

**CCUP21-0004/Single Source Solutions**  
**Initial Study Mitigated Negative Declaration Appendices A-L**  
**Exhibit K**

## Appendix A

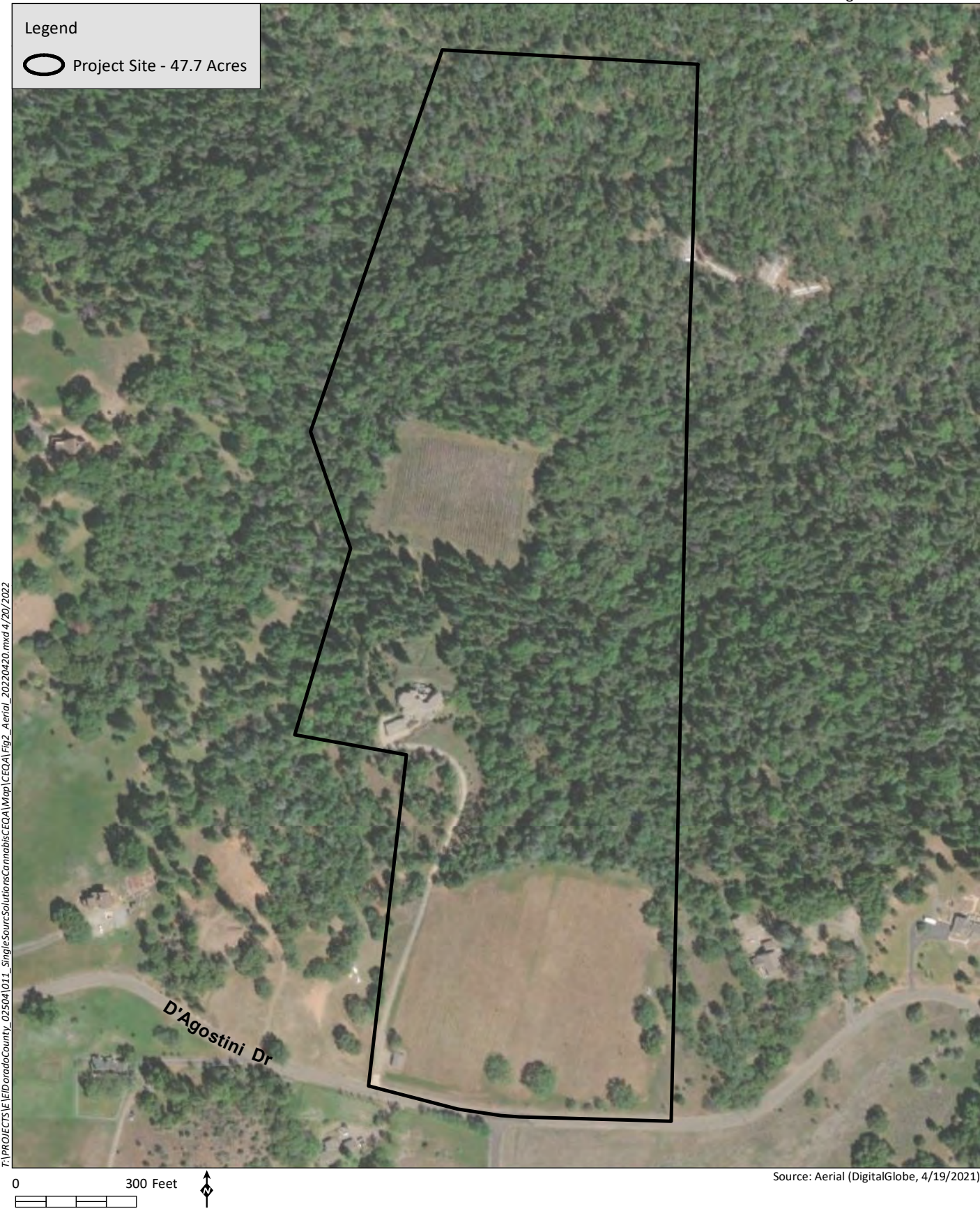
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### Figures



Figure 1





Sacramento, CA 95834



**HELIX**  
Environmental Planning

## 24-0520 E 4 of 247



**PREMISE DIAGRAM SITE PLAN**

Pioneer Fire District.

4941 D'agostini Dr.

Somerset, CA 95684

Parcel ID: 046-710-17-100

Lot area: 46.53 Acres

Plot Size: 24"x36"

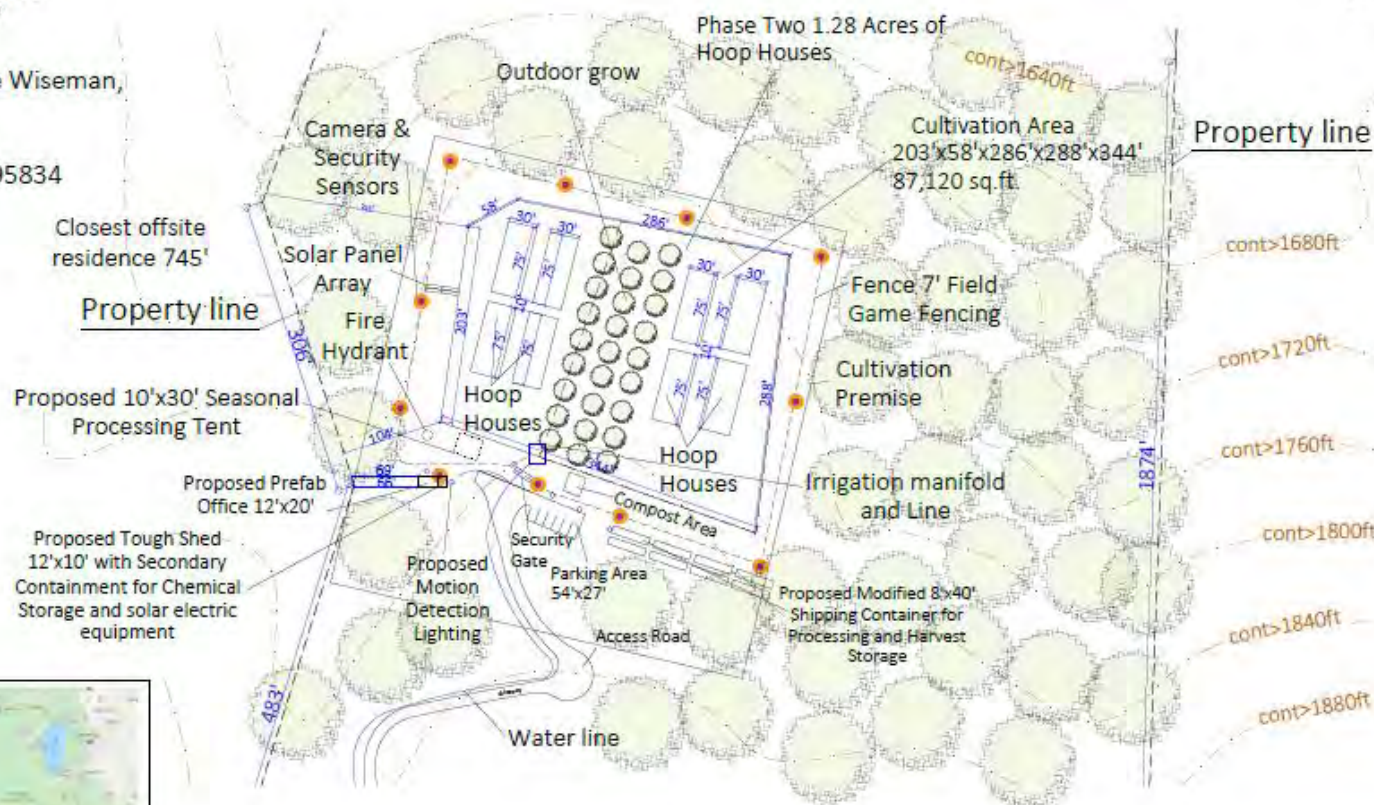
Owners:

John Muraco, Joe Wiseman,

Michael Pinette

338 Olivadi Way,

Sacramento, CA 95834



Source: GETASITEPLAN.COM

## Appendix B

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### On-Site Transportation Review

