	0.0387	0.2154	0.0000	79.8098	79.8098	0.0188	0.0000	80.2042
2018	0.0194	0.1937	0.1593	2.7000e-004	0.0744	0.0121	0.0865	8.2200e-003	0.0112	0.0194	0.0000	24.1478	24.1478	7.2500e-003	0.0000	24.3001
Total	**0.2926**	**3.2028**	**2.0826**	**4.0300e-003**	**0.4936**	**0.1373**	**0.6309**	**0.1936**	**0.1263**	**0.3199**	**0.0000**	**368.1388**	**368.1388**	**0.1021**	**0.0000**	**370.2821**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	-3,380.8800
Total	**-3,380.8800**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Phase 1 (Timber Harvest)	Site Preparation	8/15/2016	9/16/2016	5	25	
2	Phase 1 (Timber Harvest) -log haul	Site Preparation	9/17/2016	12/31/2016	5	75	log haul 600 hours per truck
3	Phase 2 (Site Prep)	Site Preparation	4/3/2017	6/9/2017	5	50	
4	Phase 2 (Site Prep) - grading	Grading	6/17/2017	6/25/2017	5	5	
5	Phase 3 (Vineyard Maintenance) - tractor disc	Site Preparation	3/1/2018	3/21/2018	5	15	line 1
6	Phase 3 (Vineyard Maintenance) - tractor +rock trailer	Site Preparation	3/22/2018	4/16/2018	5	18	line 2
7	Phase 3 (Vineyard Maintenance) - ATV	Site Preparation	3/22/2018	4/18/2018	5	20	lines 3 and 5
8	Phase 3 (Vineyard Maintenance) - tractor trailer	Site Preparation	4/19/2018	6/13/2018	5	40	line 4
9	Phase 3 (Vineyard Maintenance) - mowing	Site Preparation	6/14/2018	6/25/2018	5	8	line 6

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 2 (Site Prep) - grading	Excavators	0	8.00	162	0.38
Phase 2 (Site Prep) - grading	Graders	1	8.00	174	0.41
Phase 1 (Timber Harvest) -log haul	Off-Highway Trucks	5	8.00	400	0.38
Phase 3 (Vineyard Maintenance) - tractor disc	Rubber Tired Dozers	0	8.00	255	0.40
Phase 2 (Site Prep)	Rubber Tired Dozers	2	8.00	255	0.40
Phase 1 (Timber Harvest)	Excavators	1	8.00	255	0.40
Phase 3 (Vineyard Maintenance) - ATV	Tractors/Loaders/Backhoes	1	8.00	255	0.40
Phase 3 (Vineyard Maintenance) - tractor trailer	Rubber Tired Dozers	0	8.00	255	0.40
Phase 3 (Vineyard Maintenance) - mowing	Rubber Tired Dozers	0	8.00	255	0.40
Phase 1 (Timber Harvest)	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Phase 3 (Vineyard Maintenance) - tractor +rock trailer	Rubber Tired Dozers	0	8.00	255	0.40
Phase 3 (Vineyard Maintenance) - tractor +rock trailer	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Phase 2 (Site Prep) - grading	Scrapers	0	8.00	361	0.48
Phase 1 (Timber Harvest) -log haul	Rubber Tired Dozers	0	8.00	255	0.40
Phase 2 (Site Prep)	Excavators	2	8.00	97	0.37
Phase 3 (Vineyard Maintenance) - tractor disc	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Phase 1 (Timber Harvest)	Skid Steer Loaders	1	8.00	64	0.37
Phase 2 (Site Prep)	Graders	0		174	0.41
Phase 1 (Timber Harvest)	Rubber Tired Dozers	0	8.00	255	0.40

Phase 2 (Site Prep) - grading	Rubber Tired Dozers	0	8.00	255	0.40
Phase 2 (Site Prep) - grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Phase 3 (Vineyard Maintenance) - ATV	Rubber Tired Dozers	0	8.00	255	0.40
Phase 2 (Site Prep)	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Phase 1 (Timber Harvest) -log haul	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Phase 3 (Vineyard Maintenance) - ATV	Off-Highway Tractors	1	8.00	97	0.37
Phase 3 (Vineyard Maintenance) - tractor trailer	Tractors/Loaders/Backhoes	1	9.00	97	0.37
Phase 3 (Vineyard Maintenance) - mowing	Tractors/Loaders/Backhoes	1	9.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Phase 1 (Timber Harvest)	3	8.00	0.00	0.00	240.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 (Vineyard Maintenance) - tractor	1	3.00	0.00	0.00	0.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 (Timber Harvest) -log haul	5	13.00	0.00	0.00	0.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 (Vineyard Maintenance) - tractor	1	3.00	0.00	1.39	0.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 (Site Prep)	4	10.00	0.00	0.00	150.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 (Site Prep) - grading	1	3.00	0.00	0.00	0.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 (Vineyard Maintenance) - ATV	2	5.00	0.00	0.00	32.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 (Vineyard Maintenance) - tractor	1	3.00	0.00	0.00	0.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 (Vineyard Maintenance) - mowing	1	3.00	0.00	0.00	0.00	0.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Phase 1 (Timber Harvest) - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	1.9800e-003	0.0000	1.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1224	0.0753	1.7000e-004		6.2000e-003	6.2000e-003		5.7000e-003	5.7000e-003	0.0000	16.3558	16.3558	4.9300e-003	0.0000	16.4594
Total	**0.0105**	**0.1224**	**0.0753**	**1.7000e-004**	**0.0183**	**6.2000e-003**	**0.0245**	**1.9800e-003**	**5.7000e-003**	**7.6800e-003**	**0.0000**	**16.3558**	**16.3558**	**4.9300e-003**	**0.0000**	**16.4594**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8900e-003	0.0123	0.1148	2.0000e-004	0.0175	1.5000e-004	0.0177	4.6600e-003	1.4000e-004	4.8000e-003	0.0000	15.2286	15.2286	9.5000e-004	0.0000	15.2487
Total	**3.8900e-003**	**0.0123**	**0.1148**	**2.0000e-004**	**0.0175**	**1.5000e-004**	**0.0177**	**4.6600e-003**	**1.4000e-004**	**4.8000e-003**	**0.0000**	**15.2286**	**15.2286**	**9.5000e-004**	**0.0000**	**15.2487**

3.2 Phase 1 (Timber Harvest) - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	1.9800e-003	0.0000	1.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1224	0.0753	1.7000e-004		6.2000e-003	6.2000e-003		5.7000e-003	5.7000e-003	0.0000	16.3558	16.3558	4.9300e-003	0.0000	16.4594
Total	**0.0105**	**0.1224**	**0.0753**	**1.7000e-004**	**0.0183**	**6.2000e-003**	**0.0245**	**1.9800e-003**	**5.7000e-003**	**7.6800e-003**	**0.0000**	**16.3558**	**16.3558**	**4.9300e-003**	**0.0000**	**16.4594**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8900e-003	0.0123	0.1148	2.0000e-004	0.0175	1.5000e-004	0.0177	4.6600e-003	1.4000e-004	4.8000e-003	0.0000	15.2286	15.2286	9.5000e-004	0.0000	15.2487
Total	**3.8900e-003**	**0.0123**	**0.1148**	**2.0000e-004**	**0.0175**	**1.5000e-004**	**0.0177**	**4.6600e-003**	**1.4000e-004**	**4.8000e-003**	**0.0000**	**15.2286**	**15.2286**	**9.5000e-004**	**0.0000**	**15.2487**

3.3 Phase 1 (Timber Harvest) -log haul - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	1.9800e-003	0.0000	1.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1766	2.0347	0.9476	2.4700e-003		0.0768	0.0768		0.0706	0.0706	0.0000	232.4963	232.4963	0.0701	0.0000	233.9691
Total	**0.1766**	**2.0347**	**0.9476**	**2.4700e-003**	**0.0183**	**0.0768**	**0.0951**	**1.9800e-003**	**0.0706**	**0.0726**	**0.0000**	**232.4963**	**232.4963**	**0.0701**	**0.0000**	**233.9691**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	3.0000e-004	4.7800e-003	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.1007	0.1007	2.0000e-005	0.0000	0.1012
Total	**1.3400e-003**	**3.0000e-004**	**4.7800e-003**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.1007**	**0.1007**	**2.0000e-005**	**0.0000**	**0.1012**

3.3 Phase 1 (Timber Harvest) -log haul - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	1.9800e-003	0.0000	1.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1766	2.0347	0.9476	2.4700e-003		0.0768	0.0768		0.0706	0.0706	0.0000	232.4961	232.4961	0.0701	0.0000	233.9688
Total	**0.1766**	**2.0347**	**0.9476**	**2.4700e-003**	**0.0183**	**0.0768**	**0.0951**	**1.9800e-003**	**0.0706**	**0.0726**	**0.0000**	**232.4961**	**232.4961**	**0.0701**	**0.0000**	**233.9688**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	3.0000e-004	4.7800e-003	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.1007	0.1007	2.0000e-005	0.0000	0.1012
Total	**1.3400e-003**	**3.0000e-004**	**4.7800e-003**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.1007**	**0.1007**	**2.0000e-005**	**0.0000**	**0.1012**

3.4 Phase 2 (Site Prep) - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3194	0.0000	0.3194	0.1675	0.0000	0.1675	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0734	0.7982	0.6122	6.0000e-004		0.0405	0.0405		0.0372	0.0372	0.0000	55.4441	55.4441	0.0170	0.0000	55.8008
Total	**0.0734**	**0.7982**	**0.6122**	**6.0000e-004**	**0.3194**	**0.0405**	**0.3599**	**0.1675**	**0.0372**	**0.2047**	**0.0000**	**55.4441**	**55.4441**	**0.0170**	**0.0000**	**55.8008**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-003	0.0170	0.1565	3.1000e-004	0.0274	2.2000e-004	0.0276	7.2900e-003	2.0000e-004	7.4900e-003	0.0000	22.9183	22.9183	1.3500e-003	0.0000	22.9466
Total	**5.0000e-003**	**0.0170**	**0.1565**	**3.1000e-004**	**0.0274**	**2.2000e-004**	**0.0276**	**7.2900e-003**	**2.0000e-004**	**7.4900e-003**	**0.0000**	**22.9183**	**22.9183**	**1.3500e-003**	**0.0000**	**22.9466**

3.4 Phase 2 (Site Prep) - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3194	0.0000	0.3194	0.1675	0.0000	0.1675	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0734	0.7982	0.6122	6.0000e-004		0.0405	0.0405		0.0372	0.0372	0.0000	55.4440	55.4440	0.0170	0.0000	55.8007
Total	**0.0734**	**0.7982**	**0.6122**	**6.0000e-004**	**0.3194**	**0.0405**	**0.3599**	**0.1675**	**0.0372**	**0.2047**	**0.0000**	**55.4440**	**55.4440**	**0.0170**	**0.0000**	**55.8007**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-003	0.0170	0.1565	3.1000e-004	0.0274	2.2000e-004	0.0276	7.2900e-003	2.0000e-004	7.4900e-003	0.0000	22.9183	22.9183	1.3500e-003	0.0000	22.9466
Total	**5.0000e-003**	**0.0170**	**0.1565**	**3.1000e-004**	**0.0274**	**2.2000e-004**	**0.0276**	**7.2900e-003**	**2.0000e-004**	**7.4900e-003**	**0.0000**	**22.9183**	**22.9183**	**1.3500e-003**	**0.0000**	**22.9466**

3.5 Phase 2 (Site Prep) - grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	1.9800e-003	0.0000	1.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3800e-003	0.0241	0.0121	2.0000e-005		1.3500e-003	1.3500e-003		1.2500e-003	1.2500e-003	0.0000	1.4461	1.4461	4.4000e-004	0.0000	1.4554
Total	**2.3800e-003**	**0.0241**	**0.0121**	**2.0000e-005**	**0.0183**	**1.3500e-003**	**0.0196**	**1.9800e-003**	**1.2500e-003**	**3.2300e-003**	**0.0000**	**1.4461**	**1.4461**	**4.4000e-004**	**0.0000**	**1.4554**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.4900e-003	1.4900e-003	0.0000	0.0000	1.5000e-003
Total	**2.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.4900e-003**	**1.4900e-003**	**0.0000**	**0.0000**	**1.5000e-003**

3.5 Phase 2 (Site Prep) - grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0183	0.0000	0.0183	1.9800e-003	0.0000	1.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3800e-003	0.0241	0.0121	2.0000e-005		1.3500e-003	1.3500e-003		1.2500e-003	1.2500e-003	0.0000	1.4461	1.4461	4.4000e-004	0.0000	1.4554
Total	**2.3800e-003**	**0.0241**	**0.0121**	**2.0000e-005**	**0.0183**	**1.3500e-003**	**0.0196**	**1.9800e-003**	**1.2500e-003**	**3.2300e-003**	**0.0000**	**1.4461**	**1.4461**	**4.4000e-004**	**0.0000**	**1.4554**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.4900e-003	1.4900e-003	0.0000	0.0000	1.5000e-003
Total	**2.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.4900e-003**	**1.4900e-003**	**0.0000**	**0.0000**	**1.5000e-003**

3.6 Phase 3 (Vineyard Maintenance) - tractor disc - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0000e-003	0.0197	0.0175	2.0000e-005		1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	2.1281	2.1281	6.6000e-004	0.0000	2.1420
Total	**2.0000e-003**	**0.0197**	**0.0175**	**2.0000e-005**	**0.0146**	**1.4000e-003**	**0.0160**	**1.5800e-003**	**1.2900e-003**	**2.8700e-003**	**0.0000**	**2.1281**	**2.1281**	**6.6000e-004**	**0.0000**	**2.1420**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	1.0000e-005	1.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.3100e-003	4.3100e-003	0.0000	0.0000	4.3200e-003
Total	**5.0000e-005**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.3100e-003**	**4.3100e-003**	**0.0000**	**0.0000**	**4.3200e-003**

3.6 Phase 3 (Vineyard Maintenance) - tractor disc - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0000e-003	0.0197	0.0175	2.0000e-005		1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	2.1281	2.1281	6.6000e-004	0.0000	2.1420
Total	**2.0000e-003**	**0.0197**	**0.0175**	**2.0000e-005**	**0.0146**	**1.4000e-003**	**0.0160**	**1.5800e-003**	**1.2900e-003**	**2.8700e-003**	**0.0000**	**2.1281**	**2.1281**	**6.6000e-004**	**0.0000**	**2.1420**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	1.0000e-005	1.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.3100e-003	4.3100e-003	0.0000	0.0000	4.3200e-003
Total	**5.0000e-005**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.3100e-003**	**4.3100e-003**	**0.0000**	**0.0000**	**4.3200e-003**

3.7 Phase 3 (Vineyard Maintenance) - tractor +rock trailer - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3900e-003	0.0237	0.0210	3.0000e-005		1.6800e-003	1.6800e-003		1.5400e-003	1.5400e-003	0.0000	2.5537	2.5537	8.0000e-004	0.0000	2.5704
Total	**2.3900e-003**	**0.0237**	**0.0210**	**3.0000e-005**	**0.0146**	**1.6800e-003**	**0.0163**	**1.5800e-003**	**1.5400e-003**	**3.1200e-003**	**0.0000**	**2.5537**	**2.5537**	**8.0000e-004**	**0.0000**	**2.5704**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	2.5000e-004	2.6000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0655	0.0655	0.0000	0.0000	0.0655
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	1.0000e-005	2.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.1700e-003	5.1700e-003	0.0000	0.0000	5.1900e-003
Total	**8.0000e-005**	**2.6000e-004**	**4.7000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0707**	**0.0707**	**0.0000**	**0.0000**	**0.0707**

3.7 Phase 3 (Vineyard Maintenance) - tractor +rock trailer - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3900e-003	0.0237	0.0210	3.0000e-005		1.6800e-003	1.6800e-003		1.5400e-003	1.5400e-003	0.0000	2.5537	2.5537	8.0000e-004	0.0000	2.5704
Total	**2.3900e-003**	**0.0237**	**0.0210**	**3.0000e-005**	**0.0146**	**1.6800e-003**	**0.0163**	**1.5800e-003**	**1.5400e-003**	**3.1200e-003**	**0.0000**	**2.5537**	**2.5537**	**8.0000e-004**	**0.0000**	**2.5704**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	2.5000e-004	2.6000e-004	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0655	0.0655	0.0000	0.0000	0.0655
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	1.0000e-005	2.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.1700e-003	5.1700e-003	0.0000	0.0000	5.1900e-003
Total	**8.0000e-005**	**2.6000e-004**	**4.7000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0707**	**0.0707**	**0.0000**	**0.0000**	**0.0707**

3.8 Phase 3 (Vineyard Maintenance) - ATV - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3000e-003	0.0783	0.0503	1.2000e-004		4.0200e-003	4.0200e-003		3.7000e-003	3.7000e-003	0.0000	10.7666	10.7666	3.3500e-003	0.0000	10.8370
Total	**7.3000e-003**	**0.0783**	**0.0503**	**1.2000e-004**	**0.0146**	**4.0200e-003**	**0.0187**	**1.5800e-003**	**3.7000e-003**	**5.2800e-003**	**0.0000**	**10.7666**	**10.7666**	**3.3500e-003**	**0.0000**	**10.8370**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	6.6000e-004	6.1500e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9495	0.9495	5.0000e-005	0.0000	0.9507
Total	**2.6000e-004**	**6.6000e-004**	**6.1500e-003**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9495**	**0.9495**	**5.0000e-005**	**0.0000**	**0.9507**

3.8 Phase 3 (Vineyard Maintenance) - ATV - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.3000e-003	0.0783	0.0503	1.2000e-004		4.0200e-003	4.0200e-003		3.7000e-003	3.7000e-003	0.0000	10.7666	10.7666	3.3500e-003	0.0000	10.8370
Total	**7.3000e-003**	**0.0783**	**0.0503**	**1.2000e-004**	**0.0146**	**4.0200e-003**	**0.0187**	**1.5800e-003**	**3.7000e-003**	**5.2800e-003**	**0.0000**	**10.7666**	**10.7666**	**3.3500e-003**	**0.0000**	**10.8370**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	6.6000e-004	6.1500e-003	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9495	0.9495	5.0000e-005	0.0000	0.9507
Total	**2.6000e-004**	**6.6000e-004**	**6.1500e-003**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9495**	**0.9495**	**5.0000e-005**	**0.0000**	**0.9507**

3.9 Phase 3 (Vineyard Maintenance) - tractor trailer - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9900e-003	0.0592	0.0526	7.0000e-005		4.1900e-003	4.1900e-003		3.8600e-003	3.8600e-003	0.0000	6.3843	6.3843	1.9900e-003	0.0000	6.4260
Total	**5.9900e-003**	**0.0592**	**0.0526**	**7.0000e-005**	**0.0146**	**4.1900e-003**	**0.0188**	**1.5800e-003**	**3.8600e-003**	**5.4400e-003**	**0.0000**	**6.3843**	**6.3843**	**1.9900e-003**	**0.0000**	**6.4260**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	3.0000e-005	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0115	0.0115	0.0000	0.0000	0.0115
Total	**1.4000e-004**	**3.0000e-005**	**4.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0115**	**0.0115**	**0.0000**	**0.0000**	**0.0115**

3.9 Phase 3 (Vineyard Maintenance) - tractor trailer - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9900e-003	0.0592	0.0526	7.0000e-005		4.1900e-003	4.1900e-003		3.8600e-003	3.8600e-003	0.0000	6.3843	6.3843	1.9900e-003	0.0000	6.4260
Total	**5.9900e-003**	**0.0592**	**0.0526**	**7.0000e-005**	**0.0146**	**4.1900e-003**	**0.0188**	**1.5800e-003**	**3.8600e-003**	**5.4400e-003**	**0.0000**	**6.3843**	**6.3843**	**1.9900e-003**	**0.0000**	**6.4260**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	3.0000e-005	4.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0115	0.0115	0.0000	0.0000	0.0115
Total	**1.4000e-004**	**3.0000e-005**	**4.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0115**	**0.0115**	**0.0000**	**0.0000**	**0.0115**

3.10 Phase 3 (Vineyard Maintenance) - mowing - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	0.0118	0.0105	1.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	1.2769	1.2769	4.0000e-004	0.0000	1.2852
Total	**1.2000e-003**	**0.0118**	**0.0105**	**1.0000e-005**	**0.0146**	**8.4000e-004**	**0.0155**	**1.5800e-003**	**7.7000e-004**	**2.3500e-003**	**0.0000**	**1.2769**	**1.2769**	**4.0000e-004**	**0.0000**	**1.2852**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	0.0000	0.0000	2.3100e-003
Total	**3.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.3000e-003**	**2.3000e-003**	**0.0000**	**0.0000**	**2.3100e-003**

3.10 Phase 3 (Vineyard Maintenance) - mowing - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	0.0118	0.0105	1.0000e-005		8.4000e-004	8.4000e-004		7.7000e-004	7.7000e-004	0.0000	1.2769	1.2769	4.0000e-004	0.0000	1.2852
Total	**1.2000e-003**	**0.0118**	**0.0105**	**1.0000e-005**	**0.0146**	**8.4000e-004**	**0.0155**	**1.5800e-003**	**7.7000e-004**	**2.3500e-003**	**0.0000**	**1.2769**	**1.2769**	**4.0000e-004**	**0.0000**	**1.2852**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	0.0000	0.0000	2.3100e-003
Total	**3.0000e-005**	**1.0000e-005**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.3000e-003**	**2.3000e-003**	**0.0000**	**0.0000**	**2.3100e-003**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.476941	0.074107	0.173759	0.158633	0.057706	0.008286	0.014821	0.021797	0.002336	0.001217	0.006824	0.000711	0.002861

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-3,380.8800	0.0000	0.0000	-3,380.8800

10.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	0 / 27.6	171.1200	0.0000	0.0000	171.1200
Trees	32 / 0	-3,552.0000	0.0000	0.0000	-3,552.0000
Total		**-3,380.8800**	**0.0000**	**0.0000**	**-3,380.8800**

APPENDIX D

BIOLOGICAL RESOURCES REPORT

Biological Resources Report
Le Colline Vineyard THP/TCP
APNs 024-300-070, -071, -072 &-340-001
300 Cold Springs Road
Napa County

Prepared
By
KJELDSEN BIOLOGICAL CONSULTING

For
Scott Butler, R.P.F. #1851
Environmental Resource Management

August 2015

Biological Resource Survey
Le Colline Vineyard THP/TCP
APNs 024-300-070, -071, -072 & -340-001
Napa County

PROJECT NAME: Le Colline Vineyard THP/TCP
APNS 024-300-070, -071, -072 & -340-001
Napa County

PROPERTY OWNER: Le Colline LLC
5 White Pine Canyon Rd.
Park City, UT 84060

THP/TCP PLAN: Scott Butler, R.P.F. #1851
Environmental Resource Management
889 Hwy 20-26
Ontario, OR 97914

ECP: Napa Valley Vineyard Engineering
Drew L. Aspegren, P.E.
Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
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Biological Resource Survey
Le Colline Vineyard THP/TCP
APNs 024-300-070, -071, -072 & -340-001
Napa County

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Biological Resource Survey
Le Colline Vineyard THP/TCP
APNs 024-300-070, -071, -072 & -340-001
Napa County

Executive Summary

This study was conducted at the request of Scott Butler, Environmental Resource Management on behalf of the property owner as part of the background studies for Napa County Conservation, Development and Planning Department and California Department of Forestry. The project proposes a Timber Harvest Plan / Timber Conversion Plan (THP/TCP) for conversion of 34.8+/- acres of the 88.34-acre property to vineyard. The property is located on the south side of the community of Angwin at 300 Cold Springs Road.

Our survey follows the California Department of Fish and Wildlife (CDFW) Guidelines, California Native Plant Society (CNPS) Guidelines, and Guidelines for Conservation of Sensitive Plant Resources Within the Timber Harvest Review Process and During Timber Harvesting Operations (July 2005). The findings presented below are the results of fieldwork conducted from March through August of 2014 and January and May of 2015 by Kjeldsen Biological Consulting:

- Spring floristic surveys were conducted to determine the presence of potential habitat for special-status species which would be impacted by the proposed project. Two CNPS listed plants (Napa False Indigo and California Brodiaea) were observed on the property;
- We did not observe any State or Federal listed plants or animal known for the Quadrangle, surrounding Quadrangles or the region associated with the proposed vineyard blocks;
- In general the habitat types found on the property would be termed forest or woodland, annual grassland on disturbed ground, and shrubland/chaparral. Our findings using the vegetation criteria of Sawyer et al 2009 shows that the property consists of *Quercus* Forest Alliance Mixed Oak Forest, *Pseudotsuga menziesii* Forest Alliance Douglas-fir Forest, *Adenostoma fasiculatum* Shrubland Alliance Chamise Chaparral and *Arctostaphylos manzanita* Provisional Shrubland Alliance;
- The THP/TCP area does not contain any Sensitive or Natural communities, critical habitat or Biotic Communities of Limited Distribution listed by Napa County, California Department of Fish and Wildlife (CDFW) or US Fish and Wildlife (USFWS). The Sensitive Habitats and or Communities regulated by the California Department of Fish and Wildlife on the property include Conn Creek, seasonal drainages, a wetland and a small area of Ponderosa Pine alliance that meet criteria that would be classified as a Biotic Communities of Limited Distribution listed by Napa County;
- "Waters of the U.S" or Waters of the State as defined by Section 404 of the Clean Water Act have been avoided and provided with setbacks. There is an area below the seasonal

wetland on the south side of the property (Block E) which will require agency review, and may need CDFW 1600 permit;
- No significant native wildlife species, wildlife corridors, and or native wildlife nursery sites were identified within the proposed project sites;
- Trees on the property have the potential for support raptor nesting. No sign or sighting of raptors was observed;
- The project will remove native oaks;
- Recommended measures to reduce biological impacts to a less than significant level pursuant to the California Environmental Quality Act (CEQA) are included within our report; and
- All species observed are listed in the appendix.

Assessment of Impacts

The proposed THP/THC will result in the loss of chaparral and woodland habitat and has the potential to impact local biological resources.

Recommendations included within this report are proposed to reduce potential impacts to on-site and off-site biological resources.

Biological Resource Survey
Le Colline Vineyard THP/TCP
APNs 024-300-070, -071, -072 & -340-001
Napa County

A. PROJECT DESCRIPTION

This study was conducted at the request of Scott Butler, Environmental Resource Management on behalf of the property owner as part of the background studies for Napa County Conservation, Development and Planning Department and California Department of Forestry. The project proposes a Timber Harvest Plan / Timber Conversion Plan (THP/TCP) for conversion of 34.8+/- acres of the 88.34-acre property to vineyard. The property is located on the south side of the community of Angwin at 300 Cold Springs Road.

A.1 Location

The project is within four parcels on the west side of Cold Springs Road on the south side of the community of Angwin. The THP/TCP consists of 5 blocks totaling 34.8+/- gross acres within an 88.34-acre property. The project site is on a west-facing ridge that is at an elevation of approximately 1,600 feet within the Saint Helena 7.5 Min USGS Quadrangle (See Plate I). Maps provided by Scott Butler and Drew Aspegren, Napa Valley Vineyard Engineering, Inc. defined the primary study area.

A.1 Purpose

The purpose of this report is to identify biological resources that may be affected by the proposed project as listed below:

- To determine the presence of special-status species which would be impacted by the proposed project, including habitat types which may have the potential for supporting special-status species (target species that are known for the region, habitat, the Quadrangle and surrounding Quadrangles);
- To identify if the project will have a substantial adverse effect on Sensitive Habitats or Communities regulated by the California Department of Fish and Wildlife;
- To identify and assess potential impacts to Federal or State protected wetlands as defined by Section 404 of the Clean Water Act; and
- To determine if the project will substantially interfere with native wildlife species, wildlife corridors, and or native wildlife nursery sites;
- Identify any State or Federal biological permits required by the proposed project; and
- Recommend measures to reduce biological impacts to a less than significant level pursuant to the California Environmental Quality Act (CEQA).

B. SURVEY METHODOLOGY

Our survey and fieldwork was conducted to identify habitat on the project site, provide a faunal and floristic study of the project site with emphasis on any potential habitat for special-status animals, plants, unique plant populations and or biological resources associated with the property and the proposed project.

B.1 Project Scoping

The scoping for the project considered location and type of habitat and or vegetation types present on the property or associated with potential special-status plant species known for the Quadrangles, surrounding Quadrangles the County or the region. Our scoping also considered records in the most recent version of the Department of Fish and Wildlife California Natural Diversity Data Base (CDFW CNDDB Rare Find-5), and the California Native Plant Society (CNPS) Electronic Inventory of Rare or Endangered Plants. "Target" special-status species are those listed by the State, the Federal Government, or the California Native Plant Society or considered threatened in the region. Our scoping is also a function of our familiarity with the local flora and fauna as well as previous projects on other properties in the area.

Aerial photographs and Napa County Baseline Data Report Vegetation Layers are included within our scoping for the project.

Tables IV and V present CDFW CNDDB Rare Find species records for populations within the proximity of the project.

The California Wildlife Habitat Relationship System Species Summary Report by Habitat Present was run to review the potential species that could be present (Table VI).

We also considered species which are known for the nine surrounding Quadrangles which would potentially be present based on habitat available on property (Appendix C). The special-status species listed in Appendix C with habitat requirements that are present on the project sites or immediate vicinity are considered and included in our findings and comments below. Those species with specific habitat conditions not present within the project footprint such as vernal pools or hot springs are not discussed.

Vegetation cover was evaluated in the field using membership rules defined in the Manual of California Vegetation Second Edition (Sawyer et. al. 2009).

B.2 Field Survey Methodology

A site and project introduction was provided by Mr. Drew Aspegren, Napa Valley Vineyard Engineering, Inc. Our studies were made by walking transects through and around the project sites. A site introduction to the southern parcel was conducted by family members of

the owner of the site at that time. Non-project areas of the property were only opportunistically studied from access roads and trails. Our fieldwork focused on locating suitable habitat for organisms or indications that such habitat exists on the project sites. Digital photographs were taken during our fieldwork. Fieldwork was conducted as shown in the table below.

Our survey follows the California Department of Fish and Wildlife (CDFW) Guidelines, and the California Native Plant Society (CNPS) Guidelines, and Guidelines for Conservation of Sensitive Plant Resources Within the Timber Harvest Review Process and During Timber. Harvesting Operations July 2005.

Table I. Time and Date of Field Work

Date	Personnel	Person-hr.	Time	Conditions
March 5, 2014	Chris K. and Daniel T. Kjeldsen	3.0 person-hours	15:00 to 16:30	High clouds cool light breeze.
April 17, 2014	Chris K. and Daniel T. Kjeldsen	4.0 person-hours	14:45 to 16:45	Clear, clear cool temperatures.
May 8, 2014	Chris K. and Daniel T. Kjeldsen	3.0 person-hours	09:00 to 10:30	Overcast, no wind, with mild temperatures.
May 22, 2014	Chris K. and Daniel T. Kjeldsen	3.0 person-hours	12:00 to 13:30	Clear, windy with warm temperatures.
June 25, 2014	Chris K. and Daniel T. Kjeldsen	3.5 person-hours	09:30 to 11:15	Clear, no wind, with mild temperatures.
July 22, 2014	Chris K. and Daniel T. Kjeldsen	4.25 person-hours	10:00 to 12:15	Clear, no wind, with warm temperatures.
August 20, 2014	Chris K. and Daniel T. Kjeldsen	2.0 person-hours	11:00 to 12:00	Clear mild temperatures no wind.
January 7, 2015	Chris K. and Daniel T. Kjeldsen	4.0 person-hours	10:00 to 12:00	Clear mild temperatures no wind.
May 12, 2015	Chris K. and Daniel T. Kjeldsen	4.0 person-hours	2:00 to 4:00	Clear mild temperatures no wind.

Plants

Field surveys were conducted identifying and recording all species on the site and in the near proximity. Transects through the proposed project sites were made methodically by foot. Transects were established and scrutinized to cover topographic and vegetation variations within the study area. The Intuitive Controlled approach calls for the qualified surveyor to conduct a survey of the area by walking through it and around its perimeters, and closely examining portions where target species are especially likely to occur.

Surveys were floristic in nature and were conducted following Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities State of California, California Natural Resource Agency, Department of Fish and Game (November 24, 2009) the California Department of Fish and Game Guidelines for

Conservation of Sensitive Native Plant Resources Within the Timber Harvest Review Process and During Timber Harvesting Operations July 2005.

The fieldwork for identifying special-status plant species is based on our knowledge and many years of experience in conducting special-status plant species surveys in the region. Plants were identified in the field or reference material was collected, when necessary, for verification using laboratory examination with a binocular microscope and reference materials. Herbarium specimens from plants collected on the project site were made when relevant. Voucher material for selected individuals is in the possession of the authors and shown in the attached plant list (Appendix A) with an @ in front of the taxon. All plants observed (living and/or remains from last season's growth) were recorded in field notes.

Typically, blooming examples are required for identification however; it is not the only method for identifying the presence of or excluding the possibility of rare plants. Vegetative morphology and dried flower or fruit morphology, which may persist long after the blooming period, may also be used. Skeletal remains from previous season's growth can also be used for identification. Some species do not flower each year or only flower at maturity and therefore must be identified from vegetative characteristics. Algae, fungi, mosses, lichens, ferns, Lycophyta and Sphenophyta have no flowers and there are representatives from these groups that are now considered to be special-status species, which require non-blooming identification. For some plants unique features such as the aromatic oils present are key indicator. For some trees and shrubs with unique vegetative characteristics flowering is not needed for proper identification. The vegetative evaluation as a function of field experience can be used to identify species outside of the blooming period to verify or exclude the possibility of special-status plants in a study area.

Habitat is also a key characteristic for consideration of special-status species in a study area. Many special-status species are rare in nature because of their specific and often very narrow habitat or environmental requirements. Their presence is limited by specific environmental conditions such as: hydrology, microclimate, soils, nutrients, interspecific and intraspecific competition, and aspect or exposure. In some situations special-status species particularly annuals may not be present each year and in this case one has to rely on skeletal material from previous years. A site evaluation based on habitat or environmental conditions is therefore a reliable method for including or excluding the possibility of special-status species in an area.

Reference sites for Napa False Indigo, Napa Western Flax, White Manzanita and Holly-leaf Ceanothus were visited.

Animals

Animals were identified in the field by their sight, sign, or call. Our field techniques consisted of surveying the area with binoculars and walking the perimeter of the project site. Existing site conditions were used to identify habitat, which could potentially support special status animal species. All animal life was recorded and is presented in Appendix A.

Trees were surveyed to determine whether occupied raptor nests were present within the proximity of the project site (i.e., within a minimum 500 feet of the areas to be disturbed). Surveys consisted of scanning the trees on the property (500 ft +) with binoculars searching for nest or bird activity. Our search was conducted from the property and by walking under existing trees looking for droppings or nest scatter from nests that may be present that were not observable by binoculars.

Aerial photos were reviewed to look at the habitat surrounding the site and the potential for wildlife movement, or wildlife corridors from adjoining properties onto or through the site.

Trees were assessed for bats using 10x42 roof-prism binoculars. Trees were examined for evidence of suitable potential colonial bat roosting habitat, comprised of cavities, crevices, and exfoliating bark. All animal life observed was recorded and is presented in Appendix A.

Wildlife Movement

Aerial photos were reviewed to look at the habitat surrounding the site and the potential for wildlife movement, or wildlife corridors from adjoining properties onto or through the property. Our field methodology for identifying corridors for movement searched for game trails or habitat which would favor movement of wildlife or potential gene flow. We also looked for barriers which would prevent movement or direct movement to particular areas. No game cameras, track plates, or other field equipment were used.

Criteria for evaluating the corridors - Corridors are considered suitable for wildlife movements if they provide avenues along which:

1. Wide-ranging animals can travel, migrate and meet mates.
2. Plants can propagate.
3. Generic interchange can occur.
4. Populations can move in response to environmental changes and natural disasters.
5. Individuals can re-colonize habitats from which populations have been locally extirpated.

These five functions were used to evaluate potential wildlife corridors on the property and to determine if the project would interrupt any corridors.

Wetlands

The project site was reviewed to determine from existing environmental conditions with a combination of vegetation, soils, and hydrologic information if seasonal wetlands were present. Wetlands were evaluated using the ACOE's three-parameter approach: Vegetation, Hydrology, and Soils.

Tributaries to Waters of the U.S.

Tributaries to Waters of the US are determined by the evaluation of continuity and "ordinary high water mark." The ordinary high water mark is determined based on the top of scour marks and high flow impacts on vegetation. Tributaries to Waters of the U.S. as well as "Waters of the State" are determined by the presence of a definable bed and bank, evidence

of or ability to transport sediment and/or a blue line on USGS Quadrangle Map.

Streams /Drainages

In the area there are two types of streams or drainages; 1) perennial flowing waters and 2) seasonal ephemeral creeks or drainages that convey water during and shortly after rainfall. USGS 7.5 Min Quadrangle maps for the site were analyzed for the presence of "blue line" creeks. On site topography and evidence of bed and bank was used for evaluating ephemeral drainages. Drainages were walked and visually evaluated for continuity of bed and bank as well as signs of aquatic life. Representative photographs were made. The streambed was evaluated for flow, pools, substrate, bank and quality of habitat recorded in field notes. Vegetation in the streambed was recorded if present and quality and quantify of riparian conditions as distinct from surrounding vegetation noted.

C RESULTS / FINDINGS

Our results and findings are based on our fieldwork, literature search, and the background material available for the proposed vineyard blocks.

C.1 Site Description and Biological Resources Evaluation Area

The property is located above the Napa Valley within the inner North Coast Range Mountains, a geographic subdivision of the larger California Floristic Province (Hickman, 1993). The property and surrounding region is strongly influenced storms and fog from the Pacific Ocean. The region is in climate Zone 14 "Ocean influenced Northern and Central California" characterized as an inland area with ocean or cold air influence. The climate of the region is characterized by hot, dry summers and cool, wet winters, with precipitation that varies regionally from less than 30 to more than 60 inches per year. This climate regime is referred to as a "Mediterranean Climate." The average annual temperature ranges from 45 to 90 degrees Fahrenheit. The variations of abiotic conditions including geology results in a high level of biological diversity per unit area in the region.

The property is on a southwest-facing ridge that is at an elevation of approximately 1,600 feet above sea level and is within the Saint Helena 7.5 Min USGS Quadrangle, south of the community of Angwin.

The project site and proposed vineyard blocks are shown in Figures 1 to 7.

The survey area is shown on Plate III. Our survey focused on the proposed project footprint, and immediate surrounding habitat. The aerial photo illustrates the site (Plate III) and the photographs that follow further document existing conditions of the project sites.

C.2 Habitat Types Present

The vegetation of California has been considered to be a mosaic with major changes present from one area to another often with distinct vegetation changes within short distances. The variation in vegetation is a function of topography, geology, climate and biotic factors. It is generally convenient to refer to the vegetation associates on a site as a plant community or alliance. Typically plant communities or vegetation alliances are identified or characterized by the dominant vegetation form or plant species present. There have been numerous community classification schemes proposed by different authors using different systems for the classification of vegetation. A basic premise for the designation of plant communities, associations or alliances is that in nature there are distinct plant populations occupying a site that are stable at any one time (climax community is a biotic association, that in the absence of disturbance maintains a stable assemblage over long periods of time). There is also evidence that vegetation on the site is part of a continuum without well-defined boundaries.

Biotic Communities integrate the concept of assemblages of plants and animals in a discrete area of the landscape associated with particular soils climate and topographic conditions. The Plant Community on the parcel would be classified by California Native Plant Society (CNPS) and Department of Fish and Wildlife California Natural Diversity Data Base (CNDDB) as: Cismontane Woodland and Chaparral. The disturbed area on the north side of the property and around the spring on the south side consist of ruderal grasslands which.

Our analysis of the vegetation cover on the property using the Manual of California Vegetation Second Edition (Sawyer et al 2009) shows that the property and the project sites (THP/TCP) consist of Forest or Woodland Alliances, Shrubland Chaparral Alliances, and Herbaceous Grassland Stands with Herbaceous Layer. Forest or Woodland Alliances are *Quercus* Forest Alliance Mixed Oak Forest, *Pinus ponderosa* Woodland Alliance Ponderosa Pine Woodland, and *Pseudotsuga menziesii* Forest Alliance Douglas-fir Forest. The Shrubland Chaparral Alliances are *Adenostoma fasiculatum* Shrubland Alliance Chamise Chaparral and *Arctostaphylos manzanita* Provisional Shrubland Alliance (see Plate IV).

The project footprint THP/TCP consists of:

Quercus Forest Alliance Mixed Oak Forest,
Pseudotsuga menziesii Forest Alliance Douglas-fir Forest.
Adenostoma fasiculatum Shrubland Alliance Chamise Chaparral and
Arctostaphylos manzanita Provisional Shrubland Alliance.

The non-project areas of the property consist of:

Pinus ponderosa Woodland Alliance Ponderosa Pine Woodland,
Quercus Forest Alliance Mixed Oak Forest,
Pseudotsuga menziesii Forest Alliance Douglas-fir Forest,
Adenostoma fasiculatum Shrubland Alliance Chamise Chaparral,
Arctostaphylos manzanita Provisional Shrubland Alliance,
Wetland and Riparian (provided with standard setbacks) and
Herbaceous Grassland Stands with Herbaceous Layer.

In the sections below each of the vegetation habitat types present on the property are described and further categorized with the vegetation classification of Sawyer *et al* (2009).

Forest or Woodland Alliances

Woodland Alliances are characterized by a dominant tree overstory and different degrees of understory development. Fire management, canopy age and degree of closure, windfalls, historic use, present use, substrate base, invasive species, aspect and rainfall are variables that control the degree of understory shrubs, herbs and tree recruitment.

The woodland alliances on the property consist of the following:

Pseudotsuga menziesii Forest Alliance Douglas-fir Forest; *Pseudotsuga menziesii* is dominant or co-dominant with hardwoods in the tree canopy with *Abies concolor, Acer macrophyllum, Alnus rhombifolia, Arbutus menziesii, Calocedrus decurrens, Chamaecyparis*

lawsoniana, Chrysolepis chrysophylla, Cornus nuttallii, Pinus contorta, P. lambertiana, P. jefferyi, Quercus agrifolia, Q. chrysolepis, Q. garryana, Q. kelloggii, and *Sequoia sempervirens* (membership rules >50% relative cover in the tree canopy and reproducing successfully, though hardwoods may dominate or co-dominate in the subcanopy and regeneration layer). Trees > 75 m; canopy is intermittent to continuous, and it may be two tiered. Shrubs are infrequent or common. Herbaceous layer is sparse or abundant.

***Quercus* (*agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni*)** Forest Alliance Mixed Oak Forest; *Quercus agrifolia, Q. douglasii, Q, garryana, Q. kelloggii, Q. lobata* and/or *Q. wislizeni* are co-dominant in the tree canopy with *Aesculus californica, Arbutus menziesii, Pinus sabiniana, Pseudotsuga menziesii,* and *Umbellularia californica*. The canopy is intermittent to continuous. Shrubs are infrequent or common, herbaceous layer is sparse or abundant, may be grassy. This Alliance is found in valley and on gentle to steep slopes. The membership rules require three or more *Quercus* species present at >30% constancy and they are co-dominant in the tree canopy.

Pinus ponderosa Forest Alliance Ponderosa Pine Forest; *Pinus ponderosa* is the dominant or co-dominant in the tree canopy with *Pseudotsuga menziesii* and *Quercus kelloggii.* Trees >50 m: canopy is open to continuous. Shrub layer is open to continuous with a herbaceous layer that is sparse, abundant or grassy (membership rules *Pinus ponderosa,* the principle canopy species, >10% absolute cover in the tree layer. *Quercus kelloggii,* if present substantially lower cover than *P. ponderosa. Pinus ponderosa >50%* relative cover, hardwoods such as *Q. kelloggii* are low in cover, if present. This stand is outside of the footprint of the project in the southwest corner of the property and is associated with the seasonal drainage present.