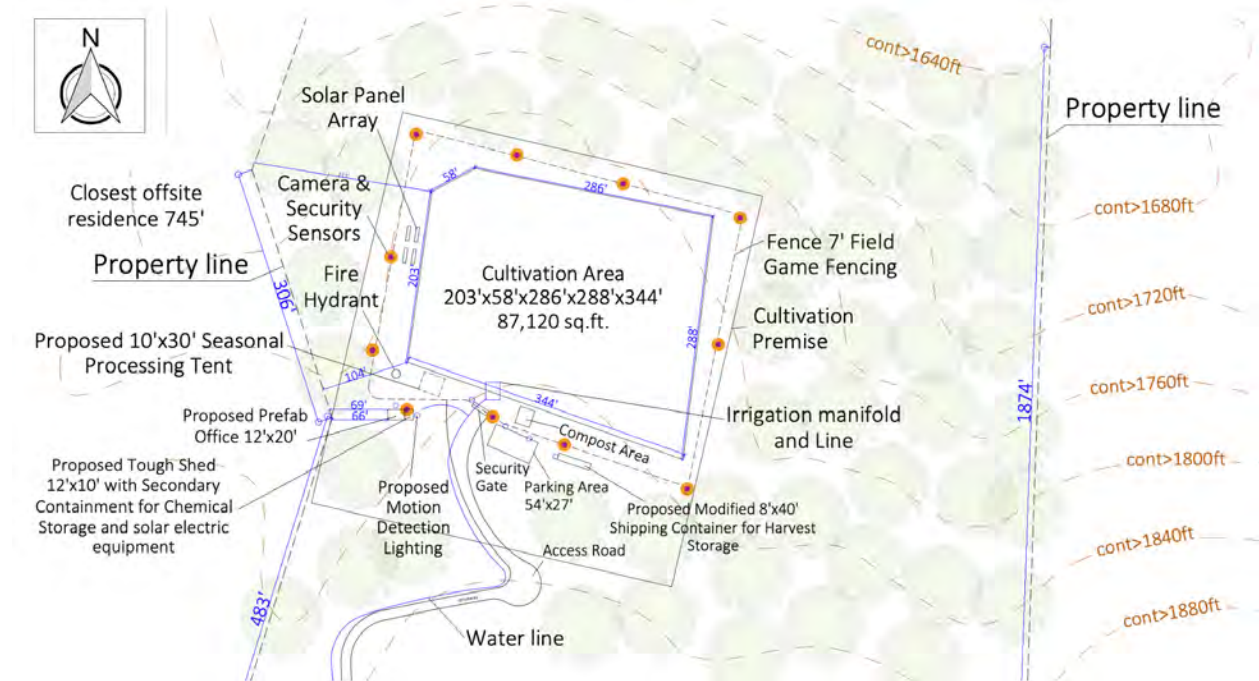


## On Site Transportation Review

### Outdoor THC Cannabis Cultivation

4941 D'Agostini Road Somerset, CA 95634

Located In El Dorado County



Prepared for:

4941 D'Agostini Road Somerset, CA 95634

April 26, 2021

### ON SITE TRANSPORTATION REVIEW

Authored by:

Grant P. Johnson, TE



Traffic Engineering & Transportation Planning

*This OSTR has been prepared and certified by Grant P. Johnson, TE, Principal. Lic #1453*



## Table of Contents

<b>Overview of OSTR Process.....</b>	<b>3</b>
<b>Description of Project.....</b>	<b>3</b>
Figure 1A. Site Plan Proposed Building Structures, Existing Residence, and Driveway / Parking Area .....	4
Figure 1B. Premise Site Plan Details, 87,120 SF Cultivation Area .....	5
Parking Lot Evaluation .....	5
Figure 2. 32' long Fire Truck, Turn Around Maneuver, OK.....	6
<b>OSTR Item #1: Existence of current traffic problems in the local area such as a high-accident location, non-standard intersection/roadway, or an intersection in need of a traffic signal .....</b>	<b>7</b>
Traffic Accident History.....	7
Table 1. Traffic Accident History Summary (5 years, 2016-2020) .....	7
Figure 3. Accident Location Map - Jan 1,2016 - DEC 31,2020 (5 yrs) .....	8
Accident Analysis .....	9
<b>OSTR Item #2: Proximity of proposed site driveway(s) to other driveways or intersections .....</b>	<b>10</b>
Figure 4. D'Agostini Road, A Paved 20' Wide Road.....	10
<b>OSTR Item #3A: Adequacy of vehicle parking: anticipated demand, zoning code req. ....</b>	<b>11</b>
<b>OSTR Item #3B: Estimated Trip Generation and Trip Distribution.....</b>	<b>11</b>
Table 2A. Trip Generation Summary of Project, KSF* vs Employees .....	12
Detailed Project Operations Description .....	12
Table 2B. Employee Activity for Project.....	12
<b>OSTR Item #4: Adequacy of the project site design: truck circulation, loading demand on-site, when the anticipated number of deliveries and service calls may exceed 10 per day .....</b>	<b>13</b>
<b>OSTR Item #5: Adequacy of the project site design to provide at least a 25 foot minimum required throat depth (MRTD) at project driveways, include calculation of the MRTD .....</b>	<b>13</b>
Figure 5. Project Entrance Driveway, Driveway Throat Distance.....	13
<b>OSTR Item #6: Adequacy of the project site design to convey all vehicle types.....</b>	<b>14</b>
<b>OSTR Item #7: Adequacy of sight distance on-site .....</b>	<b>14</b>
Figure 6. Caltrans Stopping Sight Distance Standards .....	15
Figure 7. Sight Distance, Mt Aukum Rd Southbound and Northbound .....	16
Figure 8. Sight Distance Survey for D'Agostini Road at Project Site.....	17
<b>OSTR Item #8: Queuing analysis of "drive-through" facilities" .....</b>	<b>18</b>
<b>Appendix .....</b>	<b>19</b>
Pioneer Fire Protection District (PFPD) Approval Letter .....	19
Appendix Traffic Counts.....	24
Appendix: Trip Generation Surveys .....	25



## Overview of OSTR Process

On the El Dorado County website under information pertaining to an On Site Transportation Review<sup>1</sup> (OSTR), the following items have been identified in a process that needs to be assessed in the OSTR:

*“If an OSTR is required, the following information shall be evaluated and the findings signed and stamped by a registered Traffic Engineer or Civil Engineer, and shall be included with the project submittal.*

The list below has also been augmented with an additional section on calculating the estimated Vehicle Miles Traveled (VMT) for the project for the with and without project scenario.

1. *Existence of any current traffic problems in the local area such as a high-accident location, non-standard intersection or roadway, or an intersection in need of a traffic signal*
2. *Proximity of proposed site driveway(s) to other driveways or intersections*
3. *A. Adequacy of vehicle parking relative to both the anticipated demand and zoning code requirements*  
*B. Estimated Trip Distribution and VMT Calculations, with and without project*
4. *Adequacy of the project site design to fully satisfy truck circulation and loading demand on-site, when the anticipated number of deliveries and service calls may exceed 10 per day*
5. *Adequacy of the project site design to provide at least a 25 foot minimum required throat depth (MRTD) at project driveways, include calculation of the MRTD*
6. *Adequacy of the project site design to convey all vehicle types*
7. *Adequacy of sight distance on-site*
8. *Queuing analysis of “drive-through” facilities”*

This report satisfies the requirements of the OSTR process by including a section for each of the eight items listed above, in the pages that follow.

## Description of Project

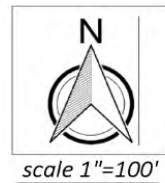
The project seeks a license for 87,120 sq.ft of outdoor full-term cultivation THC cannabis. The project is located at 4941 D'agostini Dr. in Somerset, CA 95684, and has Parcel ID: 046-710-17-100. The Lot area is 46.53 Acres and is an existing agricultural operation growing grapes on the southernmost portion of the property. The property has an entrance and exit on D'Agostini Drive. The property has an existing residence, an existing well, and a security gate. The operation will have 4 full time and 5 to 6 seasonal temporary employees. Since the parcel has an existing agricultural operation (vineyard/grapes), the addition of commercial cannabis will create a de minimis amount of new traffic on D'Agostini Drive. Figure 1A shows the proposed site plan for the project. Figure 1B shows a more detailed site plan of the area where the cultivate will take place.

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<sup>1</sup> [https://www.edcgov.us/Government/dot/Documents/TIS\\_Initial\\_Determination\\_Form.pdf](https://www.edcgov.us/Government/dot/Documents/TIS_Initial_Determination_Form.pdf)

# PROPERTY DIAGRAM SITE PLAN

Pioneer Fire District.  
4941 D'agostini Dr.  
Somerset, CA 95684  
Parcel ID: 046-710-17-100  
Lot area: 46.53 Acres  
Plot Size: 24"x36"  
Owners: Christina Muraco,  
John Muraco, Joe Wiseman,  
Michael Pinette  
338 Olivadi Way,  
Sacramento, CA 95834