Willows within the wetland and surrounding the wetland are noted but are not considered an alliance and not treated as a habitat type on the property.

Chaparral/Scrub Alliance

This vegetation type has been divided by numerous authors into Mixed Chaparral/Scrub, Serpentine Chaparral, and Chamise Chaparral**.** Chaparral is a vegetation type that is restricted to dry, exposed slopes (usually south facing) and is typical for the ridges and slopes of the interior Coast Range Mountains of Napa County. The dominant plant species that define the chaparral habitat sub-type will be dependent on the soil substrate, such as serpentinite or volcanic geologic formations. Chaparral habitat types tend to be low in biotic diversity, as they do not provide rich habitat value. Chaparral vegetation consists mainly of shrubs that are woody and with leaves adapted to xeric conditions (Holland and Kiel, l986). Periodic fires are characteristic of this community. Many of the species stump sprout after fires, which is characteristic of this habitat and this community, and as a seral stage, is threatened by the absence of a normal fire regime. The principal shrub constituents of Chaparral/Scrub are; chemise (*Adenostoma fasciculatum),* manzanita, *(Arctostaphylos* ssp.), sticky monkey flower *(Mimulus aurantiacus),* yerba-santa (*Eriodicyton californicum*) ceanothus *(Ceanothus* ssp.), scrub oak *(Quercus berberidifolia),* and pitcher sage *(Lepchinia calycina)*.

The chaparral Shrubland alliance on the property consist of the following:

Arctostaphylos manzanita Provisional Shrubland Alliance. *Arctostaphylos manzanita* is a variable Manzanita with subspecies. The most widely ranging subspecies is ssp. *manzanita,* and it occurs in many chaparral and woodland types. *Arctostaphylos manzanita* is dominant in the shrub canopy with *Adenostoma fasiculatum, Ceanothus* ssp., and *Heteromeles arbutifolia.* Emergent *Quercus douglasii* trees may be present at low cover. Shrubs <6m. canopy is intermittent. Herbaceous layer is sparse.

Adenostoma fasiculatum Shrubland Alliance Chamise Chaparral; *Adenostoma fasiculatum* is dominant in the shrub canopy with *Arctostaphylos glandulosa, A. manzanita, Ceanothus* ssp., *Diplacus aurantiacus, Eriodictyon californicum, Eriogonum fasiculatum, Heteromeles arbutifolia, Quercus berberidifolia, W. wislizeni,* and *Toxicodendron diversilobum.* Emergent trees may be present at low cover. Shrubs < 4 m; canopy is intermittent to continuous. Herbaceous layer is sparse to intermittent. (Membership Rules *Adenostoma fasciculatum* >50% relative cover in the shrub canopy: codominance of *A. fasiculatum* with the following species *Arctostaphylos glandulosa* and *Ceanothus cuneatus*). This alliance occurs across cismontane California in a variety of topographic settings. *Adenostoma fasciculatum* Is a long-lived, shade intolerant shrub that grows to 3.5 m. Stands over 60 years old produce little new growth as dead stem biomass accumulates.

Ruderal Grassland/ Semi-natural Grassland Stand with Herbaceous Layer

This stand is present in disturbed open areas of the study area. Sawyer uses the term Semi-natural to classify grassy areas that consist of non-native naturalized species.

A complete list of all plants encountered on the project site and immediate vicinity is included in Appendix A. The vegetation mapping shown on Plate III provides a visual indication of the major alliances.

Table II. Approximate Acreage of Plant Communities or Alliances Impacted

Plant Community or Vegetation Alliance	Acreage on Property (88.34-acre Property)	Acreage Within THP/TCP (Total 34.8-acres)	Estimated Percentage to be removed	Estimated Percentage to Remain
Woodland Alliance Douglas-fir Forest Alliance	**32**	**12**	**37%**	**63%**
Woodland Alliance Mixed Oak Alliance	**20**	**8**	**40%**	**60%**
Shrubland/Chaparral Alliance Manzanita Chaparral Alliance	**10**	**4**	**40%**	**60%**
Shrubland/Chaparral Alliance Chamise Chaparral Alliance	**22**	**9**	**40%**	**60%**
Ruderal Grassland along access roads, wetland, fruit trees	**2**	**1**	**50%**	**50%**

Table III. Respective Characteristics Of Plant Communities (See Plate IV as well as the photographs below which illustrate the distribution and characteristics of each alliance).

Plant Community or Vegetation Alliance	Respective Characteristics Approximate tree density (Average trees and species per acre)
Douglas-fir Forest Alliance	Douglas-fir forest on the site is a result of modified fire regime and the Douglas-fir represent a succession stage where they are replacing the Oak Woodlands. The understory is limited. Douglas-firs are on a < 10-foot spacing. There are occasional Ponderosa Pines mixed with this Alliance but their canopy cover does not meet the criteria for considering this as a separate alliance.
Mixed Oak Alliance	The trees in this alliance are of mixed age classes. Several different Oak species are present mixed with Doug-fir and Ghost Pine. This Mixed Oak Alliance differs from the Oak Woodlands found in the Valley and classic Oak Woodlands as they contain many different shrubs and tree species. The canopy is intermittent to continuous. Shrubs are infrequent or common, herbaceous layer is sparse. Oaks 6 to 20" DBH dominate the site on 10 to 20 foot spacing.
Manzanita Chaparral Alliance	*Arctostaphylos manzanita* is the dominant shrub with other chaparral species. The cover is dense with occasional openings and the population is primarily of one age class. The herbaceous layer is sparse to intermittent. The cover is dense and complete with occasional openings.
Chamise Chaparral Alliance	The *Adenostoma fasiculatum* alliance contains dominant of Chamise with open areas of grassland, rock and contains areas with Ghost Pines. Emergent trees are present at low cover apparently a result of the absence of fire. Herbaceous layer is sparse to intermittent. The cover is dense and complete with occasional openings.
Grassland	Semi-natural stands in areas that have been disturbed by historic clearing. The areas are dominated by "Weeds."

Figure 1. View of typical habitat associated with the THP/TCP illustrating Douglas-fir alliance.

Figure 2. Open area with regenerating shrubs and Douglas-fir on the northeast side of the project site.

Figure 3. Chaparral along the west side of the property.

Figure 4. Chaparral in the foreground and Douglas-fir woodlands in the background on the south west side of the property.

Figure 5. Wetland seep along the southeast side of the property that has been avoided.

Figure 6. Douglas-fir woodland with understory of Napa false indigo. This area will be avoided by the proposed project.

Figure 7. Mixed Oak Woodland Alliance.

The aerial photograph, Plate III illustrates the site and the surrounding environment.

Forest Characteristics Surrounding The Property

Our study focused on the property and the project sites. Aerial interpretation and observations from access roads show that the surrounding vegetation cover consists of;

- On the north side of the property-Douglas fir Woodland Alliance, Grassland Semi-natural Herbaceous Stands and Mixed Oak Alliance;
- On the east side of the property-Residences with landscape plantings, Douglas fir Forest Alliance and Mixed Oak Alliance;
- On the south side of the property- Douglas fir Forest Alliance;
- On the west side of the property- Chaparral Alliance and Mixed Oak Alliance.

All indications show that the surrounding forest alliances are seral stages as a result of previous harvests or fire.

C.3 Special-Status Species

Special-status organisms are plants or animals that have been designated by Federal or State agencies as rare, endangered, or threatened. Section 15380 of the California Environmental Quality Act [CEQA (September, 1983)] has a discussion regarding non-listed (State) taxa. This section states that a plant (or animal) must be treated as Rare or Endangered even if it is

not officially listed as such. If a person (or organization) provides information showing that the taxa meets the State's definitions and criteria, then the taxa should be treated as such.

Plants

A map from the CDFW CNDDB Rare Find shows known special-status species in the proximity of the project as shown on Plate II. These taxa as well as those listed in Appendix C Special-status Species known for the Quadrangle and Surrounding Quadrangles were considered and reviewed as part of our scoping for the project site and property. Reference sites were reviewed as part of our scoping for some of the species.

Table IV below provides a list of species that are known to occur in the area (CDFW CNDDB Rare Find 5 mile search). The table includes an analysis / justification for concluding presence or absence.

Table IV. Analysis of CDFW CNDDB target plant species. Columns are arranged alphabetically by scientific name.

Scientific Name Common Name	**Species Habitat Association or Plant Community**	**Habitat present on Project Site**	**Bloom Time**	**Obs. on or Near Site**	**Analysis of habitat on project site for presence or absence.**
Amorpha californica var. *napensis* Napa False Indigo	Cismontane Woodland	Yes	April-July	Yes	Present and common on property north side (see Plate IV.
Amsinkia lunularis Bent-flowered Fiddleneck	Cismontane Woodland, Valley and Foothill Grassland, 3 to 500 M	No	March-June	No	Potential for project site. No indications for presence during our fieldwork.
Astragalus claranus Clara Hunt's Milk-vetch	Chaparral, Cismontane Woodland, Valley and Foothill Grassland	No	March-May	No	Absence of requisite micro-habitat, vegetation associates and closed canopy. Lack of finding during our fieldwork.
Brodiaea leptandra Narrow-anthered Brodiaea	Cismontane Woodland	Yes	May-June	Yes	Present. Populations on site will be avoided.
Calystegia collina ssp. *oxyphylla* Mt. Saint Helena Morning-glory	Chaparral Serpentinite	Yes	April-June	No	Requisite habitat and edaphic conditions absent.

Scientific Name Common Name	Species Habitat Association or Plant Community	Habitat present on Project Site	Bloom Time	Obs. on or Near Site	Analysis of habitat on project site for presence or absence.
Ceanothus confusus Rincon Ridge Ceanothus	Closed Cone Conifer Forests, Chaparral	No	Feb.-April	No	Absence of typical habitat and vegetation associates.
Ceanothus divergens Calistoga Ceanothus	Chaparral, Serpentinite or Volcanic-Rocky.	No	May-Sept.	No	Absence of typical habitat and vegetation associates. Lack of finding during our fieldwork.
Ceanothus purpureus Holly-leaved Ceanothus	Chaparral	No	March-May	No	Absence of typical habitat and vegetation associates. Lack of finding during our fieldwork.
Ceanothus sonomensis Sonoma Ceanothus	Chaparral, Serpentinite or rocky Volcanic	Yes	Feb.-March	No	No evidence found during our surveys.
Centromadia parryi ssp. *parryi* Pappose Tarplant	Grassland salt or alkaline Marshes	No	March-June	No	Requisite mesic conditions absent. Lack of finding during our fieldwork.
Erigeron greenei Green's Narrow-leaved Daisy	Chaparral, (Serpentinite)	No	May-Sept.	No	Absence of edaphic conditions required for presence.
Harmonia hallii Hall's Harmonia	Open Areas in Serpentinite Chaparral	No	April-June	No	Absence of requisite edaphic conditions.
Hesperolinon bicarpellatum Two-carpellate Western Flax	Chaparral	No	May-July	No	Requisite edaphic habitat absent on the site or in the immediate vicinity precludes presence.
Hesperolinon scharsmithiae Sharsmith's Western Flax	Chaparral, Serpentinite	No	May-July	No	Requisite edaphic habitat absent on the site or in the immediate vicinity.
Hesperolinon tehamense Tehama County Western Flax	Chaparral, Serpentinite	No	May-July	No	Requisite edaphic habitat absent on the site or in the immediate vicinity.

Scientific Name Common Name	Species Habitat Association or Plant Community	Habitat present on Project Site	Bloom Time	Obs. on or Near Site	Analysis of habitat on project site for presence or absence.
Juncus luciensis Santa Lucia Dwarf Rush	Seeps, Meadows, Vernal Pools, Stream sides	No	April-June	No	Absence of requisite mesic habitat.
Layia septentrionalis Colusa Layia	Cismontane Woodland, Valley & Foothill Grassland, Chaparral Serpentinite, or sandy soils.	No	April-May	No	Requisite edaphic habitat absent on the site or in the immediate vicinity.
Leptosiphon jepsonii Jepson's Leptosiphon	Chaparral, Cismontane Woodland, Valley and Foothill Grassland	Yes	April-May	No	Requisite habitat absent on the site as well as closed canopy. Lack of finding during our fieldwork.
Limnanthes floccosea ssp. *floccosa* Woolly Meadowfoam	Meadows and Seeps, Vernal Pools Grassland, Cismontane Woodland	No	April-May	No	Requisite mesic habitat absent on the site or in the immediate vicinity.
Limnanthes vinculans Sebastopol Meadowfoam	Meadows and Seeps, Valley and Foothill Grassland, Vernal Pools	No	April-May	No	Requisite mesic habitat absent on the site or in the immediate vicinity.
Lupinus sericatus Cobb Mountain Lupine	Broadleaved upland forest, chaparral, cismontane woodland	Yes	March-June	No	Absence of requisite vegetation associates as well as historical use of project site precludes presence.
Navarretia leucocephala ssp. *bakeri* Baker's Navarretia	Meadows and Seeps Cismontane Woodland, Valley and Grassland, Vernal Pools	No	May-July	No	Absence of typical habitat and vegetation associates. Lack of finding during our fieldwork.

Scientific Name Common Name	Species Habitat Association or Plant Community	Habitat present on Project Site	Bloom Time	Obs. on or Near Site	Analysis of habitat on project site for presence or absence.
Navarretia rosulata Marin County Navarretia	Closed Cone Coniferous Forest, Chaparral, Serpentinite	No	May-July	No	Requisite edaphic conditions absent on the site or in the immediate vicinity.
Penstemon newberryi var. *sonomensis* Sonoma Beardtongue	Cismontane Woodland, exposed rock outcrops/ talus of peaks.	Yes	April-Aug.	No	No findings during our fieldwork. Closed canopy also precludes presence.
Plagiobothrys strictus Calistoga Popcorn-flower	Vernal pools near thermal springs	No	March-June	No	Requisite mesic habitat absent on the site or in the immediate vicinity.
Sidalcea oregana ssp. *hydrophila* Marsh Checkerbloom	Meadows and seeps, Riparian scrub mesic	No	June-Aug.	No	Requisite mesic habitat absent.
Strepthanthus hisperidis Green Jewel-flower	Rocky Chaparral, Grassland	No	April-July	No	Lack of edaphic habitat and historic use of project site precludes presence
Trichostema ruygtii Napa Bluecurls, Vinegar Weed	Grassland	No	June-Aug.	No	Requisite habitat absent on the site. Historic use of the site precludes presence.

The CDFW CNDDB shows a confidence interval for the Cobb Mountain Lupine (*Lupinus sericatus*) that overlaps the project site. Cobb Mountain Lupine is easily identified in flower or in its vegetative state. We found no evidence for presence of this species on the property or the project sites.

Other taxa in the table above that are known to occur within five miles of the project site are reasonably precluded from being present based on the lack of wetlands within the project area, absence of serpentinite soils or rock, habitat and vegetation present.

Spring surveys found two CNPS listed plants the Napa false Indigo and California Brodiaea. These plants do not have Federal or State Listing. This species does not have state or federal listing but must be addressed as per CEQA.

The project has been designed to avoid all identified populations of these species. These have been flagged and are mapped on the THC TCP and ECP. We submit that the project will not significantly impact these species and no action is recommended other than avoidance.

Animals

A map from the CDFW CNDDB Rare Find-3 shows known special-status species in the proximity of the project as shown on Plate II. These taxa as well as those listed in Appendix B Special-status Species known for the Quadrangle and Surrounding Quadrangles were considered and reviewed as part of our scoping for the project site and property.

Table V below provides a list of species that are known to occur in the area (CDFW CNDDB Rare Find 3-5 mile search, Rare Find 5 surrounding quadrangles and U.S. Fish and Wildlife species for the area). The table includes an analysis / justification for concluding presence or absence.

Table V. Analysis of target animal species. Columns are arranged alphabetically by scientific name.

Scientific Name Common Name	**Habitat**	**Potential for Property**	**Obs. or Potential for Project Site**	**Analysis of habitat on project site for presence or absence.**
Accipter sriatus Sharp-Shinned Hawk	Avian prey, Nests in conifers or tops of live oaks	Yes	No	Species was not observed during our survey. Potential nesting habitat present.
Agelaius tricolor Tricolored Blackbird	Tule Marshes	No	No	Lack of habitat.
Antrozous pallidus Pallid Bat	Roosts in Buildings and Overhangs, woodlands	Yes	Yes	Known to use a wide variety of habitats. Low potential on project site.
Aquila pallidus Golden Eagle	shrublands, grasslands, coniferous forests	No	No	Lack of suitable habitat.
Ardea alba Great Egret	Nests in colonies	No May fly over	No	Lack of Habitat.
Ardea herodias Great Blue Heron	Forages in wetlands, flooded fields, & shallow water. Nests in colonies in large trees.	No	No	Lack of suitable habitat for nesting.

Scientific Name Common Name	**Habitat**	**Potential for Property**	**Obs. or Potential for Project Site**	**Analysis of habitat on project site for presence or absence.**
Corynorhinus townsendii Townsend's Big-eared Bat	Caves, also in Buildings	Yes	Yes	No significant natural roosting habitat observed. Trees contain low potential habitat.
Desmocerus californicus dimorphus Valley Elderberry Longhorn Beetle	Larva Require Elderberry Plants	No	No	No host plants present.
Elanus leucurus White-tailed Kite	Nests in tall trees near water	No	No	Requisite habitat absent.
Emys marmorata Western Pond Turtle	Slow moving water or ponds	No	No	May be in Conn Creek. Not likely to be associated with proposed project footprint.
Falco mexicanus Prairie Falcon	Nests on cliffs	No	No	May fly over. Lack of habitat for nesting and feeding.
Falco peregrinus anatum American Peregrine Falcon	Nests on cliffs	No	No	May fly over. Lack of habitat for nesting and feeding.
Halliaetus leucocephalus Bald Eagle	Nests near open water.	No	No	Lack of habitat.
Hypomesus transpacificus Delta Smelt	Sacramento San Joaquin Delta	No	No	Lack of aquatic habitat.
Lasiurus cinereus Hoary Bat	Roosts tree foliage	Yes	Yes	Low potential on project site.
Myotis yummanensis Yuma myotis	Juniper, Riparian Woodlands	Yes	No	Low potential on project site.
Myotis thysanodes Fringed Myotis	Montane Forests or Montane Meadows	Yes	Yes	Low potential on project site.
Oncorhynchus mykiss irideus Steelhead-central California Coast	Aquatic	No	No	No Aquatic habitat on property.

Scientific Name Common Name	Habitat	Potential for Property	Obs. or Potential for Project Site	Analysis of habitat on project site for presence or absence.
Phalacrocroax auritus Double-crested Cormorant	Colonial nests on cliffs & islands on the coast & lake margins. Feeds in open water.	No	No	Lack of habitat.
Rana boylii Foothill Yellow-legged Frog	Streams with pools	No	No	Lack of habitat precludes presence.
Rana draytonii California Red-legged Frog	Creeks, Rivers, Permanent flowing water.	No	No	Lack of habitat within the project footprint.
Progne subis Purple Martin	Open areas near water	No	Yes	Lack of habitat.
Strix occidentalis caurina Northern Spotted Owl	Old Growth Forests	Yes	Yes	Lack of nesting habitat. Potential foraging habitat on property.
Syncaris pacifica California Freshwater Shrimp	Creeks & Estuaries below 300 ft.	No	No	Requisite habitat required for presence lacking.

Our fieldwork did not find special-status animal species known for the Quadrangle surrounding Quadrangles or for the region that would be impacted by the proposed project. The present conditions of the project site are such that there is little reason to expect the occurrence of any special-status animal species within the footprint of the project.

California Wildlife Habitat Relationships System

California Wildlife Habitat Relationship System Query provides a list of species predicted to occur within habitat types on the property. The Woodlands and Chaparral present on the property support native wildlife species typical for the region. The THP/TCP will remove a portion of the habitat on the property. Wildlife associated with the habitat within the THP/TCP will be displaced to adjoining parcels or to avoided habitat on the property. Our analysis of the loss is that the impacts will be less than significant provided the recommendations are followed.

Table VI. California Wildlife Habitat Relationship System selected by Habitat Types Present.

Taxa **Common Name**	**Potential for Habitats on project site**	**Species Observed On Site**	**Impact of THP/TCP on Species Habitat**
CALIFORNIA TIGER SALAMANDER	No	No	None
COMMON ENSATINA	Yes	No	Low
CALIFORNIA RED-LEGGED FROG	No	No	None
GREAT BLUE HERON	No	No	None
GREAT EGRET	No	No	None
OSPREY	No	No	None
WHITE-TAILED KITE	No	No	None
BALD EAGLE	No	No	None
NORTHERN HARRIER	Yes	No	Low
BLACK RAIL	No	No	None
CLAPPER RAIL	No	No	None
MOUNTAIN PLOVER	No	No	None
BURROWING OWL	No	No	None
LONG-EARED OWL	No	No	None
SHORT-EARED OWL	No	No	None
OLIVE-SIDED FLYCATCHER	Yes	No	Low
PURPLE MARTIN	No	No	Low
BEWICK'S WREN	No	No	Low
MARSH WREN	No	No	None
LOGGERHEAD SHRIKE	Yes	No	Low
HUTTON'S VIREO	No	No	Low
YELLOW WARBLER	No	No	Low
COMMON YELLOWTHROAT	No	No	Low
YELLOW-BREASTED CHAT	No	No	Low
SPOTTED TOWHEE	Yes	Yes	Low
CALIFORNIA TOWHEE	Yes	No	Low
VESPER SPARROW	No	No	Low
BELL'S SPARROW	No	No	None
SAVANNAH SPARROW	No	No	None
GRASSHOPPER SPARROW	No	No	Low
SONG SPARROW	Yes	No	Low
YELLOW-HEADED BLACKBIRD	No	No	None
ORNATE SHREW	No	No	None
WESTERN RED BAT	Yes	No	Low
TOWNSEND'S BIG-EARED BAT	Yes	No	Low
PALLID BAT	Yes	No	Low

Taxa Common Name	Potential for Habitats on project site	Species Observed On Site	Impact of THP/TCP on Species Habitat
BRUSH RABBIT	No	No	None
BLACK-TAILED JACKRABBIT	Yes	No	
CALIFORNIA KANGAROO RAT	No	No	None
DEER MOUSE	Yes	No	Low
DUSKY-FOOTED WOODRAT	Yes	Nests	Low
CALIFORNIA VOLE	No	No	Low
RINGTAIL	No	No	Low
MOUNTAIN LION	Yes	No	Low
NORTHERN RUBBER BOA	No	No	Low
RING-NECKED SNAKE	Yes	No	Low
STRIPED RACER	No	No	Low
GOPHERSNAKE	Yes	No	Low
COMMON GARTERSNAKE	Yes	No	Low

C.4 Discussion of Sensitive Habitat Types

The Napa County Baseline Data Report defines Biotic communities as the characteristic assemblages of plants and animals that are found in a given range of soil, climate, and topographic conditions across a region. Sensitive biotic communities in the County were identified using a two-step process for the Napa County Baseline Data Report.

The Napa County Baseline Data Report as well as the California Department of Fish and Wildlife Natural Diversity Data Base (CDFW CNDDB) lists recognized Sensitive Biotic Communities. The Napa County Baseline Data Report lists twenty-three communities which are considered sensitive by CDFW due to their rarity, high biological diversity, and/or susceptibility to disturbance or destruction.

The Sensitive Biotic Communities recognized for Napa County are the following:
Serpentine bunchgrass grassland, Wildflower field (located within native grassland), Creeping ryegrass grassland, Purple Needlegrass grassland, One-sided bluegrass grassland, Mixed serpentine chaparral, McNab cypress woodland, Oregon white oak woodland, California bay forests and woodlands, Fremont cottonwood riparian forests, Arroyo willow riparian forests, Black willow riparian forests, Pacific willow riparian forests, Red willow riparian forests, Narrow willow riparian forests, Mixed willow riparian forests, Sargent cypress woodland, Douglas-fir-ponderosa pine forest (old-growth), Redwood forest, Coastal and valley freshwater marsh, Coastal brackish marsh, Northern coastal salt marsh, and Northern vernal pool.

Napa County biotic communities of limited distribution that are sensitive include:

> *Native grassland; Tanbark oak alliance; Brewer willow alliance; Ponderosa pine alliance; Riverine, lacustrine, and tidal mudflats; and Wet meadow grasses super alliance.*

Kjeldsen Biological Consulting did not identify any Sensitive Biotic Communities and or Biotic Communities of Limited Distribution as defined in the County Baseline Data Report within the THP/TCP.

The woodlands on the site and surrounding the project area consist of a mix of conifers and broad leaf trees. The chaparral is not a *Mixed Serpentine Chaparral* and the grasslands are ruderal with a dominance of non-native annuals.

Ponderosa pines are present within the woodlands but they do not meet the criteria, as per Sawyer 2009, for an alliance based on the percent canopy cover within the area of the proposed THP/THC. They are a part of the Douglas-fir Alliance. The ponderosa pines within the THP/TCP do not constitute a ponderosa pine forest in that they do not meet the dominance criteria, size criteria or canopy cover requirements for this forest type (see below for the Sawyer criteria). Ponderosa pine is commonly associated with Douglas-fir and sometimes with knobcone pine. Associated shrubs include manzanita, ceanothus, and poison oak. Grasses and forbs include one-sided bluegrass, bedstraw (*Galium* spp.), and bracken fern.

There is a small area of Ponderosa Pine Forest Alliance present within the drainage on the south side of the on the property, this area has been avoided.

Pinus ponderosa Forest Alliance Ponderosa Pine Forest; *Pinus ponderosa* is the dominant or co-dominant in the tree canopy with *Pseudotsuga menziesii* and *Quercus kelloggii.* Trees >50 m: canopy is open to continuous. Shrub layer is open to continuous with a herbaceous layer that is sparse, abundant or grassy (membership rules *Pinus ponderosa,* the principle canopy species, >10% absolute cover in the tree layer. *Quercus kelloggii,* if present substantially lower cover than *P. ponderosa. Pinus ponderosa >50%* relative cover, hardwoods such as *Q. kelloggii* are low in cover, if present (Sawyer, 2009).

Pseudotsuga menziesii Forest Alliance Douglas-fir Forest (Old Growth) is a recognized sensitive plant community. The property is dominated by a Douglas-fir alliance. The trees represent seral stages of growth indicative of a historic fire regime that has impacted the area. The trees show evidence of open growth as evidenced by the branching pattern. We found no evidence of a typical old growth forest.

Old Growth Douglas fir is considered in the Napa County Baseline Report as a sensitive woodland community in the county. The Douglas fir on the property consists of seral stages with areas with dense regeneration and different age classes. Mature Douglas fir individual are present but they do not constitute an "Old growth Forest."

The grasslands within the footprint of the project do not consist of any of the sensitive grassland communities listed by the County Baseline Data Report or CDFW. Sawyer, J. O., T. Keeler-Wolf and Julie M. Evans 2009 A Manual of California Vegetation Second Edition was used in defining grassland types found on the project. There are scattered individual

patches (clones) of native bunch grasses within the fringing woodlands but they do not constitute a grassland per say. The following grassland alliances within the project footprint (the boundaries and extent of each of these alliances vary depending on, topography, soils, exposure and biological conditions, and are within the understory of the Forest of Woodland Alliance on the property (note that these are all non-native introduced species and denoted as Semi-natural stands).

There is no evidence of sensitive grassland Alliances or communities on the property.

The California Department of Fish and Wildlife Natural Diversity Database five-mile search shows that Northern Vernal Pool and Serpentine Bunchgrass is present near the project site. There are no vernal pools or serpentine soils associated with the project sites.

Wetlands
A wetland is present on the southeast side of the property this area was flagged in the field and avoided on ECP map. The wetland is below a spring or seep. There are no wetlands or wetland features within the THP/TCP sites that fall within the jurisdiction of the U.S.ACOE, RWQCB or CDFW.

Stream Analysis
There are several seasonal drainages that originate on the property and flow to the southwest into Conn Creek which is along the west property boundary. Drainages on the property are ephemeral drainages, they do not contain in-stream riparian vegetation, but have vegetation similar to that found upslope as an overstory which provides shade. None of the ephemeral drainages on the property would support fish.

The southeast ephemeral drainage extends down slope from the wetland described above. This drainage consists of a narrow eroded channel in the landscape which forms several braded channels on the south side of the property. The ephemeral drainage contains a shallow cut channel with rock, mud or gravel bed present. The project has been designed to avoid portions of this drainage which contain a definable bed and bank.

The ephemeral drainage within the middle of the property between the THP/TCP blocks consists of two eroded channel that originates on site. These drainage contain shallow cut channel with rock, mud or gravel bed present.

The vegetation associated with these ephemeral drainages is no different than the upland vegetation (typical riparian trees, shrubs and herbs are not present). The only vegetation within the channel consists of poikliohydric bryophytes on the larger more stable boulders in the streambed. We found no evidence of in-channel aquatic life within the ephemeral drainages.

Conn Creek on the north property line is a blue line perennial creek with permanent flow. It is a deeply incised rock lined creek with overhanging vegetation. The vegetation in the section adjacent to the property is similar to the upland vegetation. This stream has been provided with standard setbacks.

D. POTENTIAL BIOLOGICAL IMPACTS

The project's effect to onsite or regional biological resources is considered to be significant if the project results in:

- Alteration of unique characteristics of the area, such as sensitive plant communities and habitats (i.e. serpentine habitat, wetlands, riparian habitat);
- Adverse impacts to special-status plant and animal species;
- Adverse impacts to important or vulnerable resources as determined by scientific opinion or resource agency concerns (i.e. sensitive biotic communities, special-status habitats; e.g. wetlands);
- Loss of critical breeding, feeding or roosting habitat; or
- Interference with migratory routes or habitat connectivity.

The proposed THP/THC will result in the loss of chaparral and woodland habitat and has the potential to impact biological resources without appropriate avoidance and protection measures.

Biological resources present on the property include seasonal drainages, a wetland, Conn Creek, populations of special-status plants (Napa False Indigo and California Brodiaea), chaparral and conifer/oak woodlands which function as wildlife habitat and watershed.

In the sections below a discussion of potential impacts of the project on biological resources is presented.

D.1 Analysis of Potential Impacts to Special-status Species

A map from the CDFW CNDDB records of special-status species in the vicinity of the project is shown on Plate II. Two special-status species were found on the property: Napa False Indigo (*Amorpha californica* var. *napensis)* and the Narrow-anthered Brodiaea (*Brodiaea leptandra)*. The THP TCP boundaries have been adjusted to avoid populations of these species.

A map from the DFW CNDDB records of special-status species in the vicinity of the project is shown on Plate II. The following species are addressed based on their sensitivity to habitat loss.

California Red-legged Frog (*Rana draytonii*) inhabits permanent or nearly permanent water sources (quiet streams, marshes, and reservoirs). They are highly aquatic and prefer shorelines with extensive vegetation. There is no potential habitat associated with the proposed conversion area. The wetland on the property is inadequate habitat for this species. The shallow ephemeral drainages on the property are also inadequate habitat for this species. No California Red-legged Frogs were observed and it is unlikely that the proposed project would result in take of this species.

Foothill Yellow-legged Frog (*Rana boylii*) is found in or near rocky streams with riffles and sunny banks in a variety of habitats from sea level to approximately 6,300 feet elevation. Yellow-legged frogs require shorelines with dense, overhanging vegetation such as willow trees. There is no habitat associated with the project sites or on the property which would support the Foothill Yellow-legged Frog (Rana boylii). Foothill Yellow-legged Frogs require permanent flowing water. The ephemeral drainages on the property do not provide suitable habitat for this species. There were no pools or flowing water in the drainages on the property during the summer months. Conn Creek on the north property line has potential habitat for this species but there are no records of this species for this creek.

Pallid Bat (*Antrozous pallidus*): The Pallid Bat occupies a wide variety of habitats, such as grasslands, shrublands, and forested areas of oak and pine, but prefer rocky outcrops with desert scrub. The pallid bat roosts in caves, mines, crevices, and occasionally in basal hollows or buildings. They forage over open country and in woodland areas. No roosts or evidence of their presence was observed within the proposed project area.

Townsend's Big-Eared Bat (*Corynorhinus townsendii*): Townsend's big-eared bats are more abundant in mesic habitats such as riparian woodland. They require caves, mines, tunnels, bridges, or other man-made structures for roosting. There is no habitat in the form of cabins, barns, and other structures within the assessment area or on the property. No roosts or evidence of their presence was observed within the proposed project area or within the assessment area during this field survey. The CDFW CNDDB shows that the project site is within a confidence interval for this species. Potential suitable habitat is low for this species on the property.

American Peregrine Falcon (*Falco peregrinus anatum)*: Peregrine falcons require protected cliffs and ledges for cover. Peregrines often breed near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes or mounds however, they will nest on human-made structures and will occasionally use snag cavities or old nests of other raptors. Suitable habitat in the form of cliffs over 70' high do not exist on the property. Peregrine falcons were not observed during this field survey within the project area.

Northern Spotted Owl (*Strix occidentalis caurina*): Northern spotted owls require mature forest patches with permanent water and suitable nesting trees and snags (Zeiner et al. 1990a). Northern spotted owls use dense, old-growth forests, or mid- to late- seral stage forests, with a multi-layered canopy for breeding. Mixed conifer, redwood, and Douglas-fir habitats are required for nesting and roosting. There is a recorded CNDDB location for the Northern spotted owl 1.5 miles to the south and 3.3 miles to the north. The project and property contains potential suitable nesting habitat and potential foraging habitat. Surveys for Northern Spotted Owl have been conducted on the property. No evidence of there presence has been recorded.

Our fieldwork did not find any special-status animal species that are known for the Quadrangle surrounding Quadrangles or for the region that would be impacted by the proposed project. The project site conditions are such that there is little reason to expect the occurrence of any special-status animal species within the footprint of the project.

Habitat impacted by the proposed project is such that it will not substantially reduce or restrict the range of listed animals.

D.2 Analysis of Potential Impacts on Sensitive Habitat

The project proposes a THP/TCP for a vineyard that totals 34.8-gross acres within an 88.34-acre property. The project will retain 62% of the property in its present condition retaining function as open space, wildlife habitat and watershed.

The woodlands on the site and surrounding the project area consist of a mix of conifers and broad leaf trees. The Napa County Baseline Report identifies as sensitive communities the following:

Douglas-fir-ponderosa pine forest (old-growth),
Native *Grasslands* and
Ponderosa pine Alliance.

Douglas fir-ponderosa pine forest (old-growth*)*
The Napa County Baseline Report identifies this forest type as a sensitive woodland community. Historic use and harvest and or fire have eliminated this community on the project site and property.

There is no evidence of an old growth forest of Douglas fir Forest Alliance on the property.

Native Grassland Napa County Data base vegetation mapping shows a small area of California Annual Grasslands Alliance on the property. We did not observe this alliance on the property. The understory Festuca bunch grasses are not considered to be a sensitive community but a common understory element of woodlands. The grasslands within the footprint of the project do not consist of any of the sensitive grassland communities listed by the County Baseline Data Report or CDFW. Native grasses on the project site do not meet the definition of Native Grass Grassland and would not be considered a species with limited distribution or a sensitive natural plant communities for the following reasons: Lack of typical native grassland species and diversity. The grasses present are within an understory and not associated with historic grasslands.

The project will not impact any native grassland.

Ponderosa pine Alliance
Ponderosa pines are present as part of the Douglas fir Alliance within property. There are occasional Ponderosa Pines mixed with this Alliance but their canopy cover does not meet the criteria for considering this as a separate alliance (Sawyer et. al. 2009 membership rules require *Pinus ponderosa* presence as the principal canopy species >10% absolute cover).

The southeast edge of the property supports a relatively small area of this Alliance. In the design of the project this area has been adjusted to avoid the Ponderosa Pine Alliance.

The ponderosa pines within the THP/TCP do not meet the criteria for a Napa County Sensitive Woodland Community.

Seasonal Wetland generally denotes areas where the soil is seasonally saturated and/or inundated by fresh water for a significant portion of the wet season, and then seasonally dries during the dry season. To be classified as "Wetland," the duration of saturation and/or inundation must be long enough to cause the soils and vegetation to become altered and adapted to the wetland conditions. Varying degrees of pooling or ponding, and saturation will produce different edaphic and vegetative responses. These soil and vegetative clues, as well as hydrological features, are used to define the wetland type. Seasonal wetlands typically take the form of shallow depressions and swales that may be intermixed with a variety of upland habitat types. Seasonal wetlands fall under the jurisdiction of the U.S. Army Corps of Engineers. The wetland seep on the south side of the property will be avoided and provided with a setback.

There are no seasonal wetlands or vernal pools associated with the project footprint. The wetland at the southeast corner of the project property is outside of the THP/TCP and will be avoided.

"Waters of the State" include drainages which are characterized by the presence of definable bed and bank that meet ACOE, and RWQCB definitions and or jurisdiction. Drainage from the proposed THP/TCP is by sheet flow into unnamed drainages of Conn Creek, thence the Napa River.

Napa County Definition for a Defined Drainages is a watercourse designated by a solid line or dash and three dots symbol on the largest scale of the United States Geological Survey maps most recently published, or any replacement to that symbol, and or any watercourse which has a well-defined channel with a depth greater that four feet and banks steeper that 3:1 and contains hydrophilic vegetation, riparian vegetation or woody-vegetation including tree species greater that ten feet in height.

Conn Creek along the northwest property line meets the definition on of a Napa County Defined Drainage. There are no other Napa County Defined Drainages associated with the proposed project sites. There is an area between proposed Vineyard Block E that will require agency review to determine if is would be considered "Waters of the State" and potential permits.

Riparian Vegetation is by all standards considered sensitive. Riparian Vegetation functions to control water temperature, regulate nutrient supply (biofilters), bank stabilization, rate of runoff, wildlife habitat (shelter and food), release of allochthonous material, release of woody debris which functions as habitat and slow nutrient release, and protection for aquatic organisms. Riparian vegetation is also a moderator of water temperature has a cascade effect in that it relates to oxygen availability. Conn Creek contains riparian vegetation along its banks.

The project will not impact any riparian vegetation.

Trees The project will remove native Oaks within a Mixed Oak Woodland habitat. The majority of the trees proposed to be removed are of a relative young age class and are 6-20 inches DBH.

The project should comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland communities, and the project should also comply with Napa County General Plan Policy CON-24 Paragraph (c) stated that a project should "provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio.

Oak preservation on site is recommended.

Wildlife Habitat and Wildlife Corridors Natural areas interspersed with developed areas are important for animal movement, increasing genetic variation in plant and animal populations, reduction of population fluctuations, and retention of predators of agricultural pests and for movement of wildlife and plant populations. Wildlife corridors have been demonstrated to not only increase the range of vertebrates including avifauna between patches of habitat but also facilitate two key plant-animal interactions: pollination and seed dispersal. Corridors also provide ecosystem services such as preservation of watershed connectivity. Corridor users can be grouped into two types: passage species and corridor dwellers. The data from various studies indicate that corridors should be at least 100 feet wide to provide adequate movement for passage species and corridor dwellers in the landscape.

Game trails are present but there was no evidence for distinct corridors passing through the property. Riparian zones are functional as corridors in many biomes. The riparian zone along the drainages on the property did not show any evidence of functionality as a wildlife corridor.

Wildlife will continue to move around and though the property. Conn Creek would be considered a wildlife corridor. Properties north and east of the site consists of residences and have formed a barrier for movement across the property. Vineyard blocks will allow wildlife to continue to move within the property.

There are no identifiable significant wildlife corridors associated with the project.

Raptor Nests, Bird Rookeries, Bat Roosts, Wildlife Dens or Burrows Raptors were observed in the area although no raptor nests were identified during our survey. We found no indications of nesting raptors on the property or in the near vicinity of the project sites. We did not observe any nests, whitewash or nest droppings, perching associated with the project site. No bird rookeries were present on the property or within the project footprint.

We did not identify any trees on the project site, which would provide significant suitable bat

roosting habitat. Foliage and bark with small cavities in any tree could provide suitable temporary habitat for solitary tree-roosting bat species. Based on the marginal habitat, i.e. (lack of thick bark, deep fissures and cracks, no large burned out trees, or hollow cavities), trees to be removed would not be considered suitable habitat. It is unlikely that the Townsend's Big-Eared Bat (*Corynorhinus townsendii*) or Pallid Bat (*Antrozous pallidus)* would be present.

Very few gopher or mole burrows were observed, but small mammals and songbirds likely utilize habitats on the project site for foraging and cover. No significant wildlife dens or burrows were observed. Soils are not sandy and are not conducive to burrowing mammals or birds.

The project site does have potential for bird nesting and marginal bat roosting habitat. Pre-construction raptor and bat surveys are recommended.

Unique Species that are Endemic, Rare or Atypical for the Area Unique populations of organisms are associated with microclimates or specific habitats which are part of the diversity of the California landscape. This includes fringing populations of organisms at their limits geographically or associated with particular soils or geologic features.

No unique or unusual populations of animals were present on the property or the project site. Two populations of special-status plants are present on the property. These have been mapped and will be avoided.

Habitat Fragmentation is a local and global concern. Habitat fragmentation can result in a net-loss of habitat and genetic isolation. Small clearings can increase the edge habitat and can be beneficial for wildlife and botanical resources. The project will incrementally reduce a small amount of habitat in the area. The proposed change in land use will result in less than significant changes in avifauna and rodent utilization in the area.

The proposed project will not lead to significant habitat fragmentation in the region, significant species exclusion, or significant change in species composition in the region.

D.3 Potential Off-site Impacts of the Project

A potential impact is the movement of silt, dust and the creation of noise during site construction. Construction and Erosion Control BMP's during development of the site will prevent any significant off-site impacts.

There is nothing to indicate any significant potential impacts to off-site biological resources by the proposed project provided BMPs for the THP/TCP and ECP are implemented.

D.4 Potential Cumulative Impacts

Cumulative biological effects are the result of incremental losses of biological resources within a region. Removal of vegetation can reduce the abundance and diversity of species in an area. Vineyards provide limited foraging, cover, and breeding habitat for native wildlife species. Vineyards can be used by wildlife but the diversity is low within vineyards and foraging may be difficult. Loss of habitat can also be an important factor affecting the long-term survival of rare, threatened and endangered species.

The project is surrounded by extensive open habitat of similar species and vegetation alliances. Vineyards and urban development is sparse surrounding the project site. Removal of vegetation by this project will not significantly reduce the available foraging, nesting and habitat for wildlife in the area. Properties surrounding the proposed project site do not have deer fencing and do not restrict movement of large mammals.

Factors that were considered in the evaluation of cumulative biological impacts include:

1. Any known rare, threatened, or endangered species or sensitive species (as described in the Forest Practice Rules) that may be directly or indirectly affected by project activities or if significant cumulative effects on the habitat of the species may be expected from the results of activities over time.

2. Any significant, known wildlife or fisheries resource concerns within the immediate project area and the biological assessment area (e.g. loss of oaks creating forage problems for a local deer herd, species requiring special elements, sensitive species, and significant natural areas). Significant cumulative effects may be expected where there is a substantial reduction in required habitat or the project will result in substantial interference with the movement of resident or migratory species.

3. The aquatic and near-water habitat conditions on the THP and immediate surrounding area results in cumulative biological impacts. Habitat conditions of major concern are: pools and riffles, large woody material in the stream, near-water vegetation.

<u>There is no indication that there will be any significant cumulative biological impacts.</u>

D.5 State and Federal Permits

Any impact to unnamed seasonal drainages on property will require agency consultation and permits from the California Department of Fish and Wildlife, U.S. Army Corps of Engineers, and Regional Water Quality Control Board for impacts to “Waters of the State”.

A drainage on the southeast side of the property within proposed vineyard Block E (See ECP Map for location of Block E) which contains areas with a definable bed and bank and areas that do not. This portion of this drainage does not transport sediment. This area will require agency review to determine if a 1600 permit is required for installation of rock check dams.