## PROJECT CULTIVATION AREA

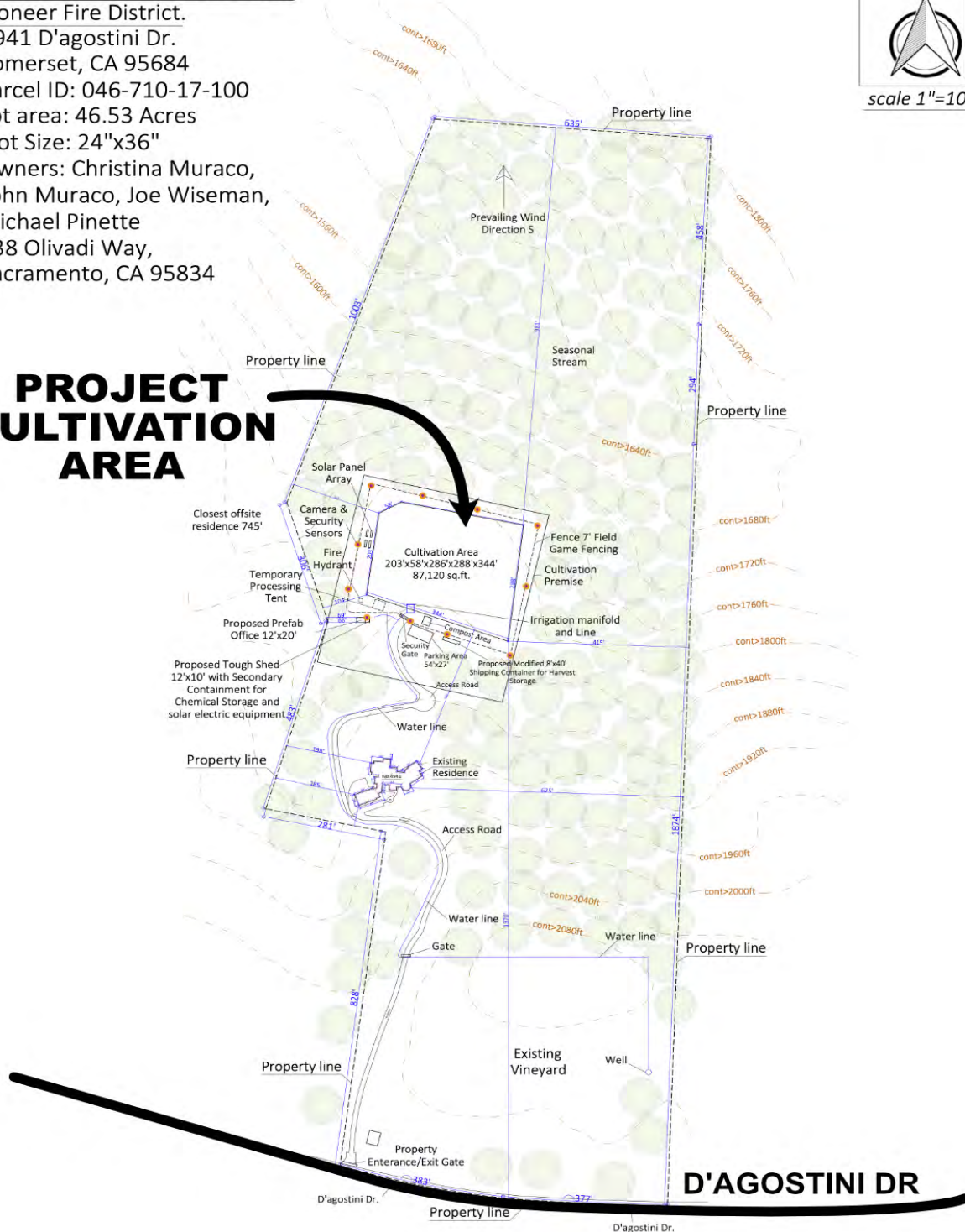
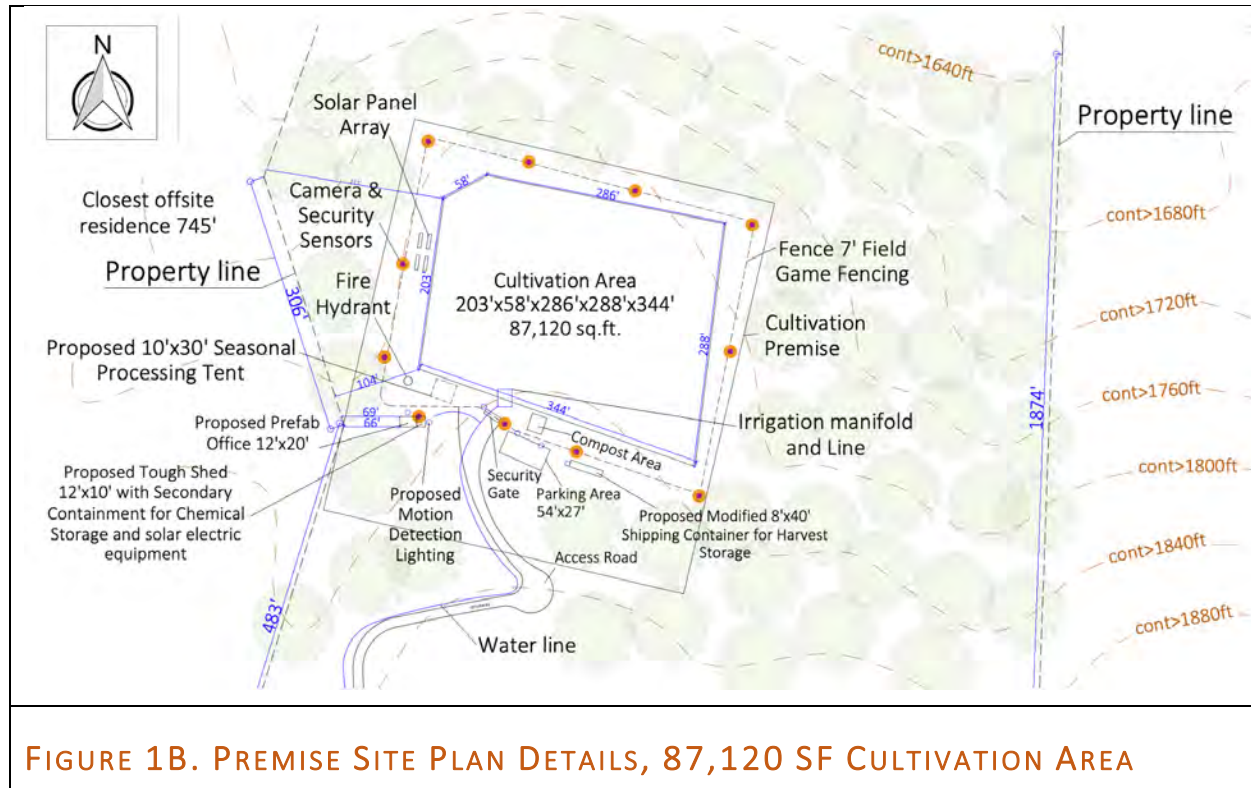


FIGURE 1A. SITE PLAN PROPOSED BUILDING STRUCTURES, EXISTING RESIDENCE, AND DRIVEWAY / PARKING AREA



The project will add a temporary 10' x 30' Seasonal Processing Tent, a proposed 12' x 20' Prefab Office, a proposed 12' x 10' Tough Shed for storage of chemicals and solar electric equipment, and a proposed 8' x 40' Shipping Container for Harvest Storage. There will also be security features (cameras, alarm sensors, lights, new fencing and gates), as well as a 54' x 27' parking area.

There are no close neighboring residences that can receive off-site impacts from the site. The project consists of agricultural farm uses for cannabis production, and will have no customers on site.