E. RECOMMENDATIONS

E.1 Significance

The significance of potential impacts is a function of the scope and scale of the proposed project within the existing Federal, State and Local regulations and management practices. The project must comply with Napa County requirements to ensure that best management practices are adopted in order to minimize the amount of sediment and other pollutants leaving the site during construction activities. ECP and THP/TCP setbacks or buffer zones are designed to provide protection for the watershed.

E.2 Recommendations

The proposed THP/THC will result in the loss of chaparral and woodland habitat and has the potential to impact biological resources without appropriate avoidance and protection measures.

Biological resources present include Special-status Species, Sensitive Natural Communities, seasonal wetlands, "Waters of the State", Riparian Vegetation, oak trees, wildlife habitat and bird nesting and bat roosting habitat.

The following recommendations are proposed to reduce potential impacts to biological resources on and off-site.

<u>There are two special-status species present on the property Napa False Indigo and California Brodiaea</u>.

Recommendation 1.0 The ECP and THP/TCP have been adjusted to avoid and provide a buffer for populations of these species. All populations identified must be avoided. It is recommended that construction fencing and signage as ESA along the edges of these areas should be implemented.

<u>The project has the potential to impact a Napa County Sensitive Community Ponderosa Pine.</u>

Recommendation 2.0 The ECP and THP/TCP have been adjusted to avoid the Napa County Sensitive Alliance identified on the property.

<u>The project has the potential to impact seasonal wetlands and "Waters of the State"</u>

Recommendation 3.0 The ECP and THP/TCP have been adjusted to avoid the identified seasonal wetland on the property. It is recommended that construction fencing and signage along the edges of this area be installed. Standard THP buffers will protect the creeks and drainages on the property.

The project has the potential to impact Oak Woodlands and potential for damaging oaks along the edge of the project.

Recommendation 4.0 The project should comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland communities, and Napa County General Plan Policy CON-24 Paragraph (c) stated that a project should "provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio. We recommend Oak Woodland preservation on site.

Recommendation 4.1 Native Oak trees within close proximity of the project should be protected from the vineyard construction activities. Heavy equipment intrusion or parking under the drip line must be prevented to protect their roots. Soil compaction or cutting of roots has the potential for damaging the continued existence of the tree. Prior to site preparation the contractor should be informed of the need to protect the root zone of surrounding trees. The drip line of the remaining trees adjacent clearing activities should be labeled on the project maps, and flagged around the drip line to protect their roots from intrusion of equipment.

The project has the potential to impact wildlife movement into and through undeveloped areas of the property.

Recommendation 5.0 Deer fencing should be designed with exit gates and limited to vineyard blocks. It is recommended that only the vineyard blocks be fenced to allow wildlife movement through and around the project. We also recommend any new fencing use a design that has 6-inch square gaps at the base instead of the typical 3" by 6" rectangular openings to allow small mammals to move through the fence.

The project has the potential to impact nesting raptors and migratory birds by direct tree removal.

Recommendation 6.0 If project activities are scheduled between February 15 and September 15, CDFW recommends surveys and avoidance measures for nesting birds. With respect to surveys for nesting bird and raptor species, CDFW recommends that the project specifies: 1) nest surveys shall be conducted no more than 14 days prior to tree removal and/or breaking ground, 2) in the event that nesting birds are found, the project applicant shall consult with CDFW and obtain approval for nest-protection buffers prior to tree removal and/or ground disturbing activities, and 3) nest protection buffers shall remain in effect until the young have fledged. All nest protection measures shall apply to off-site impacts and within 500 feet of project activities. If a lapse in project-related work of 14 days or longer occurs, another focused survey and, if required, consultation with CDFW, shall be required before project work can be reinitiated. If active nests are found during a preconstruction

survey, 300-foot no-disturbance buffer zones shall be created around active raptor and songbird nests and shall be maintained until it is determined by a qualified biologist that all young have fledged or the nest has failed. These buffer zones may be modified in coordination with CDFW based on existing conditions at the project site. Buffer zones shall be fenced with temporary construction fencing and remain in place until the end of the breeding season, until the young have fledged, or the nest has failed. If a 14-day or greater lapse of project-related work occurs during the breeding season, another bird preconstruction survey and consultation with CDFW will be required before project work can be reinitiated.

The project has the potential to impact roosting bats by direct tree removal.

Recommendation 7.0 If initial ground disturbance occurs during the bat maternity roosting season (May 1 through August 31), a qualified biologist will conduct a bat roost assessment of trees on the site searching for suitable entry points, roost cavities or crevices. If the biologist determines there is potential for maternal roosting on the project site then, these trees shall be removed between August 15, and October 15 (or before evening temperatures fall below 45F and/or more than 1" of rainfall within 24 hours occurs), or between February 28, and April 15.

Direct or indirect impacts to seasonal drainages on site has the potential to result in negative impacts to special-status species known or expected to occur downstream in the Napa River and its riparian woodland habitat.

Recommendation 8.0 All drainages which contain a definable bed and bank must be avoided. Any impact to unnamed seasonal drainages will require agency consultation and permits if agency consultation determines that this is jurisdictional from the California Department of Fish and Wildlife, U.S. Army Corps of Engineers, and Regional Water Quality Control Board for impacts to "Waters of the State."

F. SUMMARY

This study is provided as background information necessary for evaluating potential impacts of the project on local biological resources.

We find that the proposed project will not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

We find that the project as proposed will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

We find that the project as proposed will not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. No wetlands or vernal pools are associated with the proposed project.

We find that the proposed project will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

In order for the proposed project to not conflict with any local policies or ordinances protecting biological resources, the project must comply with the Oak Woodlands Preservation Act and Napa County General Plan Policy CON-24 Paragraph (c).

The proposed project will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans.

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G.2 Qualifications of Field Investigators

Chris K. Kjeldsen, Ph.D., Botany, Oregon State University, Corvallis, Oregon. He has over forty years of professional experience in the study of California flora. He was a member of the Sonoma County Planning Commission and Board of Zoning (1972 to 1976). He has over thirty years of experience in managing and conducting environmental projects involving impact assessment and preparation of compliance documents, Biological Assessments, CDFW Habitat Assessments, CDFW Mitigation projects, ACOE Mitigation projects and State Parks and Recreation Biological Resource Studies. Experience includes conducting special-status species surveys, jurisdictional wetland delineations, general biological surveys, 404 and 1600 permitting, and consulting on various projects. He taught Plant Taxonomy at Oregon State University and numerous botanical science and aquatic botany courses at Sonoma State University including sections on wetlands and wetland delineation techniques. He has supervised numerous graduate theses, NSF, DOE and local agency grants and served as a university administrator. He has a valid CDFW collecting permit.

Daniel T. Kjeldsen, B. S., Natural Resource Management, California Polytechnic State University, San Luis Obispo, California. He spent l994 to l996 in the Peace Corps managing natural resources in Honduras, Central America. His work for the Peace Corps in Central America focused on watershed inventory, mapping and the development and implementation of a protection plan. He has over ten years of experience in conducting Biological Assessments, CDFW Habitat Assessments, ACOE wetland delineations, wetland rehabilitation, and development of and implementation of mitigation projects and mitigation monitoring. He has received 3.2 continuing education units MCLE 27 hours in Determining Federal Wetlands Jurisdiction from the University of California Berkeley Extension. Attended Wildlife Society Workshop Falconiformes of Northern California Natural History and Management California Tiger Salamander 2003, Natural History and Management of Bats Symposium 2005, Western Pond Turtle Workshop 2007, and Western Section Bat Workshop 2011. Laguna Foundation & The Wildlife Project Rare Pond Species Survey Techniques 2009. A full resume is available upon request.

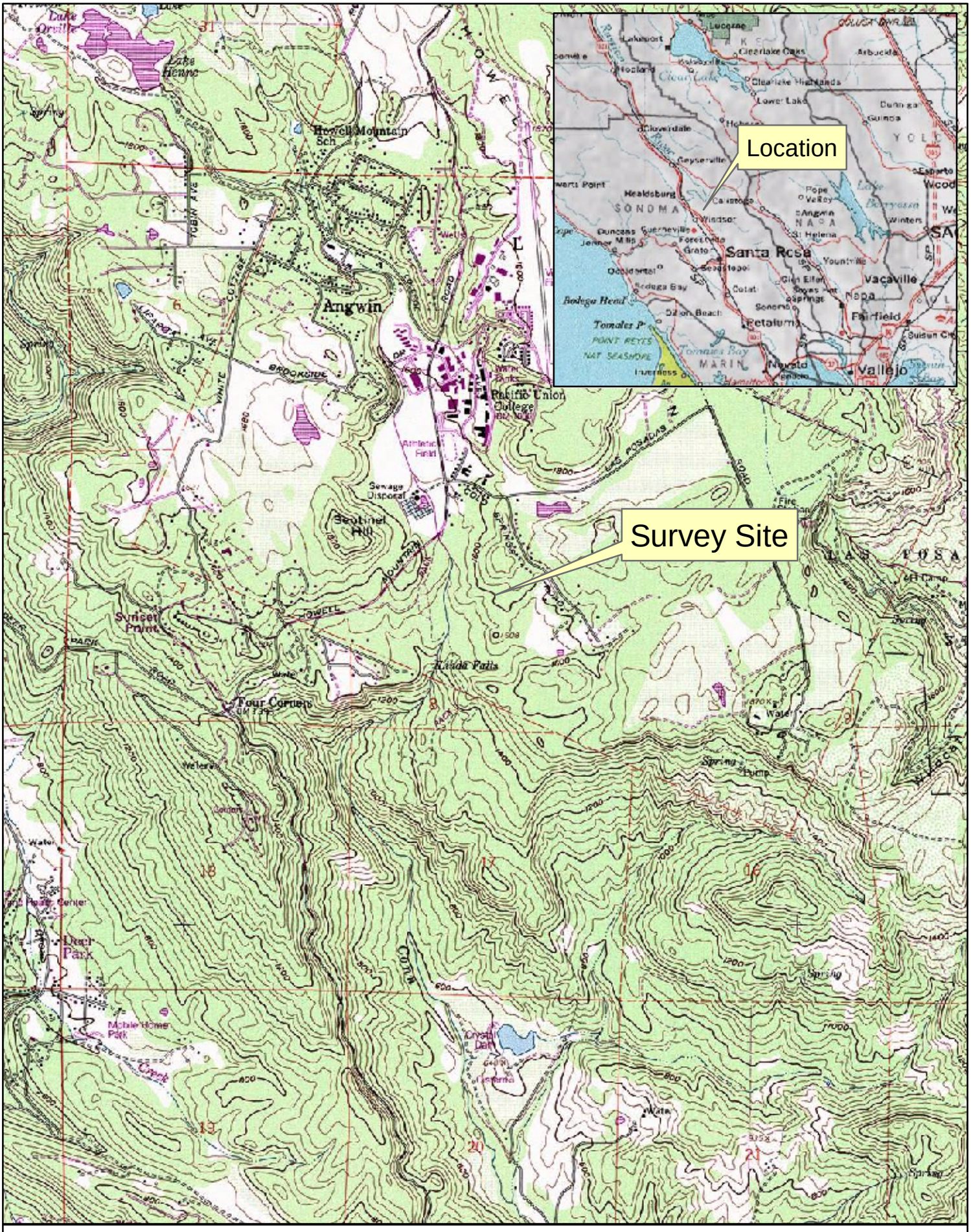

Plate I. Site / Location Map

(St Helena Quadrangle)

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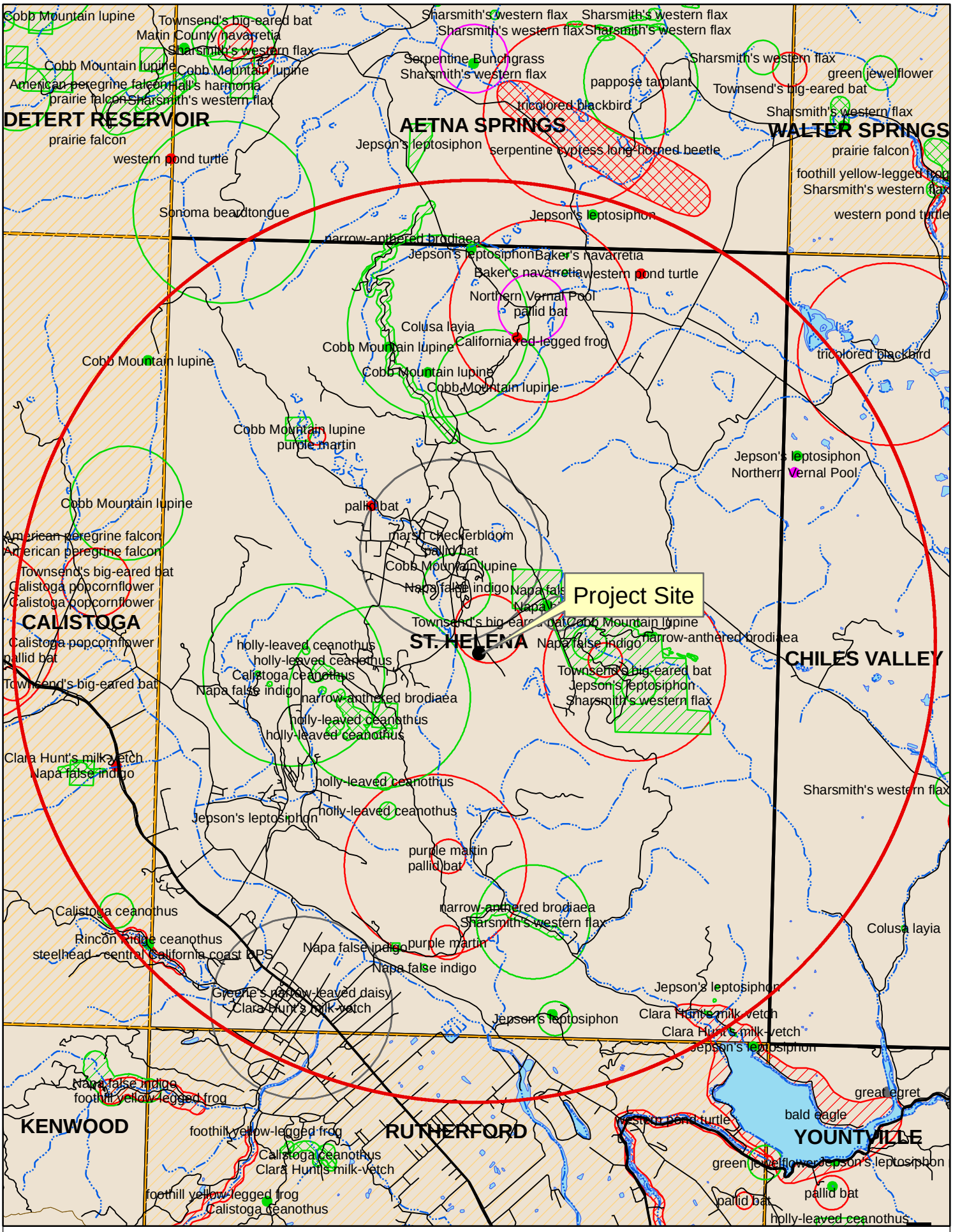