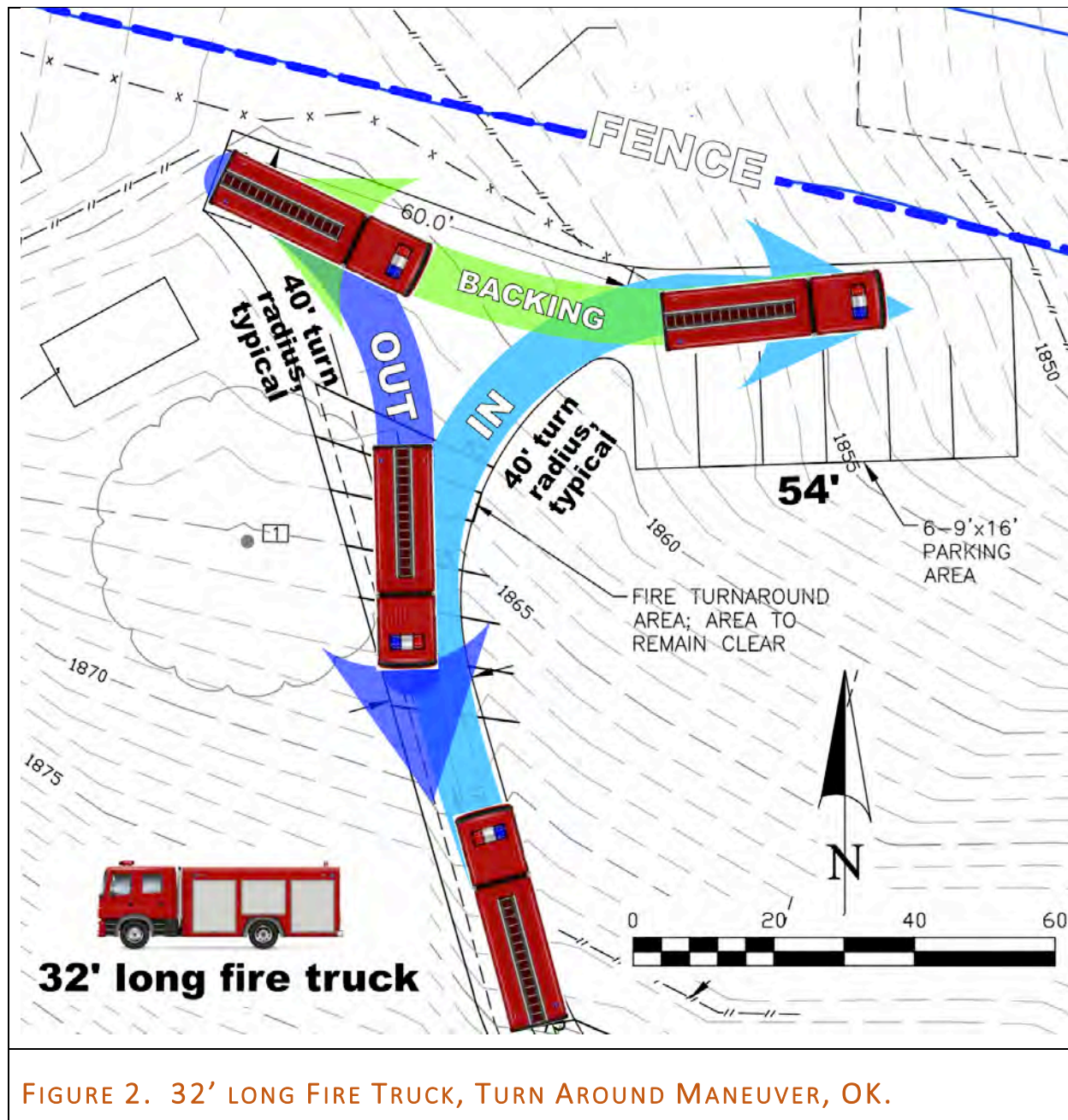


The combined square footage of the structures that could be considered office and related light industrial uses, is 240 SF + 300 SF + 120 SF + 320, for a combined total square footage of 980 SF.

## PARKING LOT EVALUATION

The parking situation on the site plan shows a parking area (27 feet by 54 feet) that is directly off the east side of the driveway hammerhead turnaround area at the end of the driveway. The driveway has a single connection to D'Agostini Drive, which has a main gate access with a throat width of 22 feet at the gate, and 36 feet of driveway throat length outside of the gate from the edge of D'Agostini Drive. The driveway has a minimum width of 12 feet which flares out to a maximum width of about 60 feet at the hammerhead ending of the driveway, interfacing directly with the parking area as shown in Figure 2. A 32 foot fire truck can easily make the turn-around in this hammerhead / parking area because there is a 40 foot inside radius pathway for the vehicle. A typical fire truck is 32 feet long, 10 feet wide, and has a wheelbase axle

separation of about 17 feet<sup>2</sup>. This means that it has a high level of maneuverability in tighter constrained areas because the front and rear bumpers extend approximately 7 feet beyond the wheels. This allows these vehicles to make tighter turns. This site plan was conservatively analyzed using a 40 foot turn radius, even though a 32 foot long fire truck can have a turn radius as little as 25 feet.



<sup>2</sup> <https://www.amherstma.gov/DocumentCenter/View/24390/SUB2014-01-The-Retreat-Prelim-Subdiv-Fire-Dept-Apparatus-Dimensions?bidId=> (Fire truck dimensions and specs typical of numerous jurisdictions)

OSTR Item #1: Existence of current traffic problems in the local area such as a high-accident location, non-standard intersection/roadway, or an intersection in need of a traffic signal

### TRAFFIC ACCIDENT HISTORY.

Over a five year period from Jan 1, 2016 to Dec 31, 2020, there were three (3) accidents in the vicinity of the Mt. Aukum Road and D'Agostini Road intersection in the Mount Aukum community. Figure 3 is an accident location map showing the location and type for each of these three accidents, each being injury accidents. Figure 3 also shows the detailed information about each accident.

A brief summary of Table 1, which corresponds to Figure 3, is that in the past five years there were only three accidents at or near to the intersection of Mt. Aukum Road and D'Agostini Road, one being a **sideswipe** accident at the intersection for two northbound vehicles, one of the drivers making an unsafe turn. The other two accidents were where the vehicle ran off the road and **hit a fixed object**. In both of these cases the driver was impaired with alcohol or drugs. All three accidents were injury accidents, but with no fatalities.

Based on this information, the traffic accident situation does not have any repeating patterns that would be relevant to the project, and all seem to be entirely separate and independent from each other, each due to driver error and not road design. The traffic control devices installed on the roadways in the vicinity of the Mt. Aukum Road and D'Agostini Road intersection are installed according to standard CAMUTCD guidelines and regulation based on my field inspection of the local roadways.

There were no accidents in 2017, or 2019. The accidents are shown in Table 1 below:

**TABLE 1. TRAFFIC ACCIDENT HISTORY SUMMARY (5 YEARS, 2016-2020)**

Date of Accident	Type of Accident	Location of Accident	Injury or Fatal	Case ID
Oct 29, 2016	SB Car Ran Off Road, Hit Fixed Object	Mt Aukum Rd 120' n/o D'Agostini Rd	Injury	90314503
Oct 6, 2018	NB Car Sideswiped NB Car, Unsafe Turn	Mt Aukum Rd 5' s/o D'Agostini Rd	Injury	90833823
Nov 26, 2020	SB Car Ran Off Road, Hit Fixed Object	Mt Aukum Rd 1214' s/o Cedar Creek Rd Intersection	Injury	91358352

Source: SWITRS and TIMS Interface<sup>3</sup>

<sup>3</sup> <https://tims.berkeley.edu>



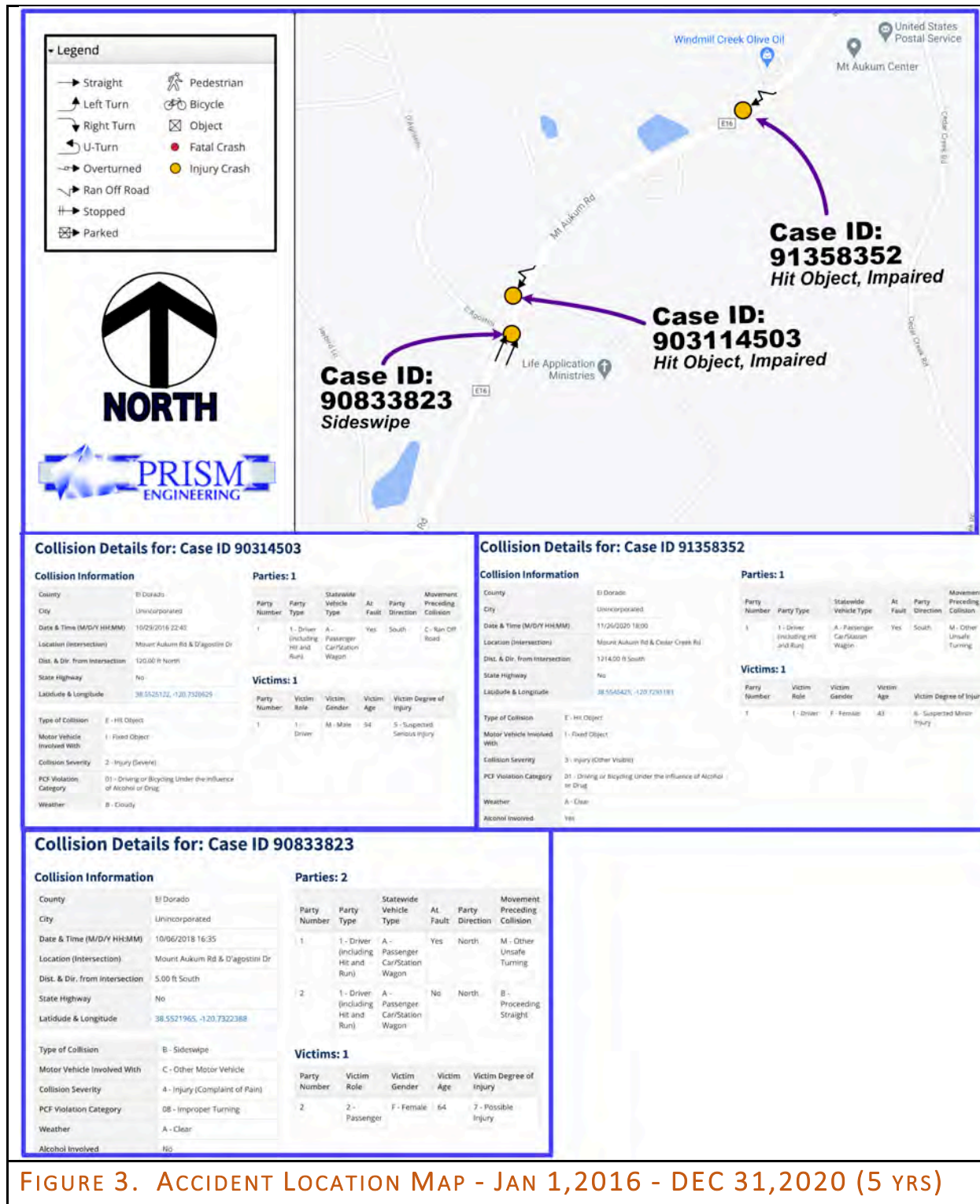


FIGURE 3. ACCIDENT LOCATION MAP - JAN 1,2016 - DEC 31,2020 (5 YRS)

## ACCIDENT ANALYSIS

PRISM Engineering referenced the County of El Dorado Transportation Division, Annual Accident Location Study 2017, APRIL 12, 2018, in developing the accident summary information for the study area roadways. This document showed that there were three accidents identified in the study on Mt. Aukum Road, but about 5 miles to the north of D'Agostini Road (see excerpt below). The accident codes<sup>4</sup> shown to document the type of accident.