Plate II CDFW CNDDB 5-Mile Search

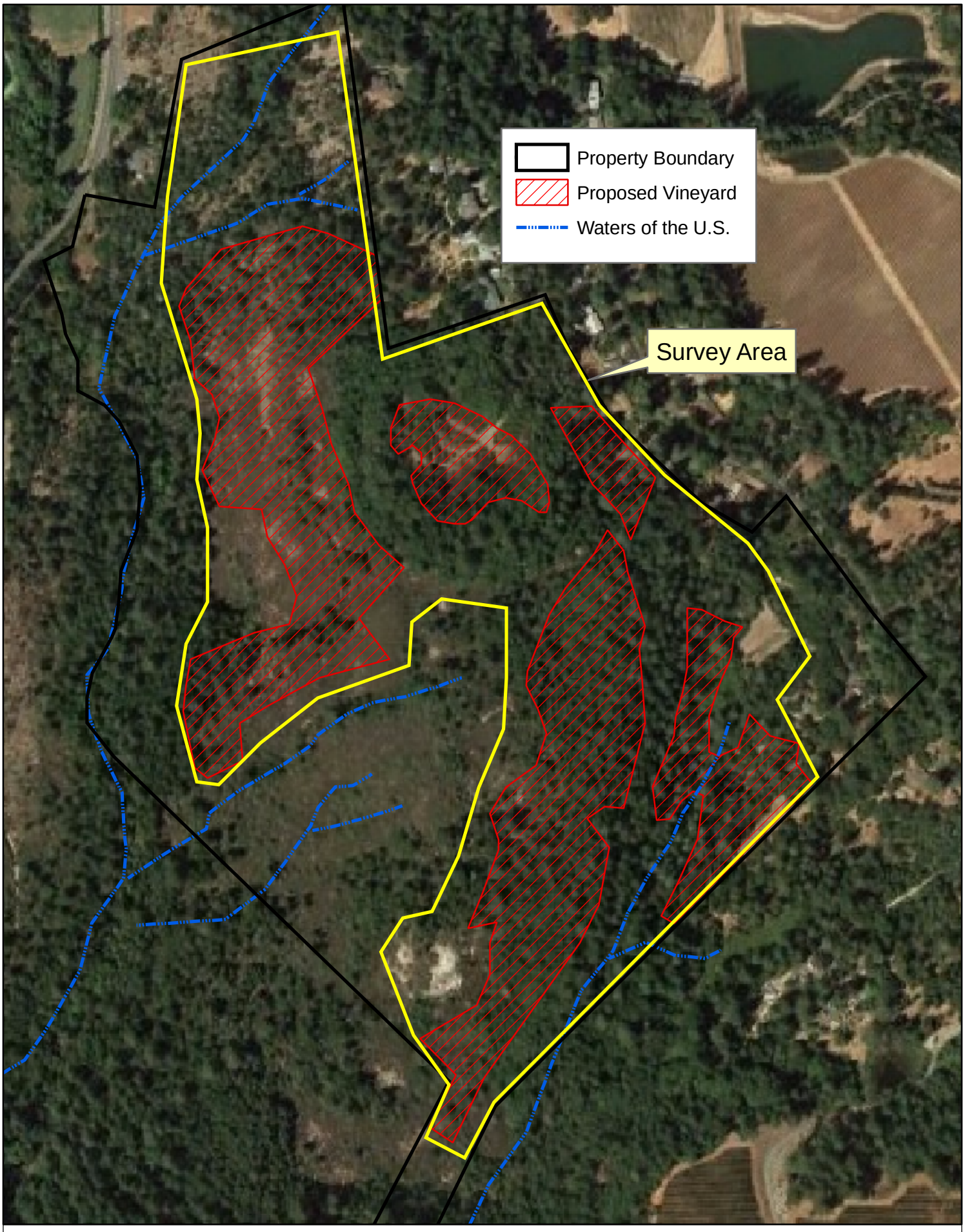


Plate III. Aerial Photo / Survey Area

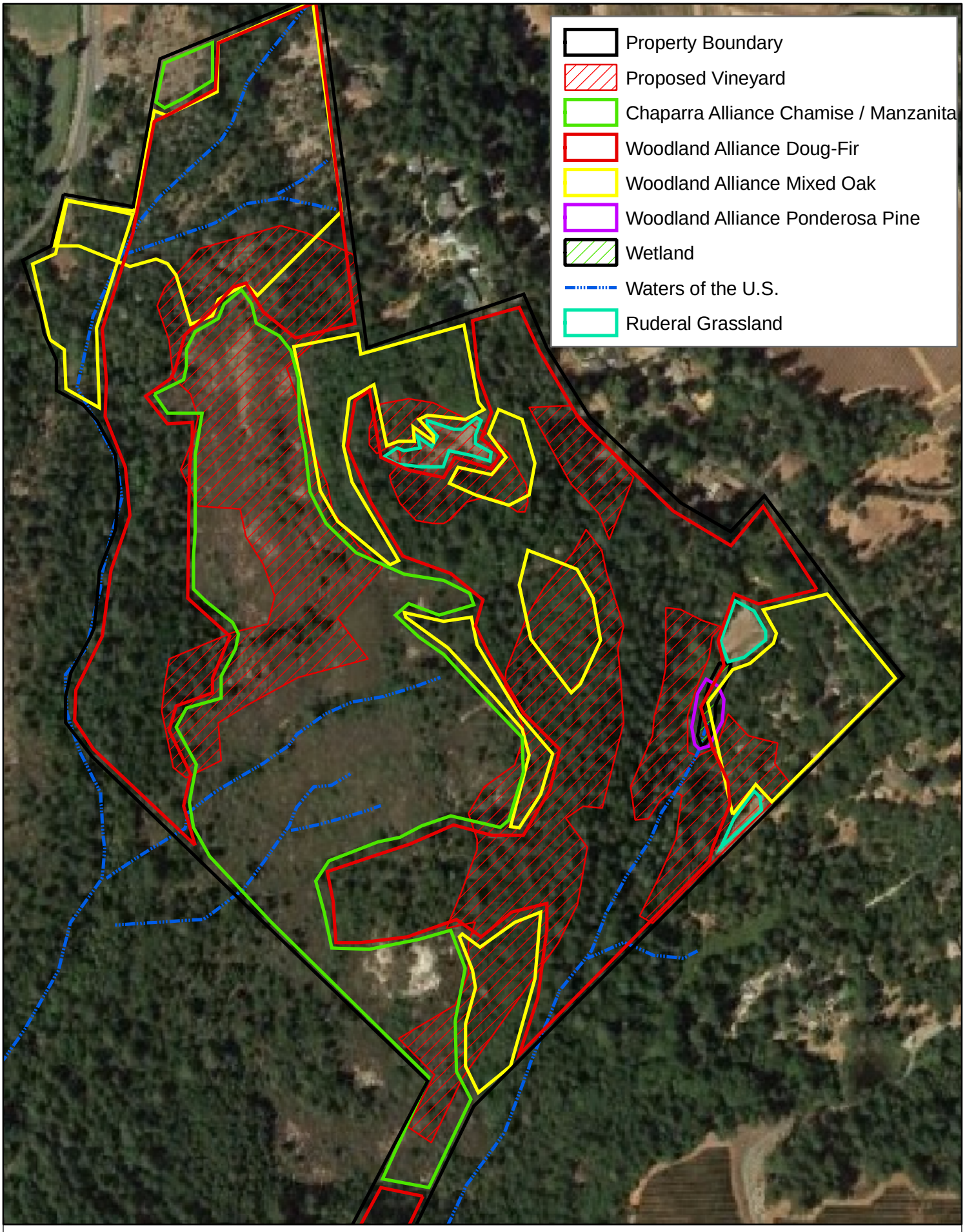


Plate III. Aerial Photo / Survey Area

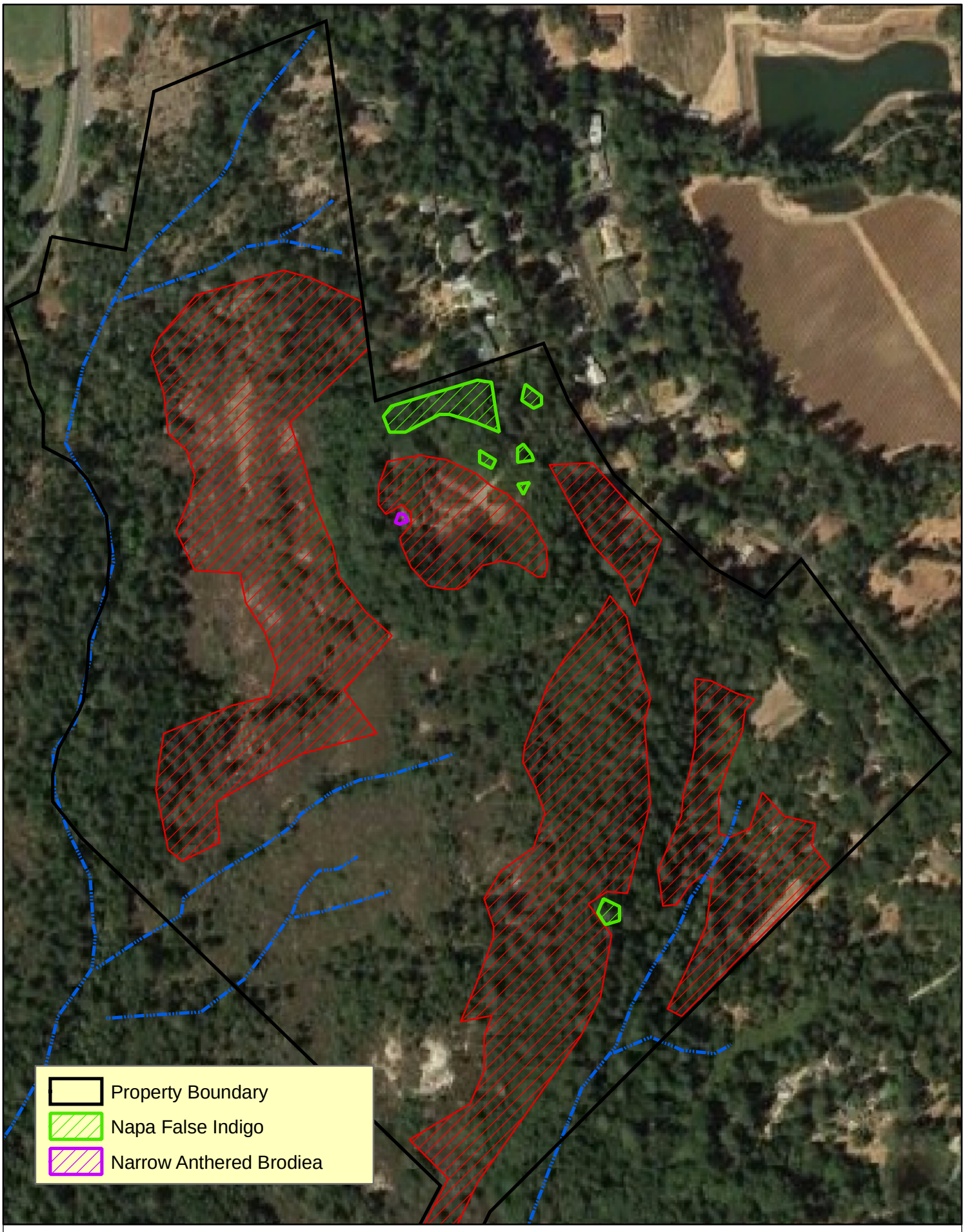
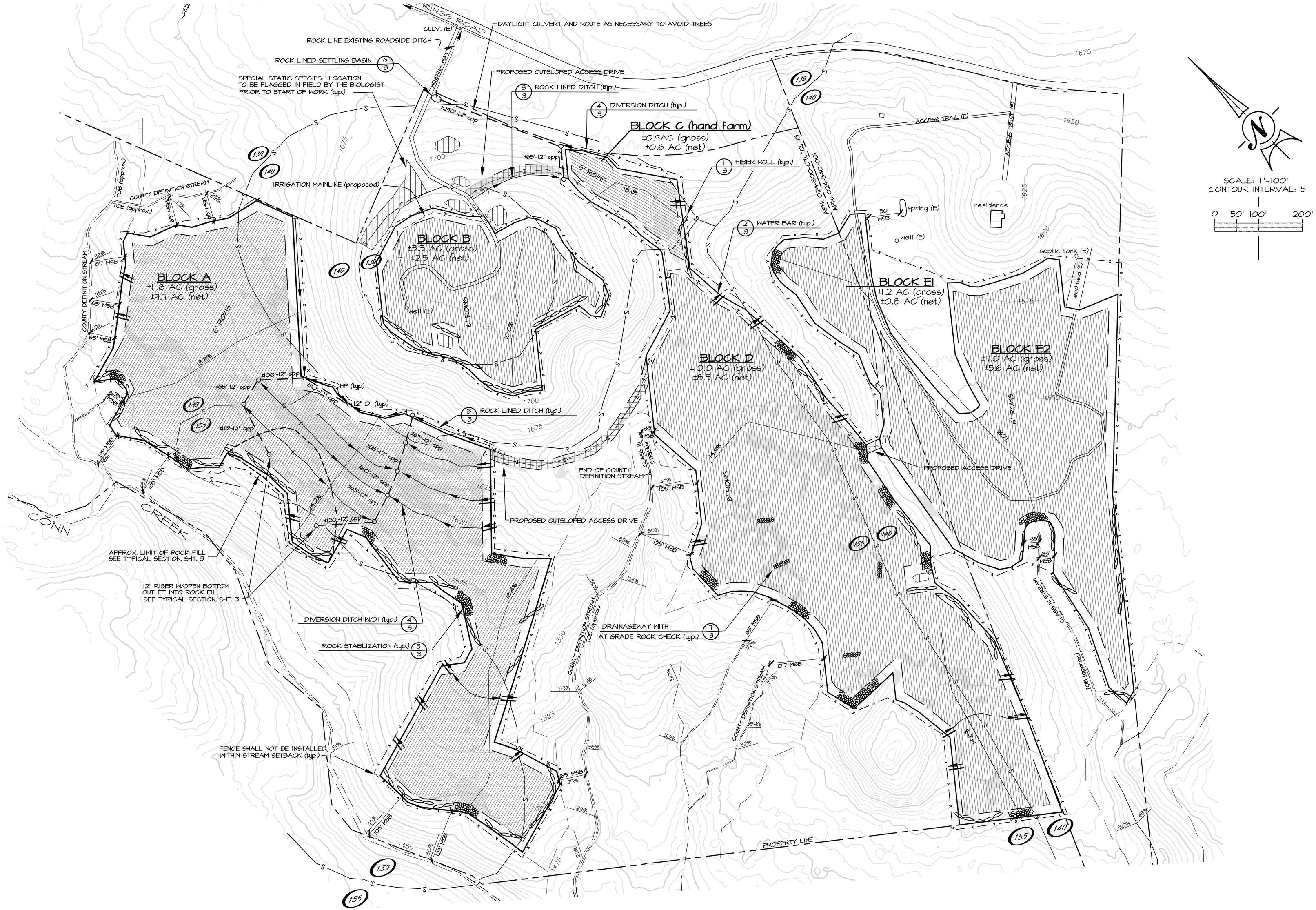


Plate V. Location of Special-status Species



Tetra Tech, using 2003 data by the National Center for Airborne Laser Mapping

LEGEND ON SHT. 1

REV.	DESCRIPTION	BY	DATE
1	Change Block E boundary, realign road Incorporate Napa County comments (1-15-15)	DLW	4-6-15

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574
(707) 963 4927

REGISTERED PROFESSIONAL ENGINEER
DREW L. ASPEGREN
No. 31418
Exp. 12-31-14
CIVIL
STATE OF CALIFORNIA

DATE	12-18-14
SCALE	AS SHOWN
DRAWN	DLW
CHECKED	DLA
I4ECPD\Cesar\sR1.dwg	
APPROVED	
DREW L. ASPEGREN, PE	R.C.E. 31418

Le Colline Vineyard

EROSION CONTROL PLAN FOR NEW VINEYARD DEVELOPMENT

PLAN

SHEET 2 OF 3

APPENDIX A
Plants and Animals Observed Associated With The Project Site

PLANTS

The nomenclature for the list of plants found on the project site and the immediate vicinity follows: Brodo, Irwin M., Sylvia Duran Sharnoff and Stephen Sharnoff, 2001, for the lichens; S Norris and Shevrock - 2004, for the mosses; Doyle and Stotler - 2006 for liverworts and hornworts and Baldwin, B.G., D.H. Goldman, D.J.Keil, R.Patterson, T.J.Rosati, and D.H.Wilkens, editors, 2012 - for the vascular plants.. The plant list is organized by major plant group.

Habitat type indicates the general associated occurrence of the taxon on the project site or in nature.

Abundance refers to the relative number of individuals on the project site or in the region.

MAJOR PLANT GROUP **Family** **Genus** **Common Name**	**Habitat Type**	**Abundance**

NCN = No Common Name, * = Non-native, @= Voucher Specimen

FUNGI		
Basidiomycota- Club Fungi		
CLAVARIACEAE		
Ramariopsis kunzei White Coral Mushroom	Hardwood, Conifer Woodlands	Common
LYCOPERDIALES		
Pisolithus tinctorius Dead Man's Foot	Woodlands, Ruderal	Common
POLYPORACEAE		
Ganoderma applanatum Artist's Conk	On Conifers or Hardwoods	Common
Lenzites betulina Gilled Polypore	Woodlands on Dead Wood	Common
Phaeolus schweinitzii Dyer's Polypore	Woodlands Parasite of D-fir	Common
Trametes versicolor Turkey Tail	Woodlands on Dead Wood	Common
Stereum hirsutum False Turkey Tail	Woodlands on Dead Wood	Common
RUSSULACEAE		
Lactarius scorbiculatus Scorbiculate Milk Cap	Woodlands, Conifer, Oak	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

NCN = No Common Name, * = Non-native, @= Voucher Specimen

Russula brevipes Blackening Russula	Mixed Woodlands	Common
Russula cremoricolor Creamy Russula	Woodlands	Occasional
TREMELLALES		
Exidia glandulosa Black Witch's Butter	Woodland on Dead Wood	Occasional
Tremella aurantia Witch's Butter	Dead Wood Parasitizes *Serium hirsutum*	Occasional

FUNGI

Ascomycota - Sac Fungi

DALDINEACEAE		
Daldinia grandis Carbon Balls	Woodlands on Dead Wood	Common

MOSSES

MINACEAE		
Alsia californica (W.J.Hooker&Arnott) Sullivant NCN	Coastal Forests On Trees	Common
Dendroalsia abietina (Hook.) Brit. NCN	Woodlands	Common
Homalothecium nuttallii (Wilson) Jaeger NCN	Epiphytic on Trees Near Coast-Inland	Common
Kindbergia oregana (Sull) Ochyra NCN	Woodlands	Common
Orthotrichum lyellii Hook & Tayl. NCN	Woodlands, Upper Canopy	Common
Polytrichum juniperinum Hedw. Haircap Moss	Woodlands	Occasional
Pseudobraunia californica (Lesq.) Broth. NCN	Woodlands on Base of Trees Also on rocks or cut banks	Common
Scleropodium touretii (Brid.) L Koch. NCN	Woodlands	Common

MAJOR PLANT GROUP Family Genus	Habitat Type	Abundance
Common Name		

NCN = No Common Name, * = Non-native, @= Voucher Specimen

LICHENS

FOLIOSE

@*Cetraria chlorophylla* (Willd.) Vain NCN	On Wood Conifer Forests	Occasional
@*Cetraria orbata* (Nyl.) Fink NCN (=*Tuckermannopsis orbata)*	On Limbs Usually Conifers	Occasional
Cetraria platyphylla Tuck. NCN	On Tree Limbs Conifer Forests	Occasional
Flavoparmelia caperata (L.) Hale NCN	On Oaks	Common
Flavopunctilia flaventor (Stirt.) Hale NCN	On Oaks	Common
Hypogymina imshaugii Krog NCN	On Conifers, Oaks	Common
Parmelia sulcata Taylor NCN	On Oaks	Common
Pseudocypehallaria anomola Brodo & Ahti NCN	On Oaks	Common
Pseudocyphellaria anthraspis(Ach.) H. Magn. NCN	On Oaks	Common
Teloschistes chrysophthalmus (L.) Th. Fr. NCN	On Oaks	Common
Xanthoparmelia mexicana (Gyeln.) Hale NCN	On Rocks	Common
Xanthoria polycarpa (Hoffm.) Rieber Pin-cushion Sunburst Lichen	On Oaks Young Twigs	Common

FRUTICOSE

Cladonia coniocrea (Flörke) Spreng. Common Powderhorn	On Soil	Common
Cladonia furcata (Huds.) Schrad. NCN	On Soil	Common
Evernia prunastri (L.) Ach. NCN	On Oaks	Common
Ramalina farinacea (L.) Ach. NCN	On Oaks	Common
Usnea intermedia=U. arizonica NCN	On Oaks	Common
Usnea mutabilis NCN	On conifers	Common

MAJOR PLANT GROUP **Family** **Genus**	**Habitat Type**	**Abundance**
Common Name		

NCN = No Common Name, * = Non-native, @= Voucher Specimen

CRUSTOSE		
Leicidia atrobrunnea (Ramond ex Lam. & DC.) Schaer. NCN	On Rocks	Common
Leicidia tessellata Flörke NCN	On Rocks With Rings of Aapothecia	Common
Ochrolechia orgonensis H. Magn. NCN	On Bark	Common
Pertusaria armara (Ach.) Nyl. NCN	On Oaks	Common
UMBILICATE		
*Umbilicaria phaea*Tuck. NCN	On Rocks	Common

VASCULAR PLANTS FERNS

DENNSTAEDTIACEAE		
Pteridium aquilinum (L.) var. *pubescens* Underw. Bracken Fern	Grasslands or Woodlands	Common
DRYOPTERIDACEAE		
Dryotpteris expansa (C. Presl) Fraser-Jenk. Wood Fern	Shaded Creek Banks	Common
Polystichum munitum (Kaulf.) C Presl Sword Fern	Redwood or Riparian	Common
POLYPODIACEAE		
Polypodium californicum Kaulf. Common Polypody	Woodlands or Riparian	Common
PTERIDACEAE		
Pentagramma triangularis (Kaulf.)G.Yatsk. subsp. *triangularis* Goldback Fern	Woodlands	Common

VASCULAR PLANTS DIVISION CONIFEROPHYTA--GYMNOSPERMS

PINACEAE		
Pinus ponderosa Laws. Ponderosa Pine	Woodlands-Planted	Occasional
Pinus sabiniana Douglas Gray or Foothill Pine	Dry Ridges	Occasional
Pseudotsuga menziesii (Vassey) Mayr var. *menziesii* Douglas-fir	Woodlands	Common

MAJOR PLANT GROUP **Family** **Genus**	**Habitat Type**	**Abundance**
Common Name		

NCN = No Common Name, * = Non-native, @= Voucher Specimen

TAXODIACEAE		
Sequoia sempervirens (D.Don) Endl. Redwood	Probably Planted	Common
VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS		
CLASS--DICOTYLEDONAE- TREES		
MAGNOLIIDS		
LAURACEAE		
Umbellularia californica (Hook.&Arn.) Nutt. California Laurel, Sweet Bay, Pepperwood, California Bay	Conifer&Oak Woodlands	Occasional
EUDICOTS		
ERICACEAE Heath Family		
Arbutus menziesii Pursh Madrone	Woodlands	Common
FAGACEAE Oak Family		
Quercus agrifolia Nee Live Oak	Woodlands	Common
Quercus kelloggii Newb. Black Oak	Woodlands	Common
Quercus wislizenii A.D.C. Interior Live Oak	Woodlands	Occasional
JUGLANDACEAE Walnut Family		
**Juglans regia* L. English Walnut	Ruderal	Common
MORACEAE Mulberry Family		
**Ficus carica* L. Fig	Ruderal Escape	Occasional
OLEACEAE Olive Family		
**Olea europaea* L. Olive	Domestic Ruderal	Occasional
ROSACEAE Rose Family		
**Crataegus monogyna* Jacq. Hawthorn (Note Long Thorns)	Naturalized Escape	Occasional
**Malus sylvestris* Mill. Apple	Escape	Occasional
**Prunus cerasifera* Ehrh. Cherry Plum	Escape, Ruderal	Occasional
SALICACEAE Willow Family		
Salix laevigata Bebb. Red Willow	Riparian	Common

MAJOR PLANT GROUP **Family** **Genus** **Common Name**	**Habitat Type**	**Abundance**

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SAPINDACEAE Soapberry Family		
Acer macrophyllum Prush Big-leaf Maple	Riparian, Stream Banks, Canyons	Common
Aesculus californica (Spach) Nutt. California Buckeye	Woodlands, Riparian	Common
SIMAROUBIACEAE Quassia or Simarouba Family		
**Ailanthus altissima* (Mill.) Swingle Tree of Heaven	Ruderal Escape	Common

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--DICOTYLEDONAE-SHRUBS AND WOODY VINES

MAGNOLIIDS		
ARISTOLOCHIACEAE Pipevine Family		
Aristolochia californica Torry Dutchman's Pipe, Pipevine	Woodlands	Occasional
CALYCANTHACEAE Calycanthus Family		
Calycanthus occidentalis Hooker&Arn. Spicebush	Riparian, Woodlands	Occasional
EUDICOTS		
ANACARDIACEAE Sumac Family		
Toxicodendron diversilobum (Torry&Gray) E.Green Poison Oak	Woodlands	Common
APOCYANACEAE Dogbane Family		
Apocyanum cannabinum L. Indian Hemp	Riparian or Ruderal	Occasional
**Vinca major* L. Periwinkle	Woodlands, Riparian, Ruderal	Common
ARALIACEAE Ginsing Family		
**Hedra helix* L. English Ivy	Ruderal	Occasional
ASTERACEAE (Compositae) Sunflower Family		
Baccharis pilularis deCandolle Coyote Brush	Woodlands, Grasslands	Common
BETULACEAE Birch Family		
Corylus cornuta Marshall var. *californica* Hazelnut	Riparian, Woodlands	Occasional
BORAGINACEAE Borage or Waterleaf Family		
Eriodictyon californicum (Hook.&Arn.) Torr. Yerba Santa	Chaparral	Common

MAJOR PLANT GROUP **Family** **Genus**	**Habitat Type**	**Abundance**
Common Name		

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CAPRIFOLIACEAE Honeysuckle Family		
Lonicera hispidula Douglas var. *vacillans* Honeysuckle	Woodlands	Occasional
Symphoricarpos mollis Nuttall Creeping Snowberry, Trip Vine	Woodlands	Common
ERICACEAE Heath Family		
Arctostaphylos glandulosa Eastwood ssp. *cushingiana* Cushing Manzanita-Scabrous Leaf	Woodlands, Chaparral	Common
Arctostaphylos manzanita Parry ssp. *glaucesens* Common Manzanita	Woodlands	Common
Arctostaphylos manzanita Parry ssp. *manzanita* Common Manzanita	Woodlands	Common
Arctostapylos stanfordiana C. Parry ssp. *stanfordiana* Stanford Manzanita	Chaparral	Common
Rhododendron occidentale(Torry&Grey)A.Grey Western Azalea	Riparian	Occasional
FABACEAE (Leguminosae) Legume Family		
Amorpha californica Nuttall var. *napensis* Napa False Indigo	Chaparral, Woodlands	Rare
**Genista monspessulana* (L.) Johnson Broom, French Broom	Woodlands	Common
OLEACEAE Olive Family		
**Ligustrum* ssp. Privet	Domestic Escape	Occasional
PHRYMACEAE Lopseed Family		
Mimulus aurantiacus Curtis Bush Monkey Flower	Woodlands	Occasional
RHAMNACEAE Buckthorn Family		
Ceanothus cuneatus Nutt.var. *cuneatus* Buckbrush	Chaparral	Common
Ceanothus foliosus Parry var. *foliosus* Wavyleaf Ceanothus	Chaparral	Common
Frangula californica (Eschsch.) A.Gray ssp. *californica* California Coffee Berry (=*Rhamnus californica)*	Shrub/Scrub	Common
ROSACEAE Rose Family		
Adenostoma fasciculatum Hooker&Arn. Chamise	Shrub/Scrub	Common
Heteromeles arbutifolia (Lind.) M. Rome. Christmas Berry, Toyon	Shrub/Scrub	Common

MAJOR PLANT GROUP **Family** **Genus** **Common Name**	**Habitat Type**	**Abundance**

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Rosa californica Cham.& Schlidl. Rose	Grasslands, Edge of Woodlands	Common
**Rosa rubiginosa* L. Sweet-brier (=*Rosa eglanteria*)	Ruderal	Common
**Rubus armeniacus* Focke Himalayan Blackberry	Ruderal	Common
Rubus leucodermis Torr.&A. Gray Western Raspberry	Woodlands	Common
VITACEAE Grape Family		
Vitis californica Benth California Wild Grape	Riparian Woodlands	Occasional

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--DICOTYLEDONAE-HERBS

EUDICOTS

APIACEAE (Umbelliferae) Carrot Family		
**Dacus carota*L. Wild Carrot, Queen Anne's Lace	Ruderal Grasslands	Common
Osmorhiza bertoli DC. Sweet Cicely (=*Osmorhiza chilense)*	Woodlands, Ruderal	Common
Sanicula crassicaulis DC. Pacific Sanicle	Woodlands	Common
**Torilis arvensis* (Huds.) Link Hedge-parsley	Grasslands Woodlands	Common
ASTERACEAE (Compositae) Sunflower Family		
Arnica discoidea Benth. Rayless Arnica	Chaparral, Foothill Woodland	Occasional
Artemesia douglasiana Besser Mugwort	Riparian	Common
**Carduus pycnocephalus* L.subsp.*pycnocephalus* Italian Thistle	Woodlands	Common
**Centaurea solstitalis* L. Yellow Star Thistle	Grasslands, Ruderal	Common
**Cichorium intybus* L. Chicory	Ruderal	Occasional
**Circium vulgare* (Savi) Ten. Bull Thistle	Grasslands, Ruderal	Common
**Helminthotheca echioides* (L.) Holub Ox-tongue (=*Picris echioides)*	Ruderal	Common

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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Hieracium albiflorum Hook. White-flowered Hawkweed	Woodlands, Grasslands	Occasional
**Hypochaeris glabra* L. Cat's Ear	Ruderal	Common
**Hypochaeris radicata* L. Harry Cat's Ear	Ruderal	Common
**Lactuca serriola* L. Prickly Lettuce	Ruderal	Occasional
**Logifa gallica* (L.) Cros&Germ Herba Impa, Daggerleaf Cottonrose (=*Filago gallica)*	Ruderal Grasslands	Common
Madia elegans D.Don Common Madia	Ruderal, Grasslands	Common
**Pseudognaphalium luteoalbum* (L.) Hill.&Burtt White Cudweed (=*Gnaphalium luteo-album)*	Ruderal	Common
**Senecio vulgaris* L. NCN	Ruderal	Occasional
**Sonchus asper* (L.) Hill var. *asper* Prickly Sow Thistle	Ruderal	Common
**Sonchus oleraceus* L. Common Sow Thistle	Ruderal	Common
**Taraxacum officinale* F.H.Wigg Dandelion	Ruderal	Common
**Tragopogon porrifolius* L. Salsify	Grasslands	Occasional
Wyethia angustifolia (DC.) Nutt. Narrow Leafed Mules Ears	Grasslands	Occasional
BORAGINACEAE Borage or Waterleaf Family		
Amsinckia menziesii (Lehm) Nelson&Macbr. Rancher's Fireweed	Grasslands	Occasional
Cyanoglossum grande Lehm. Hound's Tongue	Woodlands	Common
**Myosotis discolor* Pers. Forget-me-not, Blue Scorpion Grass	Woodands, Grasslands	Common
BRASSICACEAE Mustard Family		
Cardamine oligosperma Nutt. Bitter-cress	Ruderal	Common
**Hirschfeldia incana* (L.) Lagr.-Fossat Summer Mustard	Ruderal	Common
Nasturtium officinale W.T. Aiton Water Cress (=*Rorippa nasturtium-aquaticum*)	Palustrine	Occasional

MAJOR PLANT GROUP **Family** **Genus** **Common Name**	**Habitat Type**	**Abundance**

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**Sisymbrium officinalis* L. Hedge Mustard	Ruderal, Grasslands	Common
CARYOPHYLLACEAE Pink Family		
**Stellaria media* (L.) Vill. Chickweed	Ruderal	Common
CONVOLVULACEAE Morning-glory Family		
Convolvulus arvensis L. Morning-glory, Bindweed	Grasslands	Common
FABACEAE (Leguminosae) Legum Family		
Hosackia crassifolia Benth var. *crassifolia* NCN (=*Lotus crassifolia)*	Along Roads Chaparral	Occasional
Acmispon micranthus (Torr.&A. Gray) Small Flowered Lotus (= *Lotus micranthus)*	Grasslands, Ruderal	Common
Hoita orbicularis (Lindl.) Rydb. Psoralea	Meadows, Riparian	Occasional
**Lathyrus sphaericus* Retz. Grass Pea	Ruderal	Occasional
Lathyrus vestitus Nutt. var. *vestitus* Hillside Pea	Woodlands	Occasional
**Lotus corniculatus* L. Birdfoot Trefoil	Grasslands, Ruderal	Common
**Medicago arabica* (L.) Huds Spotted Bur Clover	Ruderal	Common
**Medicago polymorpha* L. California Bur Clover	Ruderal, Grasslands	Common
Rupertia physodes (Douglas) Grimes California-Tea	Woodlands	Common
**Trifolium hirtum* All. Rose Clover	Ruderal	Common
Vicia americana Wild. subsp. *americana* American Vetch	Woodlands	Common
**Vicia sativa* L. subsp. *nigra* Narrow Leaved-vetch	Grasslands, Ruderal	Common
GERANIACEAE Geranium Family		
**Erodium botrys* (Cav.) Bertol. Broadleaf Filaree, Long-beaked Filaree	Grasslands	Common
**Geranium dissectum* L. Common Geranium	Grasslands	Common

MAJOR PLANT GROUP **Family** **Genus** **Common Name**	**Habitat Type**	**Abundance**

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EUPHORBIACEAE Spurge Family		
Croton setigerus Hook. Turkey Mullein, Dove Weed (=*Eremocarpus setigerus)*	Ruderal	Common
HYPERICACEAE St John's Wort Family		
**Hypericum perforatum* L. subsp. *perforatum* Klamath Weed	Ruderal/Grasslands	Occasional
LAMIACEAE (Labiatae) Mint Family		
Stachys ajugoides Benth. Hedge-nettle	Moist Open Places	Occasional
MONTIACEAE Miner's lettuce Family		
*Claytonia perfoliata*Willd. ssp. *perfoliata* Miners Lettuce	Woodlands, Riparian	Common
OROBANCHACEAE Broomrape Family		
Pedicularis densiflora Hook. Indian Warrior	Woodlands, Chaparral	Common
PLANTAGINACEAE Plantain Family		
Plantago erecta E.Morris California Plantain	Grassland, Open Woodland	Common
**Plantago lanceolata* L. English Plantain	Ruderal	Common
POLEMONIACEAE Phlox Family		
Leptosiphon bicolor Nutt. NCN (= *Linanthus)*	Grassland, Chaparral- Open Areas	Occasional
@*Leptosiphon parviflorus* Benth. Common Baby Stars (= *Linanthus)*	Grassland, Woodlands	Occasional
Navarretia squarrosa (Eschsch.) Hook.&Arn. Skunkweed	Ruderal, Grasslands	Common
POLYGALACEAE Milkwort Family		
Polygala californica Nutt. Milkwort	Woodlands, Shrub/Scrub	Occasional
POLYGONACEAE Buckwheat Family		
**Polygonum agyrocoleon* Kunze Persian Wireweed	Ruderal Wet Ground	Occasional
**Rumex acetosella* L. Sheep Sorrel	Ruderal	Common
RANUNCULACEAE Buttercup Family		
**Rumex crispus* L. Curly Dock	Ruderal	Common
Ranunculus californicus Benth. Buttercup	Grasslands, Woodlands	Common

MAJOR PLANT GROUP		
Family		
Genus	**Habitat Type**	**Abundance**
Common Name		

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ROSACEAE Rose Family		
Fragaria vesca L.	Woodlands/Grasslands	Common
Wood Strawberry		
Horkelia californica Cham.&Schltdl var. *californica*	Open Areas Woodlands	Common
NCN		
RUBIACEAE Madder Family		
Galium aparine L.	Woodlands, Riparian, Ruderal	Common
Goose Grass		
**Galium parisiense*	Grasslands, Woodlands	Common
Wall Bedstraw		
SCROPHULARIACEAE Figwort Family		
**Verbascum thapsus* L.	Ruderal	Occasional
Wooley Mullein		

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--MONOCOTYLEDONAE-GRASSES

POACEAE Grass Family		
**Aira caryophyllea* L.	Grassland	Common
Silver European Hairgrass		
**Avena barbata* Link.	Grasslands	Common
Slender Wild Oat		
**Bromus diandrus* Roth	Ruderal, Grasslands	Common
Ripgut Grass		
**Briza maxima* L.	Grasslands, Ruderal	Common
Large Quaking Grass, Rattlesnake Grass		
**Briza minor* L.	Grasslands, Ruderal	Common
Small Quaking Grass		
**Cynosurus echinatus* L.	Ruderal	Common
Hedgehog, Dogtail		
Elymus glaucus Buckley ssp. *glaucus*	Woodlands	Common
Blue Wildrye		
Festuca californica Vassey	Grasslands, Woodlands	Common
California Fescue		
**Festuca myuros* L.	Grasslands	Common
Rattail Fescue,Zorro Annual Fescue (=*Vulpia myuros)*		
**Holcus lanatus* L.	Grasslands, Ruderal	Common
Velvet Grass		
**Hordeum murinum* Huds. subsp. *leporinum*	Grasslands	Common
Farmers Foxtail		

MAJOR PLANT GROUP Family Genus Common Name	Habitat Type	Abundance

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Melica torreyana Schribn. Torrey's Melic	Chaparral, Woodlands	Common

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--MONOCOTYLEDONAE-SEDGES AND RUSHES

CYPERACEAE Sedge Family

Cyperus eragrostis Lam. Nut-grass	Ruderal Moist Areas	Common

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS
CLASS--MONOCOTYLEDONAE-HERBS

Chlorogalum *pomeridianum* (DC.) Kunth var. *pomeridianum* Soap Plant	Woodlands, Grasslands	Common

IRIDACEAE Iris Family

Iris macrosiphon Torr. Long-tubed Iris	Sunny Woody or Grassy Hillsides	Occasional
Sisyrinchium bellum Watson Blue-eyed Grass	Grasslands	Common

MELANTHIACEAE False-hellebore Family

Toxicoscordion fremontii (Torr) Rydb. Star Lily (= *Zigadenus)*	Grassy or Wooded Slopes Outcrops	Common

THEMIDACEAE Brodiaea Family

Dichelostemma capitatum (Benth.) Wood Blue Dicks	Grasslands, Open Woodlands	Occasional
Brodiaea leptandra Greene) Baker Narrow-flowered California Brodiaea	Mixed Evergreen Woodland, Chaparral	Rare

Fauna Species Observed in the Vicinity of the Project Site

The nomenclature for the animals found on the project site and in the immediate vicinity follows: Mc Ginnis –1984, for the fresh water fishes; Stebbins -l985, for the reptiles and amphibians; and Udvardy and Farrand – 1998, for the birds; and Jameson and Peeters -l988 for the mammals.

OSTEICHTHYES		
ORDER		
Common Name	**Genus**	**Observed**

SQUAMATA		
Western Fence Lizard	*Sceloporus occidentalis*	X

AVES		
ORDER		
Common Name	**Genus**	**Observed**
AVES		
Acorn Woodpecker	*Melanerpes fomicivorus*	X
Black Phoebe	*Sayornis nigricans*	X
Mockingbird	*Mimus polyglottos*	X
Mourning Dove	*Zenaida macroura*	X
Oregon Junco	*Junco oreganus*	X
Spotted Towhee	*Pipilo erythrophthalmus*	X
Scrub Jay	*Aphelocoma coerulescens*	X
Steller's Jay	*Cyanocitta stelleri*	X
Turkey Vulture	*Cathartes aura*	X
Violet-green Swallow	*Tachycineta thalassina*	*X*

MAMMALS		
ORDER		
Common Name	**Genus**	**Observed**
CERVIDAE		
Black-tailed Deer	*Odocoileus hemionus*	Sight
MARSUPIALIA		
Virginia Opossom	*Didelphis virginiana*	Scat
RODENTIA		
Dusky-footed Wood Rat	*Neotoma fuscipes*	Den
Pocket Gopher	*Thomomys bottae*	Sight

APPENDIX B

CNPS Special Status-species Listed for the Project Quadrangle and Surrounding Quadrangles

U.S. Fish and Wildlife Service Trust Resources List Listed Species for the Quadrangle

California Wildlife Habitat Relationship System Species Summary Report by Habitat Present

California Department of Fish and Wildlife Rare Find 5 Species list for the Quadrangle and Surrounding Quadrangles for Habitat found on the project site

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE **RareFind**

Query Summary:
Quad IS (Detert Reservoir (3812265) OR Aetna Springs (3812264) OR Walter Springs (3812263) OR Calistoga (3812255) OR St. Helena (3812254) OR Chiles Valley (3812253) OR Kenwood (3812245) OR Rutherford (3812244) OR Yountville (3812243))
AND Habitat IS (Chaparral OR Wetland OR Cismontane woodland OR Riparian woodland)

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Accipiter striatus	sharp-shinned hawk	Birds	ABNKC12020	21	1	None	None	G5	S4	null	CDFW_WL-Watch List	Cismontane woodland | Lower montane coniferous forest | Riparian forest | Riparian woodland
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	431	3	None	Endangered	G2G3	S1S2	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_EN-Endangered | NABCI_RWL-Red Watch List | USFWS_BCC-Birds of Conservation Concern	Freshwater marsh | Marsh & swamp | Swamp | Wetland
Allium peninsulare var. franciscanum	Franciscan onion	Monocots	PMLIL021R1	21	1	None	None	G5T1	S1	1B.2	null	Cismontane woodland | Ultramafic | Valley & foothill grassland
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Monocots	PMPOA07012	21	1	Endangered	None	G5T1Q	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Freshwater marsh | Marsh & swamp | Riparian scrub | Wetland
Amorpha californica var. napensis	Napa false indigo	Dicots	PDFAB08012	45	23	None	None	G4T2	S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Broadleaved upland forest | Chaparral | Cismontane woodland
Amsinckia lunaris	bent-flowered fiddleneck	Dicots	PDBOR01070	64	1	None	None	G2?	S2?	1B.2	BLM_S-Sensitive	Cismontane woodland | Valley & foothill grassland
Antrozous pallidus	pallid bat	Mammals	AMACC10010	402	11	None	None	G5	S3	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper montane coniferous forest | Valley & foothill grassland
											BLM_S-	Broadleaved

Aquila chrysaetos	golden eagle	Birds	ABNKC22010	309	1	None	None	G5	S3	null	Sensitive | CDF_S-Sensitive | CDFW_FP-Fully Protected | CDFW_WL-Watch List | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	upland forest | Cismontane woodland | Coastal prairie | Great Basin grassland | Great Basin scrub | Lower montane coniferous forest | Pinon & juniper woodlands | Upper montane coniferous forest | Valley & foothill grassland
Arctostaphylos canescens ssp. sonomensis	Sonoma canescent manzanita	Dicots	PDERI04066	25	1	None	None	G3G4T2	S2	1B.2	BLM_S-Sensitive	Chaparral | Lower montane coniferous forest | Ultramafic
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	Dicots	PDERI04271	34	5	None	None	G5T3	S3	1B.3	null	Chaparral | Cismontane woodland | Lower montane coniferous forest
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	Dicots	PDERI041G4	12	3	None	None	G3T1	S1	1B.1	null	Chaparral
Ardea alba	great egret	Birds	ABNGA04040	35	1	None	None	G5	S4	null	CDF_S-Sensitive | IUCN_LC-Least Concern	Brackish marsh | Estuary | Freshwater marsh | Marsh & swamp | Riparian forest | Wetland
Ardea herodias	great blue heron	Birds	ABNGA04010	133	1	None	None	G5	S4	null	CDF_S-Sensitive | IUCN_LC-Least Concern	Brackish marsh | Estuary | Freshwater marsh | Marsh & swamp | Riparian forest | Wetland
Astragalus claranus	Clara Hunt's milk-vetch	Dicots	PDFAB0F240	6	5	Endangered	Threatened	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Cismontane woodland | Valley & foothill grassland
Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	Dicots	PDFAB0F7E1	51	3	None	None	G4T3	S3	1B.2	BLM_S-Sensitive	Cismontane woodland | Ultramafic | Valley & foothill grassland
Brodiaea leptandra	narrow-anthered brodiaea	Monocots	PMLIL0C022	29	16	None	None	G3?	S3?	1B.2	null	Broadleaved upland forest | Chaparral | Cismontane woodland | Lower montane coniferous forest | Valley & foothill grassland
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2394	1	None	Threatened	G5	S3	null	BLM_S-Sensitive | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Great Basin grassland | Riparian forest | Riparian woodland | Valley & foothill grassland
Calycadenia micrantha	small-flowered calycadenia	Dicots	PDAST1P0C0	16	1	None	None	G2	S2	1B.2	BLM_S-Sensitive | USFS_S-Sensitive	Chaparral | Meadow & seep | Ultramafic | Valley & foothill

												grassland
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	Dicots	PDCON04032	9	7	None	None	G4T3	S3	4.2	null	Chaparral | Lower montane coniferous forest | Ultramafic | Valley & foothill grassland
Castilleja ambigua var. meadii	Mead's owls-clover	Dicots	PDSCR0D404	3	2	None	None	G4T1	S1	1B.1	null	Meadow & seep | Vernal pool | Wetland
Ceanothus confusus	Rincon Ridge ceanothus	Dicots	PDRHA04220	34	17	None	None	G1	S1	1B.1	BLM_S-Sensitive	Chaparral | Cismontane woodland | Closed-cone coniferous forest | Ultramafic
Ceanothus divergens	Calistoga ceanothus	Dicots	PDRHA04240	23	19	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland | Ultramafic
Ceanothus purpureus	holly-leaved ceanothus	Dicots	PDRHA04160	40	16	None	None	G2	S2	1B.2	null	Chaparral
Ceanothus sonomensis	Sonoma ceanothus	Dicots	PDRHA04420	22	19	None	None	G2	S2	1B.2	null	Chaparral | Ultramafic
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Marsh	CTT52410CA	60	1	None	None	G3	S2.1	null	null	Marsh & swamp | Wetland
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	619	13	None	Candidate Threatened	G3G4	S2	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | USFS_S-Sensitive | WBWG_H-High Priority	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree woodland | Lower montane coniferous forest | Meadow & seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub | Sonoran thorn woodland | Upper montane coniferous forest | Valley & foothill grassland
Cryptantha dissita	serpentine cryptantha	Dicots	PDBOR0A0H2	10	1	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral | Ultramafic
Downingia pusilla	dwarf downingia	Dicots	PDCAM060C0	127	2	None	None	GU	S2	2B.2	null	Valley & foothill grassland | Vernal pool | Wetland
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	158	2	None	None	G5	S3S4	null	BLM_S-Sensitive | CDFW_FP-Fully Protected | IUCN_LC-Least Concern	Cismontane woodland | Marsh & swamp | Riparian woodland | Valley & foothill grassland | Wetland
											BLM_S-Sensitive |	Aquatic | Artificial flowing waters | Klamath/North coast flowing waters | Klamath/North coast standing

Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1138	14	None	None	G3G4	S3	null	CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable | USFS_S-Sensitive	waters | Marsh & swamp | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland
Erigeron greenei	Greene's narrow-leaved daisy	Dicots	PDAST3M5G0	12	7	None	None	G2	S2	1B.2	null	Chaparral | Ultramafic
Eryngium constancei	Loch Lomond button-celery	Dicots	PDAPI0Z0W0	3	1	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Vernal pool | Wetland
Fritillaria pluriflora	adobe-lily	Monocots	PMLIL0V0F0	107	2	None	None	G3	S3	1B.2	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Cismontane woodland | Ultramafic | Valley & foothill grassland
Harmonia hallii	Hall's harmonia	Dicots	PDAST650A0	19	2	None	None	G2	S2?	1B.2	BLM_S-Sensitive | SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral | Ultramafic
Hesperolinon bicarpellatum	two-carpellate western flax	Dicots	PDLIN01020	22	7	None	None	G3	S3	1B.2	null	Chaparral | Ultramafic
Hesperolinon sharsmithiae	Sharsmith's western flax	Dicots	PDLIN010E0	32	26	None	None	G2Q	S2	1B.2	BLM_S-Sensitive	Chaparral | Ultramafic
Juncus luciensis	Santa Lucia dwarf rush	Monocots	PMJUN013J0	26	1	None	None	G2G3	S2S3	1B.2	USFS_S-Sensitive	Chaparral | Great Basin scrub | Lower montane coniferous forest | Meadow & seep | Vernal pool | Wetland
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	235	1	None	None	G5	S4	null	IUCN_LC-Least Concern | WBWG_M-Medium Priority	Broadleaved upland forest | Cismontane woodland | Lower montane coniferous forest | North coast coniferous forest
Lasthenia burkei	Burke's goldfields	Dicots	PDAST5L010	34	1	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Meadow & seep | Vernal pool | Wetland
Layia septentrionalis	Colusa layia	Dicots	PDAST5N0F0	46	14	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral | Cismontane woodland | Ultramafic | Valley & foothill grassland
Leptosiphon jepsonii	Jepson's leptosiphon	Dicots	PDPLM09140	39	23	None	None	G2	S2	1B.2	null	Chaparral | Cismontane woodland | Ultramafic
Limnanthes floccosa ssp. floccosa	woolly meadowfoam	Dicots	PDLIM02043	54	1	None	None	G4T4	S3	4.2	null	Chaparral | Cismontane woodland | Valley & foothill grassland | Vernal pool | Wetland