Site No.	Street	Mile Post	Dist.	Dir.	Cross Street	Injury	Fatal	Code
	MT AUKUM RD	5.91	250	WEST	FAIRPLAY RD	1	0	13
	MT AUKUM RD	5.93	140	SOUTH	FAIRPLAY RD	0	0	5
	MT AUKUM RD	6.00	190	NORTH	FAIRPLAY RD	1	0	3

Intersection accident rates are expressed as Accidents per Million Vehicles Entering (Acc/MEV) the intersection. Since the daily volume on Mt. Aukum Road is 3,920 cars per day, and 2,174 ADT on Fairplay Road, the total combined daily volume entering the intersection of Mt. Aukum Road and Fairplay Road is 6,094 ADT. Over a five-year period, the total volume entering the intersection would be  $5 \times 365 \times 6094 = 11,121,550$  vehicles, and there were three accidents during the same time period. Using the Acc/MEV equation, this accident rate for Mt. Aukum Road in the Somerset area near Fairplay Road is calculated as:

$$3 \text{ accidents} / 11.12 \text{ M vehicles} = 0.27$$

This 0.27 accident rate is far less than the 1.0 value set forth in the El Dorado County accident rate thresholds for an intersection.

In the Mt. Aukum community area near the D'Agostini Road intersection, the Mt. Aukum Road ADT is 3,920 cars per day. D'Agostini Road is estimated to be as high as 1,000 ADT based on the number of homes in the area that may use the D'Agostini / Mt. Aukum intersection (50-100 homes). Over a five-year period, the total estimated volume entering the intersection would be  $5 \times 365 \times (3,920 + 1,000) = 8,979,000$  vehicles, and there were three accidents during the same time period. Using the Acc/MEV equation, this accident rate for Mt. Aukum Road in the Mt. Aukum area is calculated as:

$$3 \text{ accidents} / 8.98 \text{ M vehicles} = 0.33$$

This 0.33 accident rate is also far less than the 1.0 value set forth in the El Dorado County accident rate thresholds for an intersection.

The accidents summarized in this section, overall do not meet the minimum thresholds to be a "Location Requiring Further Investigation," also because there:

- Must be a site with 3 or more accidents in a single year (*Not the case*)
- Two or more accidents, one being fatal in a single year (*Not the case at any single location*)
- Sites with two or more in a single year, two or more with motorcycles within 0.25 mile section (*Not the case*)

The following code numbers have been used to classify the various major types of accidents:

1 = Headon	2 = Sideswipe	3 = Rearend
4 = Broadside	5 = Hit Object	6 = Overturned
7 = Pedestrian Involved	8 = Bicycle Involved	9 = Animal Involved
10 = Parked Vehicle Involved	11 = Snow Removal Equip. Involved	12 = Other
13 = Motorcycle Involved	14 = School Bus Involved	

4

- Sites with two or more in a single year, two or more with bicycles within 0.25 mile section (*Not the case*)
- Sites with two or more in a single year, two or more with pedestrians within 0.25 mile section (*Not the case*)
- Sections of homogeneous roadway with five (5) or more accidents of a similar type occurring within a quarter-mile section during a single year (*Not the case*).

Based on these findings, no recommendations are made to mitigate based on traffic accident history.

## OSTR Item #2: Proximity of proposed site driveway(s) to other driveways or intersections

The project site has direct access to D'Agostini Road, a narrow paved residential access road, 20 feet in width, with no centerline or edge line striping. There is a four-way stop controlled intersection at Bertone Drive, as shown in Figure 4. The width of the road throughout is 20 feet. The nearest adjacent driveway to the project driveway is 50 feet to the east on the opposite side of the road (4940 D'Agostini Road), and another home's driveway is 360 feet to the west (4916 D'Agostini Road). Figure 4 shows D'Agostini Road in two locations, one at Bertone Drive intersection, and the other photo is immediately adjacent to the subject project property (located to the right in the photo). D'Agostini Road is 20 feet in width at both locations. The driveway and gated entry of the property can be seen in Figure 4, looking to the west.



20 foot wide D'Agostini Road at Bertone Drive intersection, a four-way stop, looking west



20 foot wide D'Agostini Road along frontage of project site, looking west

**FIGURE 4. D'AGOSTINI ROAD, A PAVED 20' WIDE ROAD**



Because this is a residential street with very low traffic volumes, there are no situations where project property will have a driveway that is in conflict with any other driveway in the vicinity of the project site. This OSTR item is not an issue with the proposed project location and setting.

### OSTR Item #3A: Adequacy of vehicle parking: anticipated demand, zoning code req.

The project site is very large (46.53 acres total) and has grape agriculture uses currently active on the site. A dedicated parking area with six (6) parking spaces is shown on the site plan, and located at the end of the driveway and adjacent to the cultivation farming area. Since there are only four (4) full-time employees, the project site has ample space to accommodate additional vehicles above those needed for employees. There will be no customers coming to the site, as it is primarily a farm operation, with a combination crop. Occasionally, up to three times a year for a couple of weeks at a time, there will be need for additional parking when temporary employees are staying, or for occasional visitors, etc., and this can be accommodated on the site, even on the wider portions of the driveway turn-around area as shown in Figure 2.

### OSTR Item #3B: Estimated Trip Generation and Trip Distribution

El Dorado County DOT previously requested that PRISM Engineering conduct trip generation surveys for similar cannabis farming uses since there were no DOT established trip generation rates available for cannabis cultivation farming. PRISM Engineering under the direction of County DOT collected data pertaining to similar uses for a period of seven days, so that a basis could be formed to develop a specific trip generation. Data was collected at two similar cannabis cultivation sites in northern California, and a summary of this data is contained in the Appendix of this report<sup>5</sup>.

County DOT reviewed this survey data, and in conjunction with review of several other sources of similar data, subsequently developed the specific trip generation rate to be used in this study. This composite trip generation rate is very similar in bottom-line results to the surveys conducted (22.3 trips vs 27.7 trips), but is based on a comparison to the Institute of Transportation Engineers (ITE) “110 Light Industrial” trip generation rate, which has been modified for use in assessing cannabis farm sites in El Dorado County, and is based on the number of square feet of the specific permanent structure/building on the site.

The project site total building square footage used in our calculation of trip generation was 980 square feet, as shown in Table 2A below. The trip rate for the number of employees at harvest time of the project is also given in Table 2A (3 trips/emp), and this results in 30 daily trips with 10 employees, which is also below the Policy TC-Xe threshold of 100 daily trips.

The result in the last column of Table 2A is that the daily trip generation of the project is calculated to be below 100 trips per day (4.9 trips per day for the 980 square footage metric, or 30 trips per day based on the worst case seasonal harvest time employee count of 10 employees). Either way, a formal traffic impact study requirement is **not** triggered based on the threshold of 100 daily trips.

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<sup>5</sup> Result of survey: 27.7 daily trips per 2 acres of cannabis cultivation canopy. See Appendix for details.

**TABLE 2A. TRIP GENERATION SUMMARY OF PROJECT, KSF\* VS EMPLOYEES**

ITE Trip Generation Manual Trip Generation Period (110 Light Industrial)	ITE Trip Generation Rate per KSF GFA	KSF of Facility	Trips	Threshold Policy TC- Xe	Conclusion
<b>daily</b>	<b>4.96</b>	<b>0.98</b>	<b>4.9</b>	100	<i>4.9 &lt; 100, traffic study not needed</i>
a.m. peak hour	0.70	0.98	0.7	10	
p.m. peak hour	0.63	0.98	0.6	10	
ITE Trip Generation Manual Trip Generation Period	ITE Trip Generation Rate per EMPLOYEE	Number of EMPLOYEES	Trips	Threshold Policy TC- Xe	Conclusion
<b>daily</b>	<b>3</b>	<b>10</b>	<b>30</b>	100	30 < 100

Source: El Dorado County DOT and PRISM Engineering. \*KSF=1,000 square feet

## DETAILED PROJECT OPERATIONS DESCRIPTION

The regular project traffic anticipated is up to 4 cars from employees arriving each day. The temporary employees will be on the site as shown in Table 2B below, for a total of 4 regular employees, and 6 temporary employees during seasonal harvest (maximum total of 10 employees).

**TABLE 2B. EMPLOYEE ACTIVITY FOR PROJECT**

ACTIVITY	REGULAR EMPLOYEE				TEMP
	1	2	3	4	6
Cannabis Production	X	X	X	X	
Cannabis Storage	X	X	X	X	
Administrative	X	X	X	X	
Sales	X				
Distribution	X				
Processing	X	X	X	X	
Cultivation/Seasonal Harvest	X	X	X	X	XXXXXX
Cultivation Maintenance	X	X	X	X	
TOTALS	3 Employees				

Source: Project Applicant, and PRISM Engineering.

Occasionally there will be small delivery trucks, but not on a regular daily basis. There will be no customers to the farm site, as it will not be open to the public. There may be occasional inspections from the Fire Department, or from the local Sheriff (rare), but all other traffic will be the limited employee commute related traffic and occasional errands/deliveries or picking up of product, but not on a regular daily basis.

The weekday average peak hour traffic volume on Mt. Aukum Road is only 88 vehicles per hour in the pm peak hour (see traffic count in Appendix). The project is anticipated to add up to 4 vehicles in a single direction inbound in the am or outbound pm peak hour. Any traffic impact to this existing LOS A condition

is considered negligible and insignificant since the local street volumes are very low and operating as uncongested traffic.

**OSTR Item #4: Adequacy of the project site design: truck circulation, loading demand on-site, when the anticipated number of deliveries and service calls may exceed 10 per day**

The OSTR guideline thresholds for deliveries and service calls is that the project must not exceed 10 per day, or the site has to be evaluated for adequacy of truck circulation. Since the project will not have daily deliveries and service calls even on a daily basis, this 10 trip per day threshold cannot be met. The project site is adequate to satisfy all future truck circulation and loading demands, as all such occasional activity will take place entirely on the large site, and any delivery trucks will be of small size (panel trucks, etc.). There is a hammerhead parking area at the end of the driveway enabling simple turn-around of vehicles including large emergency response fire trucks (32 feet in length), by making a simple three-point turn-around maneuver (see Figure 2).

**OSTR Item #5: Adequacy of the project site design to provide at least a 25 foot minimum required throat depth (MRTD) at project driveways, include calculation of the MRTD**

There is an existing gate to the entrance to the property located on the north side of D'Agostini Road, with an address of 4941 on the gate fencing to the east of the driveway. The driveway throat length is 36 feet long, exceeding the 25 foot County minimum, and the 30 foot minimum threshold set forth by the Fire Marshall (see letter from Pioneer Fire Protection District (PFPD) Fire Marshall contained in Appendix). The project site driveway has adequate throat depth storage for even large emergency response vehicles. The width of the existing driveway is 22 feet, and exceeds the 20 foot minimum set forth by the PFPD.



**FIGURE 5. PROJECT ENTRANCE DRIVEWAY, DRIVEWAY THROAT DISTANCE**



## OSTR Item #6: Adequacy of the project site design to convey all vehicle types

The proposed project site driveway is able to convey construction equipment as needed during the initial construction phase of building the structures on the site. There will be a hammerhead parking lot / turn around area at the end of the driveway into the project site. A large 32 foot fire engine truck can navigate a complete turn-around using the proposed driveway and parking area. This same fire engine can also be in the throat of the gated driveway without blocking traffic on D'Agostini Road (throat length is 36 feet). The Pioneer Fire Protection District (PFPD) has reviewed and approved the initial review of the D'Agostini Road Improvement Grading Project. The Appendix contains the contents of this letter of approval for the project site and driveway to accommodate emergency fire response. All of the driveway, gate throat length, driveway width, and vertical clearances meet or exceed the thresholds set forth in the PFPD approval letter, dated March 11, 2021, from Kara Garrett, Fire Marshall.

## OSTR Item #7: Adequacy of sight distance on-site

A detailed sight distance analysis was conducted by Grant Johnson, TE at the intersection of Mt. Aukum Road and D'Agostini Road. This intersection represents the location where the project might have an impact to sight distance safety, if the sight distance situation were to be found deficient.

As part of the sight distance evaluation, a video recording of the driver's actual sight distance was made to document the real-world condition of how far a driver can see in front of them. It is assumed in sight distance evaluation that the relevant distance is the distance that travels a straight line from one driver's eye to the other driver's eye. This ensures that the stopping sight distance is relevant to how each driver sees the other driver in a real world condition. If there are any trees or bushes obscuring this direct line of sight, then this would be a potential sight distance deficiency if the distance available is less than the approved thresholds as outlined in the Caltrans criteria. Figure 6 shows the Caltrans stopping sight distance table.

The speed limit on Mt. Aukum Road is generally unposted in the area, assumed to be prima facie at 55 mph, but just to the north of D'Agostini Road there is a 45 mph speed zone through the Mount Aukum community along Mout Aukum Road.

The safe stopping sight distance criteria listed in the Caltrans Design Manual are based on certain assumptions in human driving behavior relating to "perception" time, and "reaction" time, along with a deceleration time once the driver's foot is on the brake and pressing. The design standards of the American Association of State Highway and Transportation Officials (AASHTO) allow 1.5 seconds for perception time and 1.0 second for reaction time<sup>6</sup>, a total of 2.5 seconds before the vehicle even begins to slow down. The Highway Design Manual's *Table 201.1, Sight Distance Standards*, is based on the 2.5 second AASHTO formula.

A 55 mph speed requires a stopping sight distance of 500 feet as per the Caltrans standards shown in Table 201.1, Sight distance Standards (based on AASHTO formula.).

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<sup>6</sup> Joseph E. Badger, [Human Factors: Perception and Reaction](#), at 1-2

Table 201.1 Sight Distance Standards			CHAPTER 200 GEOMETRIC DESIGN AND STRUCTURE STANDARDS	
Design Speed <sup>(1)</sup> (mph)	Stopping <sup>(2)</sup> (ft)	Passing (ft)	Topic 201 - Sight Distance	
10	50	---	<b>Index 201.1 - General</b>  Sight distance is the continuous length of highway ahead, visible to the highway user. Four types of sight distance are considered herein: passing, stopping, decision, and corner. Passing sight distance is used where use of an opposing lane can provide passing opportunities (see Index 201.2). Stopping sight distance is the minimum sight distance for a given design speed to be provided on multilane highways and on 2-lane roads where passing sight distance is not economical or obtainable. Stopping sight distance also is to be provided for all users, including motorists and bicyclists, at all elements of interchanges and intersections at grade, including private road connections (see Topic 504, Index 405.1, & Figure 405.7). Decision sight distance is used at major decision points (see Indexes 201.7 and 504.2). Corner sight distance is used at intersections (see Index 405.1, Figure 405.7, and Figure 504.3J).	
15	100	---		
20	125	800		
25	150	950		
30	200	1,100		
35	250	1,300		
40	300	1,500		
45	360	1,650		
50	430	1,800		
55	500	1,950		
60	580	2,100		
65	660	2,300		
70	750	2,500		
75	840	2,600		
80	930	2,700		
(1) See Topic 101 for selection of design speed. (2) For sustained downgrades, refer to advisory standard in Index 201.3				

FIGURE 6. CALTRANS STOPPING SIGHT DISTANCE STANDARDS

Figure 7 shows driver’s line of sight, eye-to-eye point of view for evaluating the sight distance in our analysis.

#### **Northbound Direction of Mt. Aukum Road.**

PRISM Engineering found that there is over 950 feet of available sight distance at the driver's eye level for traveling in a car going northbound on Mt. Aukum Road, to the drivers' eye of a vehicle stopped at the D'Agostini Road stop sign (as shown by the straight line view depicted by the yellow arrow in the photo below). This is more than adequate stopping sight distance, since the minimum required is 500 feet for 55 mph. Sight distance is not an issue for the NB direction of Mt. Aukum traffic approaching the D'Agostini Road intersection.



#### **Southbound Direction of Mt. Aukum Road.**

PRISM Engineering found that there is over 590 feet of available sight distance at the driver's eye level for a car going southbound on Mt. Aukum Road, to the drivers' eye in a vehicle stopped at the D'Agostini Road stop sign ahead. This is more than adequate stopping sight distance, since the minimum required is 500 feet for 55 mph which is the unposted prima facie speed limit here. The photo was taken from a section of Mt. Aukum Road where there is a cresting of the road so the elevation is flat at around 2,100 feet above sea level. However, this picture is taken just after an "End 45 MPH" speed limit sign for SB traffic just 650 feet before. Sight distance in any case is not an issue for the SB direction of traffic on Mt. Aukum approaching the D'Agostini Road intersection.



**FIGURE 7. SIGHT DISTANCE, MT AUKUM RD SOUTHBOUND AND NORTHBOUND**

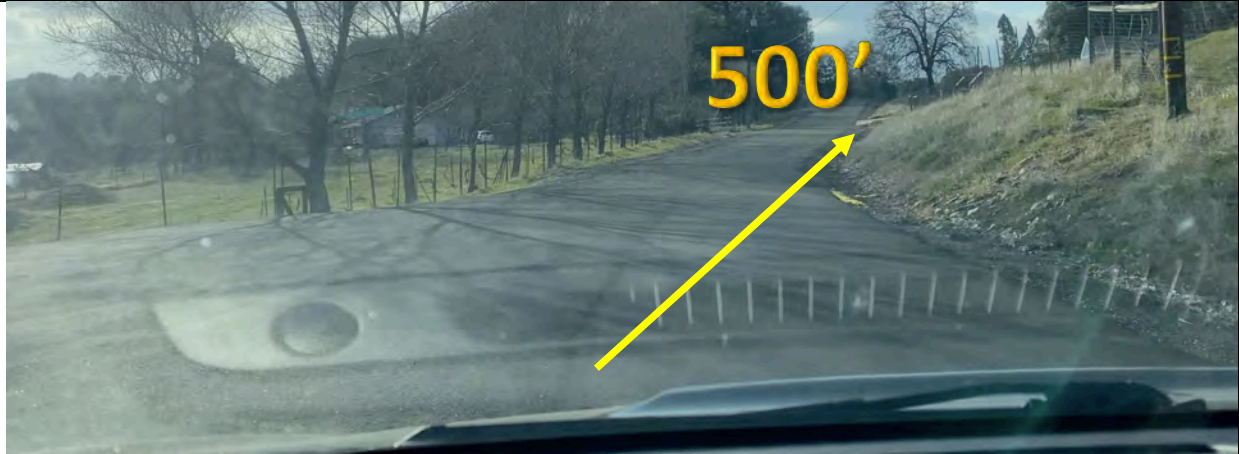
There are no sight distance issues on Mt Aukum Road at this location at or near D'Agostini Road.