Limnanthes vinculans	Sebastopol meadowfoam	Dicots	PDLIM02090	45	2	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Meadow & seep | Valley & foothill grassland | Vernal pool | Wetland
Lupinus sericatus	Cobb Mountain lupine	Dicots	PDFAB2B3J0	45	32	None	None	G2	S2	1B.2	BLM_S-Sensitive	Broadleaved upland forest | Chaparral | Cismontane woodland | Lower montane coniferous forest | Ultramafic
Myotis yumanensis	Yuma myotis	Mammals	AMACC01020	259	1	None	None	G5	S4	null	BLM_S-Sensitive | IUCN_LC-Least Concern | WBWG_LM-Low-Medium Priority	Lower montane coniferous forest | Riparian forest | Riparian woodland | Upper montane coniferous forest
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Dicots	PDPLM0C0E1	58	6	None	None	G4T2	S2	1B.1	BLM_S-Sensitive	Cismontane woodland | Lower montane coniferous forest | Meadow & seep | Valley & foothill grassland | Vernal pool | Wetland
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Dicots	PDPLM0C0E4	8	1	Endangered	Threatened	G4T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Vernal pool | Wetland
Navarretia myersii ssp. deminuta	small pincushion navarretia	Dicots	PDPLM0C0X2	1	1	None	None	G1T1	S1	1B.1	null	Vernal pool | Wetland
Navarretia rosulata	Marin County navarretia	Dicots	PDPLM0C0Z0	13	3	None	None	G2	S2	1B.2	null	Chaparral | Closed-cone coniferous forest | Ultramafic
Northern Vernal Pool	Northern Vernal Pool	Herbaceous	CTT44100CA	20	6	None	None	G2	S2.1	null	null	Vernal pool | Wetland
Penstemon newberryi var. sonomensis	Sonoma beardtongue	Dicots	PDSCR1L483	11	9	None	None	G4T1	S2	1B.3	null	Chaparral
Phalacrocorax auritus	double-crested cormorant	Birds	ABNFD01020	37	1	None	None	G5	S4	null	CDFW_WL-Watch List | IUCN_LC-Least Concern	Riparian forest | Riparian scrub | Riparian woodland
Plagiobothrys strictus	Calistoga popcornflower	Dicots	PDBOR0V120	3	3	Endangered	Threatened	G1	S1	1B.1	SB_UCBBG-UC Berkeley Botanical Garden	Meadow & seep | Valley & foothill grassland | Vernal pool | Wetland
Poa napensis	Napa blue grass	Monocots	PMPOA4Z1R0	2	2	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Meadow & seep | Valley & foothill grassland | Wetland
Rana boylii	foothill yellow-legged frog	Amphibians	AAABH01050	805	16	None	None	G3	S2S3	null	BLM_S-Sensitive | CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened | USFS_S-Sensitive	Aquatic | Chaparral | Cismontane woodland | Coastal scrub | Klamath/North coast flowing waters | Lower montane coniferous forest | Meadow & seep | Riparian forest | Riparian woodland | Sacramento/San

												Joaquin flowing waters
Rana draytonii	California red-legged frog	Amphibians	AAABH01022	1339	3	Threatened	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable	Aquatic | Artificial flowing waters | Artificial standing waters | Freshwater marsh | Marsh & swamp | Riparian forest | Riparian scrub | Riparian woodland | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast flowing waters | South coast standing waters | Wetland
Sidalcea hickmanii ssp. napensis	Napa checkerbloom	Dicots	PDMAL110A6	2	1	None	None	G3T1	S1	1B.1	null	Chaparral
Sidalcea oregana ssp. hydrophila	marsh checkerbloom	Dicots	PDMAL110K2	23	2	None	None	G5T3	S3	1B.2	null	Meadow & seep | Riparian forest | Wetland
Sidalcea oregana ssp. valida	Kenwood Marsh checkerbloom	Dicots	PDMAL110K5	2	1	Endangered	Endangered	G5T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden | SB_UCBBG-UC Berkeley Botanical Garden	Freshwater marsh | Marsh & swamp | Wetland
Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	Dicots	PDBRA2G072	10	1	None	None	G2T1	S1	1B.2	BLM_S-Sensitive	Chaparral | Closed-cone coniferous forest | Ultramafic
Streptanthus hesperidis	green jewelflower	Dicots	PDBRA2G510	19	11	None	None	G2	S2	1B.2	null	Chaparral | Cismontane woodland | Ultramafic
Streptanthus morrisonii ssp. elatus	Three Peaks jewelflower	Dicots	PDBRA2G0S1	7	7	None	None	G2T2	S2	1B.2	BLM_S-Sensitive	Chaparral | Ultramafic
Streptanthus vernalis	early jewelflower	Dicots	PDBRA2G120	1	1	None	None	G1	S1	1B.2	BLM_S-Sensitive	Chaparral | Closed-cone coniferous forest | Ultramafic
Trichostema ruygtii	Napa bluecurls	Dicots	PDLAM220H0	19	8	None	None	G2	S2	1B.2	null	Chaparral | Cismontane woodland | Lower montane coniferous forest | Valley & foothill grassland | Vernal pool | Wetland
Trifolium hydrophilum	saline clover	Dicots	PDFAB400R5	49	2	None	None	G2	S2	1B.2	null	Marsh & swamp | Valley & foothill grassland | Vernal pool | Wetland
Viburnum ellipticum	oval-leaved viburnum	Dicots	PDCPR07080	29	1	None	None	G5	S3	2B.3	null	Chaparral | Cismontane woodland | Lower montane coniferous forest

My project

IPaC Trust Resource Report

Generated May 05, 2015 03:05 PM MDT

US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

My project

PROJECT CODE

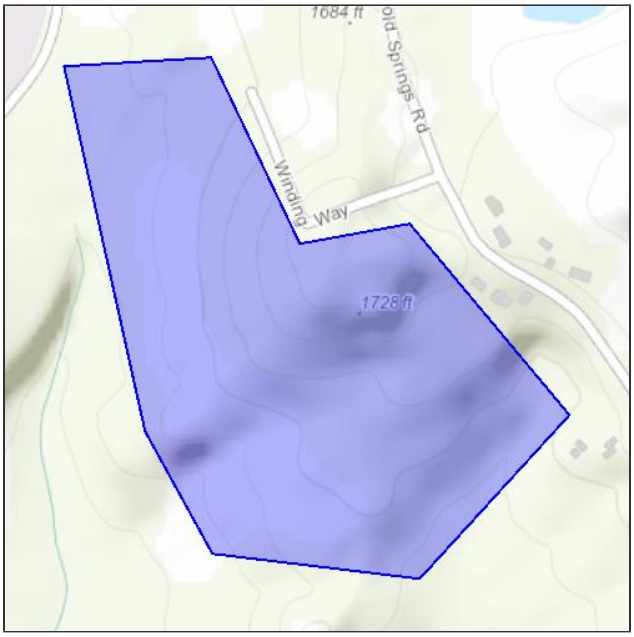
YRPBA-XLJ2Z-BRLC4-UDZRY-KWKA7A

LOCATION

Napa County, California

DESCRIPTION

No description provided



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Sacramento Fish And Wildlife Office
Federal Building
2800 COTTAGE WAY, ROOM W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

Amphibians

California Red-legged Frog

Threatened

DESCRIPTION

This subspecies of red-legged frog occurs from sea level to elevations of about 1,500 meters (5,200 feet). It has been extirpated from 70 percent of its former range and now is found primarily in coastal drainages of central California, from Marin County,California, south to northern Baja California, Mexico. Potential threats to the species include elimination or degradation of habitat from land development and land use activities and habitat invasion by non-native aquatic species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D02D

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Birds

Northern Spotted Owl

Threatened

DESCRIPTION

The northern spotted owl is a medium-sized, dark brown owl with a barred tail, white spots on the head and breast, and dark brown eyes surrounded by prominent facial disks. Males and females have similar plumage, but females typically weigh 10 to 20 percent more than males.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08B

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Crustaceans

California Freshwater Shrimp

Endangered

DESCRIPTION

No description available

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=K01W

CRITICAL HABITAT

No critical habitat has been designated for this species.

Fishes

Delta Smelt

Threatened

DESCRIPTION

No description available

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E070

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Steelhead Northern California DPS - See 50 CFR 223.102

Threatened

DESCRIPTION

Steelhead trout (Oncorhynchus mykiss) belong to the family Salmonidae which includes all salmon, trout, and chars. Steelhead are similar to some Pacific salmon in their life cycle and ecological requirements. They are born in fresh water streams, where they spend their first 1-3 years of life. They then emigrate to the ocean where most of their growth occurs. After spending between one to four growing seasons in the ocean, steelhead return to their native fresh water stream to spawn. Unlike Pac...

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E08D

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Flowering Plants

Clara Hunt's Milk-vetch

Endangered

DESCRIPTION

No description available

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q05J

CRITICAL HABITAT

No critical habitat has been designated for this species.

Insects

Valley Elderberry Longhorn Beetle

Threatened

DESCRIPTION

No description available

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I01L

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

Bald Eagle

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Year-round

DESCRIPTION
A large raptor, the bald eagle has a wingspread of about 7 feet. Adults have a dark brown body and wings, white head and tail, and a yellow beak. Juveniles are mostly brown with white mottling on the body, tail, and undersides of wings. Adult plumage usually is obtained by the 6th year. In flight, the bald eagle often soars or glides with the wings held at a right angle to the body.

Bell's Sparrow

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Year-round

DESCRIPTION
The Sage Sparrow is a medium-sized bird ranging from 12 15 cm in length. It is generally brownish-gray in color with a grayer head and a more brown-colored back and wings. Some distinctive features of the Sage Sparrow include a white eye ring, a white spot in front of the eye, white streaks along the side of the lower jaw, and sometimes a white streak in the middle of its forehead. The Sage Sparrows under parts are mostly white with a contrasting much darker blackish, brown tail. The Sage Sp...

Black Rail

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Breeding

DESCRIPTION
No description available

Burrowing Owl

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Year-round

DESCRIPTION
No description available

Costa's Hummingbird

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Breeding

DESCRIPTION
No description available

Fox Sparrow

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Wintering

DESCRIPTION
No description available

Least Bittern

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Breeding

DESCRIPTION
No description available

Lesser Yellowlegs

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Wintering

DESCRIPTION
No description available

Lewis's Woodpecker

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Wintering

DESCRIPTION
No description available

Loggerhead Shrike

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Wintering

DESCRIPTION
No description available

Nuttall's Woodpecker

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Year-round

DESCRIPTION
No description available

Oak Titmouse

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Year-round

DESCRIPTION
No description available

Olive-sided Flycatcher

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Breeding

DESCRIPTION
No description available

Peregrine Falcon

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Year-round

DESCRIPTION
No description available

Short-billed Dowitcher

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Wintering

DESCRIPTION
No description available

Short-eared Owl

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Wintering

DESCRIPTION
The short-eared owl is an owl of about 0.7 to 0.8 lbs with females slightly larger in size than males. Plumage is brown, buff, white and rust colors. Patches of brown and buff occur mostly on the back side, while the underside is colored more lightly, being mostly white. Females and males have similar plumage. Some distinguishing characteristics of this owl are its gray white fascial disk, and black coloring around yellow eyes. Juveniles have similar plumage to adults, but upper parts and head a...

Swainson's Hawk

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Breeding

DESCRIPTION
Swainsons Hawks are broad-winged Buteos of between 48 and 56 cm in length with females slightly larger than males. Males and females have similar plumage. Swainsons Hawks are polymorphic with pale, light and intermediate morph plumage ranging from dark to light or rufous in color. Most Swainsons Hawks have a sharp contrast between the wing linings and flight feathers. However, some of the darkest Swainsons Hawks do not have this distinction. Swainsons Hawks are distinguishable from other Bu...

Tricolored Blackbird

This is a bird of conservation concern and has the highest priority for conservation

SEASON
Year-round

DESCRIPTION
The Tricolored Blackbird is a medium-sized (18-24cm total length), sexually dimorphic North American passerine (Beedy, Edward, and Hamilton III 1999). Adult males are typically larger than females, and are black with bright red and white plumage on the wing shoulder. Adult females have sooty brown-black plumage with distinct grayish streaks, a relatively white chin and throat, and a smaller reddish shoulder-patch. Banding studies indicate a lifespan of 12-13 years (DeHaven and Neff 1973, Kenn...

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands identified in this project area

CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS SYSTEM
supported by the
CALIFORNIA INTERAGENCY WILDLIFE TASK GROUP
and maintained by the
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
Database Version: 9.0

SPECIES SUMMARY REPORT

FE = Federal Endangered
FT = Federal Threatened
CE = California Endangered
CT = California Threatened
CF = California Fully Protected
CP = California Protected
SC = California Species of Special Concern
PE = Federally-Proposed Endangered
PT = Federally-Proposed Threatened
FC = Federal Candidate
BL = BLM Sensitive
FS = USFS Sensitive
CD = CDF Sensitive
HA = Harvest

Note: Any given status code for a species may apply to the full species or to only one or more subspecies or distinct population segments.

ID	Species Name	Status	Native/Introduced
A001	CALIFORNIA TIGER SALAMANDER	FE FT CT SC	NATIVE
A012	COMMON ENSATINA	SC BL FS	NATIVE
A071	CALIFORNIA RED-LEGGED FROG	FT SC	NATIVE
B051	GREAT BLUE HERON	CD	NATIVE
B052	GREAT EGRET	CD	NATIVE
B110	OSPREY	CD	NATIVE
B111	WHITE-TAILED KITE	CF BL	NATIVE
B113	BALD EAGLE	CE CF BL FS CD	NATIVE
B114	NORTHERN HARRIER	SC	NATIVE
B143	BLACK RAIL	CT CF BL	NATIVE
B144	CLAPPER RAIL	FE CE CT CF	NATIVE
B159	MOUNTAIN PLOVER	SC BL	NATIVE
B269	BURROWING OWL	SC BL	NATIVE
B272	LONG-EARED OWL	SC	NATIVE
B273	SHORT-EARED OWL	SC	NATIVE
B309	OLIVE-SIDED FLYCATCHER	SC	NATIVE
B338	PURPLE MARTIN	SC	NATIVE
B368	BEWICK'S WREN	SC	NATIVE
B372	MARSH WREN	SC	NATIVE
B410	LOGGERHEAD SHRIKE	FE SC	NATIVE
B417	HUTTON'S VIREO	SC	NATIVE
B430	YELLOW WARBLER	SC	NATIVE
B461	COMMON YELLOWTHROAT	SC	NATIVE
B467	YELLOW-BREASTED CHAT	SC	NATIVE
B483	SPOTTED TOWHEE	SC	NATIVE
B484	CALIFORNIA TOWHEE	FT CE	NATIVE
B494	VESPER SPARROW	SC	NATIVE
B497	BELL'S SPARROW	FT SC	NATIVE
B499	SAVANNAH SPARROW	CE SC	NATIVE
B501	GRASSHOPPER SPARROW	SC	NATIVE
B505	SONG SPARROW	SC	NATIVE
B522	YELLOW-HEADED BLACKBIRD	SC	NATIVE
M006	ORNATE SHREW	FE SC	NATIVE
M033	WESTERN RED BAT	SC FS	NATIVE
M037	TOWNSEND'S BIG-EARED BAT	SC BL FS	NATIVE
M038	PALLID BAT	SC BL FS	NATIVE
M045	BRUSH RABBIT	FE CE HA	NATIVE
M051	BLACK-TAILED JACKRABBIT	SC HA	NATIVE
M105	CALIFORNIA KANGAROO RAT	SC	NATIVE

ID	Species	Status	Native/Introduced
M117	DEER MOUSE	SC	NATIVE
M127	DUSKY-FOOTED WOODRAT	FE SC	NATIVE
M134	CALIFORNIA VOLE	FE CE SC BL	NATIVE
M152	RINGTAIL	CF	NATIVE
M165	MOUNTAIN LION	SC	NATIVE
R046	NORTHERN RUBBER BOA	CT FS	NATIVE
R048	RING-NECKED SNAKE	FS	NATIVE
R053	STRIPED RACER	FT CT	NATIVE
R057	GOPHERSNAKE	SC	NATIVE
R061	COMMON GARTERSNAKE	FE CE CF SC	NATIVE

Total Number of Species: 49

Query Parameters

Included Locations
Napa Co

Included Location Seasons
Migrant, Summer, Winter, Yearlong

Included Habitats & (Stages)
Blue Oak Woodland, Blue Oak-foothill Pine, Coastal Oak Woodland, Coastal Scrub, Douglas-fir, Fresh Emergent Wetland, Lacustrine, Mixed Chaparral, Perennial Grassland, Ponderosa Pine, Redwood, Valley Foothill Riparian, Wet Meadow

Habitat Suitability Threshold
Reproduction - Low, Cover - Low, Feeding - Low

Included Habitat Seasons
Migrant, Summer, Winter, Yearlong

Excluded Elements
Barren, Bogs, Brush Pile, Buildings, Campground, Cave, Cliff, Dump, Fences, Grass/agriculture, Jetty, Kelp, Lakes, Lithic, Mine, Mud Flats, Nest Box, Nest Island, Nest Platform, Pack Stations, Ponds, Salt Ponds, Sand Dune, Soil - Aerated, Soil - Friable, Soil - Gravelly, Soil - Organic, Soil - Saline, Soil - Sandy, Springs, Springs - Hot, Springs - Mineral, Steep Slope, Talus, Tidepools, Transmission Lines, Tree/agriculture, Vernal Pools, Water, Water - Created Body, Water - Fast, Water - Slow, Water/agriculture, Wharf

Included Species
All Species Included

Included Special Statuses
California Endangered, California Fully Protected, California Protected, California Species Of Special Concern, California Threatened, Cdf Sensitive, Federal Candidate, Federal Endangered, Federal Proposed Endangered, Federal Proposed Threatened, Federal Threatened, Usfs Sensitive

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Detert Reservoir (3812265) or Aetna Springs (3812264) or Walter Springs (3812263) or Calistoga (3812255) or St. Helena (3812254) or Chiles Valley (3812253) or Kenwood (3812245) or Rutherford (3812244) or Yountville (3812243)) and Habitat is (Chaparral or Wetland or Cismontane woodland or Riparian woodland)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter striatus sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Endangered	G2G3	S1S2	SSC
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G5T1	S1	1B.2
Alopecurus aequalis var. sonomensis Sonoma alopecurus	PMPOA07012	Endangered	None	G5T1Q	S1	1B.1
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G2?	S2?	1B.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos canescens ssp. sonomensis Sonoma canescent manzanita	PDERI04066	None	None	G3G4T2	S2	1B.2
Arctostaphylos manzanita ssp. elegans Konocti manzanita	PDERI04271	None	None	G5T3	S3	1B.3
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	PDERI041G4	None	None	G3T1	S1	1B.1
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Astragalus claranus Clara Hunt's milk-vetch	PDFAB0F240	Endangered	Threatened	G1	S1	1B.1
Astragalus rattanii var. jepsonianus Jepson's milk-vetch	PDFAB0F7E1	None	None	G4T3	S3	1B.2
Brodiaea leptandra narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Calycadenia micrantha small-flowered calycadenia	PDAST1P0C0	None	None	G2	S2	1B.2
Calystegia collina ssp. oxyphylla Mt. Saint Helena morning-glory	PDCON04032	None	None	G4T3	S3	4.2

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Castilleja ambigua var. meadii Mead's owls-clover	PDSCR0D404	None	None	G4T1	S1	1B.1
Ceanothus confusus Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
Ceanothus divergens Calistoga ceanothus	PDRHA04240	None	None	G2	S2	1B.2
Ceanothus purpureus holly-leaved ceanothus	PDRHA04160	None	None	G2	S2	1B.2
Ceanothus sonomensis Sonoma ceanothus	PDRHA04420	None	None	G2	S2	1B.2
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Cryptantha dissita serpentine cryptantha	PDBOR0A0H2	None	None	G2	S2	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erigeron greenei Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G2	S2	1B.2
Eryngium constancei Loch Lomond button-celery	PDAPI0Z0W0	Endangered	Endangered	G1	S1	1B.1
Fritillaria pluriflora adobe-lily	PMLIL0V0F0	None	None	G3	S3	1B.2
Harmonia hallii Hall's harmonia	PDAST650A0	None	None	G2	S2?	1B.2
Hesperolinon bicarpellatum two-carpellate western flax	PDLIN01020	None	None	G3	S3	1B.2
Hesperolinon sharsmithiae Sharsmith's western flax	PDLIN010E0	None	None	G2Q	S2	1B.2
Juncus luciensis Santa Lucia dwarf rush	PMJUN013J0	None	None	G2G3	S2S3	1B.2
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasthenia burkei Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
Layia septentrionalis Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2

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Leptosiphon jepsonii Jepson's leptosiphon	PDPLM09140	None	None	G2	S2	1B.2
Limnanthes floccosa ssp. floccosa woolly meadowfoam	PDLIM02043	None	None	G4T4	S3	4.2
Limnanthes vinculans Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
Lupinus sericatus Cobb Mountain lupine	PDFAB2B3J0	None	None	G2	S2	1B.2
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Navarretia leucocephala ssp. pauciflora few-flowered navarretia	PDPLM0C0E4	Endangered	Threatened	G4T1	S1	1B.1
Navarretia myersii ssp. deminuta small pincushion navarretia	PDPLM0C0X2	None	None	G1T1	S1	1B.1
Navarretia rosulata Marin County navarretia	PDPLM0C0Z0	None	None	G2	S2	1B.2
Northern Vernal Pool Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
Penstemon newberryi var. sonomensis Sonoma beardtongue	PDSCR1L483	None	None	G4T1	S2	1B.3
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Plagiobothrys strictus Calistoga popcornflower	PDBOR0V120	Endangered	Threatened	G1	S1	1B.1
Poa napensis Napa blue grass	PMPOA4Z1R0	Endangered	Endangered	G1	S1	1B.1
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S2S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Sidalcea hickmanii ssp. napensis Napa checkerbloom	PDMAL110A6	None	None	G3T1	S1	1B.1
Sidalcea oregana ssp. hydrophila marsh checkerbloom	PDMAL110K2	None	None	G5T3	S3	1B.2
Sidalcea oregana ssp. valida Kenwood Marsh checkerbloom	PDMAL110K5	Endangered	Endangered	G5T1	S1	1B.1
Streptanthus brachiatus ssp. brachiatus Socrates Mine jewelflower	PDBRA2G072	None	None	G2T1	S1	1B.2
Streptanthus hesperidis green jewelflower	PDBRA2G510	None	None	G2	S2	1B.2

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Streptanthus morrisonii ssp. elatus Three Peaks jewelflower	PDBRA2G0S1	None	None	G2T2	S2	1B.2
Streptanthus vernalis early jewelflower	PDBRA2G120	None	None	G1	S1	1B.2
Trichostema ruygtii Napa bluecurls	PDLAM220H0	None	None	G2	S2	1B.2
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G5	S3	2B.3

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