An additional sight distance evaluation was made for the driveway of the project site along D'Agostini Road which is near Bertone Road (located about 2000 feet to the west of Bertone Road). This street is a residential street serving the residential homes in the area. Traffic volumes were observed to be very low, typical of a rural low density neighborhood street. Figure 8 shows this driveway which is gated and has a 36 foot throat which is large enough to store a large truck, or two vehicles. The width of the driveway is 22 feet, more than adequate for storage of vehicles even in both directions.



D'Agostini Road at Project Driveway, looking north



D'Agostini Road Approaching Project Driveway, looking west, has over 500 feet of Sight Distance

**FIGURE 8. SIGHT DISTANCE SURVEY FOR D'AGOSTINI ROAD AT PROJECT SITE**

There is adequate sight distance in all directions at this driveway, with vertical and horizontal curves while driving east there is 275 feet of stopping sight distance available from the driver's perspective to the project driveway. This is more than adequate for a 35 mph speed. Driving in the westbound direction there is over 500 feet of stopping sight distance available approaching the project driveway, exceeding

the standard Caltrans site distance threshold. There is no speed limit posted on this curving and hilly road, but in my opinion, 25 mph to 35 mile miles per hour is a safe range of speed, typical for what a driver would do in this rural neighborhood.

OSTR Item #8:  
Queuing analysis of “drive-through” facilities”

This project will not have drive-through facilities, and is a low-traffic impact farm use. The site is gated and will not be open to the public.

## PIONEER FIRE PROTECTION DISTRICT (PFPD) APPROVAL LETTER



### **PIONEER FIRE PROTECTION DISTRICT** **FIRE • RESCUE • EMS**

7061 Mt. Aukum Road/P.O. Box 128  
Somerset, California 95684  
Phone (530) 620-4444 • Fax (530) 620-4317  
[www.pioneerfire.org](http://www.pioneerfire.org)

3/11/2021

4941 D'Agostini Dr.  
Somerset, CA 95684

Re: D'Agostini Road Improvement Grading Project

Dear Jim Mault,

The Pioneer Fire Protection District (PFPD) has reviewed and approves the initial review of the above-referenced grading project and submits the following comments regarding the ability to provide this site with fire and emergency medical services consistent with the El Dorado County General Plan, State Fire Safe Regulations, as adopted by El Dorado County and the California Fire Code as amended locally. The Pioneer Fire Protection District reserves the right to update the following comments to comply with all current Codes, Standards, Local Ordinances, and Laws with respect to the official documented time of project application and/or building application to the County. Any omissions and/or errors in respect to this letter, as it relates to the aforementioned codes, regulations and plans, shall not be valid, and does not constitute a waiver to the responsible party of the project from complying as required with all Codes, Standards, Local Ordinances, and Laws.

The Fire Chief is authorized to modify any of the provisions of this standard upon application in writing by the owner, a lessee, or a duly authorized representative where there are practical difficulties in the way of carrying out the provisions of this standard, provided that the spirit of the standard shall be complied with and public safety is secured. The particulars of such modification and the decision of the Fire Chief shall be entered upon the records of the Pioneer Fire Protection District and a signed copy shall be furnished to the applicant.

Contact Fire Marshal Kara Garrett at the Pioneer Fire Protection District with any questions at 530-620-4445.

Sincerely,

A handwritten signature in black ink, appearing to read "Kara Garrett".

Kara Garrett  
Fire Marshal, Fire and Life Safety Director  
Pioneer Fire Protection District  
[kgarrett@pioneerfire.org](mailto:kgarrett@pioneerfire.org)  
Office: (530) 620-4445





## **PIONEER FIRE PROTECTION DISTRICT**

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#### **1. Address**

Address numbers. All new and existing buildings shall place and maintain approved numbers or address identification on the buildings so as to be plainly visible and legible from the street or road fronting the property. Approved numbers or address identification shall be placed prior to occupancy of all new buildings. Said numbers shall contrast with their background and shall be visible at all hours of the day and night by way of internal or external illumination. Numbers shall be a minimum of 4 inches high with a minimum stroke width of .5 inch. External source illumination shall have an intensity of not less than 5.0 foot-candles.

#### **2. Building under construction Addressing System**

Approved numbers or addresses shall be placed at each fire access road entry into and on each building within construction sites. Numbers shall be visible from at least 100 feet.

#### **3. Driveways**

Driveways for access to one- and two-family dwellings shall conform to the following criteria as applicable:

1. Driveways serving one parcel with no more than five structures shall be a minimum of twelve (12) feet in width. The Fire Chief may require up to twenty (20) foot wide driveway when more than five structures exist.
2. Roadways serving more than one parcel, but less than five parcels, shall be a minimum twenty (20) feet in width. Roadways serving five parcels or more shall be no less than 24 feet in width.
3. Vertical clearance shall be a minimum of fifteen (15) feet.
4. When the driveway exceeds 150 feet in length, provide a turnout at the midpoint. For driveways not exceeding 400 feet in length, the turnout may be omitted if full sight distance is maintained. If the driveway exceeds 800 feet in length, a turnaround shall be provided not greater than 50 feet from the structure.
5. When a driveway exceeds 300 feet in length, a turnaround shall be provided no greater than 50 feet from structure.
6. The driveway must be provided with an all-weather surface capable of supporting a 75,000 lb. vehicle loading. When the road grade exceeds ten (10) percent, the road shall be surfaced with asphalt or concrete.

#### **4. Roadway and Driveway Width**

Roadway width shall mean driving surface to face of curb or flow line or rolled gutter. All roadways and access roads shall be complete before any building construction. Roadways serving four or less parcels shall be no less than 20 feet in width. Roadways serving five parcels or more shall meet El Dorado County Standards but shall be no less than 24 feet in width. Driveways serving one parcel but no more than 5 structures shall be a minimum of 12 feet in width. Vertical clearance shall be 15 feet for the width of the road. For the purpose of this section, roadway width shall mean driving surface to face of curb or flow line of rolled gutter. Driveways exceeding 150 feet in length, but less than 800 feet in length, shall



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provide a turnout near the midpoint of the driveway. If driveway exceeds 800 feet, turnouts shall be no more than 400 feet apart. A turnaround shall be provided at all building sites on driveways over 300 feet in length and shall be within 50 feet of the building. All roadways and access roads shall be completed before any building construction.

#### **5. Driveway Bridges**

Bridges designed for major ingress/egress roads serving subdivisions or used as part of a fire apparatus access road shall be constructed and designed to meet standard, AASHTO HB-17. Bridges shall be no narrower than the driving portion of the road serving each end. The bridge or culvert crossing shall be designed for a live load of a minimum of 75,000 pounds gross vehicle weight. Vehicle load limits shall be posted at both entrances to bridges and culvert crossings.

#### **6. Driveway Grades**

In order to accommodate driveway grades in excess of sixteen (16) percent, the driveway shall be designed to have a finished surface of grooved concrete or rough asphalt to hold a 45,000 lb. traction load. The concrete grooves shall be ¼ inch wide by ¼ inch deep and ¾ inch on center. The road design shall be certified by a registered engineer and approved by the Fire Chief/Fire Marshal. Emergency Fire access roads and response routes 12% or more shall be approved by the Fire Chief or Fire Marshal.

#### **7. Driveway Radius**

The inside turning radius for an access road shall be 30 feet or greater. The outside turning radius for an access road shall be 50 feet or greater.

#### **8. Driveway Surface**

Driveway surfaces shall be paved or similar all weather hard packed approved surface, capable of supporting a 75,000 lb load.

#### **9. Driveway Turnarounds**

Turnarounds are required on driveways and dead-end roads as specified. Cul-de-sacs radius shall be 42 feet of driving surface, measured from face of curb or flow line of rolled curb. If a hammerhead/T is used, the top of the (T) shall be a minimum of 80 feet in length.

#### **10. Dry and Dead Vegetation Abatement**

Open areas around residential homes shall be maintained in a fire safe condition. The homeowner shall be responsible to remove dead and dry vegetation at least 100 feet or to the lot line from all non-fire resistive structures as per CFC, Sections 304.1.1; 304.1.2 and California Public Resource Code 4291. This includes all homes and outbuildings

#### **11. Gates/Access Control Devices**





## **PIONEER FIRE PROTECTION DISTRICT**

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#### **A. Installation Requirement**

Entrance roads (at the gate) shall have a minimum unobstructed width of fifteen (15) feet each lane if divided, or twenty (20) feet total width if not divided. An unobstructed vertical clearance shall not be less than fifteen (15) feet. Gates over a driveway shall have a minimum unobstructed width of fourteen (14) feet. The gate shall be a minimum of two (2) feet wider than the road/driveway surface. An unobstructed vertical clearance shall not be less than fifteen (15) feet.

Gates shall be inset off the roadway as to avoid stacking and to provide an area of refuge while the gate is operated and opened. This inset shall be a minimum of thirty (30) feet from the adjacent roadway or driveway edge. The key pad shall be placed within ten (10) feet of the gate. If the key pad is placed more than ten (10) feet from the gate, then the gate inset shall be increased respectively to accommodate the additional footage.

All automatic gates shall be equipped with a "Knox" emergency access override system that consists of a low security key activated switch located in accordance with Fire District requirements. All automatic gates shall also be equipped with both 3M Opticom Control device. The device shall be placed in a location allowing operation from 75 feet away. Exception: Single family R-3 Linear receiver device (approved by the Fire District) to allow remote activation by emergency vehicles: Shall be programmed to operate with the Fire Districts current transmitters. Contact local AHJ for transmitter frequencies. Exception: Single family R-3 Automatic gates shall be equipped with a mechanical release. Automatic gate loop systems located on the inside portion of the access roadway shall permit vehicular traffic to open the gate from the inside by driving over the loop. This process shall not take any special knowledge, actions or codes to open the gate to exit the area. The loop system shall also keep the gate open as long as vehicular traffic is passing through it. All automatic gates shall be designed to automatically open and remain in a fully opened position during power failures.

All gates creating a dead-end road in excess of one hundred fifty (150) feet in length shall be provided with approved provisions for the turning around of fire apparatus. The gradient for the fire apparatus access road shall not exceed the maximum approved by the Fire Department. The intent is to provide a level landing area on either side of the gate to allow emergency apparatus to be parked in a safe manner when it is necessary to exit the vehicle for manual gate activation. All automatic gates must reach the fully open position within a total time not to exceed one second for each foot total width. The receiving devices shall be installed so the signal from the transmitter will open the gate approximately 75 feet from the gate location. Exception: Single family R-3 Prohibited Devices: All required vehicle access openings shall provide both ingress and egress. Direction limiting devices, such as fixed tire spikes, are prohibited. No device may be used which will delay the ingress or egress of emergency responders. The total number of vehicle access control gates or systems, through which emergency equipment must pass to reach any address, shall not exceed one.

#### **12. Manual Gates**

Manual gates shall have a KNOX padlock installed for emergency access.

#### **13. Gated Entrances – Residential Lot**





## **PIONEER FIRE PROTECTION DISTRICT**

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Gate entrance on driveway to individual lots shall provide a clear open width at least two feet wider than the width of the driveway (normally a minimum width of 14 feet). Property owner should contact the Fire Prevention Division to determine the best option of providing Fire District access. The owner shall provide a code or key to access through the gate (key box). Electronically opened access gates shall be provided with a Model #3502 electronic override switch manufactured by the KNOX Company. Said switch shall interface with the key pad at the entry gate to provide fire apparatus access to the site. An acceptance test of the Knox access system shall be witnessed by the fire district prior to final approval of the project.

### **14. Gate Plans**

Plans for the installation of automatic gates on fire apparatus access roadways shall be submitted to the Pioneer Fire Protection District for approval prior to installation. The number and type of plans (paper or digital) shall be submitted per the direction of the Pioneer Fire Protection District (one full set).

### **15. Gates Testing and Acceptance**

Gates and access control equipment shall be inspected and tested by the Pioneer Fire Protection District prior to being placed into service.

## APPENDIX TRAFFIC COUNTS

<b>EL DORADO COUNTY</b> <b>DEPARTMENT OF TRANSPORTATION</b>									
Count Summary Beginning:					August 24, 2019				
Count Station:	1200078				Counter ID:	66			
City/Town:	Somerset				Mile Post:	8.80			
Road Name:	Mt Aukum Road				Location:	300 Ft. S. of Bucks Bar Rd.			
Lanes:	2				Direction:	NORTHBOUND			
Date	25	26	27	28	29	30	24	Weekly	Wk Day
Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
Time									
100	14	5	3	4	6	7	6	6	5
200	4	2	2	2	2	5	2	3	3
300	3	3	4	2	2	0	2	2	2
400	1	4	6	7	6	4	4	5	5
500	5	19	21	24	19	21	7	17	21
600	12	49	59	47	46	48	11	39	50
700	27	120	122	117	114	94	34	90	113
800	44	150	152	150	164	134	49	120	150
900	83	170	168	183	169	112	102	141	160
1000	111	130	132	117	128	119	122	123	125
1100	151	121	144	140	147	119	121	135	134
1200	126	118	123	114	117	143	149	127	123
1300	132	143	130	123	124	174	149	139	139
1400	131	120	115	105	132	141	148	127	123
1500	138	147	143	115	145	149	125	137	140
1600	135	152	148	168	174	144	144	152	157
1700	126	124	156	150	159	147	131	142	147
1800	113	102	142	111	131	139	141	126	125
1900	91	66	69	82	84	88	99	83	78
2000	87	56	50	61	63	77	83	68	61
2100	50	38	42	41	45	60	79	51	45
2200	20	30	14	25	25	25	58	28	24
2300	15	14	9	12	11	20	35	17	13
2400	10	8	10	13	12	17	13	12	12
Totals	1629	1891	1964	1913	2025	1987	1814	1889	1956
AM Peak Hr	11:00	9:00	9:00	9:00	9:00	12:00	12:00	9:00	9:00
AM Count	151	170	168	183	169	143	149	141	160
PM Peak Hr	3:00	4:00	5:00	4:00	4:00	1:00	1:00	4:00	4:00
PM Count	138	152	156	168	174	174	149	152	157

**TOTAL ADT: 3,921**

## APPENDIX: TRIP GENERATION SURVEYS

For Similar sized Cannabis Cultivation Projects (2 acre growing sites).

A weeklong traffic count was taken at driveway locations for two cannabis cultivation locations starting on June 19, 2020 and ending June 25, a full 7 day, 24 hour, hourly count summary at both locations. The summary of these two locations is shown below. The daily average from the survey was 27.7 trips per 2 acres of canopy site.

Location	# of 2880 SF Green houses	# of Acres of Canopy	Daily Trips Total							Daily Trips <b>WEEKDAY</b> Average	Daily Trips <b>WEEKEND</b> Average	Daily Trips <b>WEEKLY</b> Average
			M	T	W	T	F	S	S			
Farm #1: Esparto	6	2	10	67	24	22	24	10	6	29.4	8.0	23.3
Farm #2: Dunnigan	6	2	28	28	30	16	28	15	12	26.0	13.5	22.4
<b>Totals</b>	<b>12</b>	<b>4</b>	<b>38</b>	<b>95</b>	<b>54</b>	<b>38</b>	<b>52</b>	<b>25</b>	<b>18</b>	<b>55.4</b>	<b>21.5</b>	<b>45.7</b>
<i>Daily Trips per Greenhouse</i>										<b>4.6</b>	<b>1.8</b>	<b>3.8</b>
<i>Daily Trips per 2 ac of canopy (maxed out limit)</i>										<b>27.7</b>	<b>10.8</b>	<b>22.9</b>

For ITE Trip Rates comparison purposes to a 2 ac canopy site:

Daily Trips per <b>2 ac of Light Industrial</b> (ITE 110) @ 51.8 daily trips/ac	<b>103.6</b>
Daily Trips per <b>2 ac of Manufacturing</b> (ITE 140) @ 38.9 daily trips/ac	<b>77.8</b>

### SUMMARY:

Proposed Project will have 1 greenhouse in first two years, then gradually to 6 greenhouses, each being the typical 2,880 SF in size.

**Based on this, the project will have 4.6 daily trips on a weekday, and 1.8 on a weekend in the 1st two years, and gradually build up to 27.7 per day with full buildout.**

This new trip generation rate for **cannabis farming is approximately 27% of the Light Industrial ITE daily trip rate, and 36% of the ITE Manufacturing daily rate.**



## Appendix C

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### VMT Memorandum

## VMT MEMORANDUM

**Outdoor THC Cannabis Cultivation**

**4941 D'Agostini Road Somerset, CA 95634**

**Located In El Dorado County**

**Prepared for:**

**4941 D'Agostini Road Somerset, CA 95634**

**April 23, 2021**

**This VMT Memorandum**

**Authored by:**

**Grant P. Johnson, TE**



**Traffic Engineering & Transportation Planning**

*This Memorandum has  
been prepared and  
certified by Grant P.  
Johnson, TE, Principal.  
Lic #1453*



## Description of Project

The project seeks licenses for 87,120 sq.ft of outdoor full-term cultivation THC cannabis, and delivery only distribution. The project is located at 4941 D'agostini Dr. in Somerset, CA 95684, and has Parcel ID: 046-710-17-100. The Lot area is 46.53 Acres and is an existing agricultural operation growing grapes on the southernmost portion of the property. The property has an entrance and exit on D'Agostini Drive. The property has an existing residence, an existing well, and a security gate. The operation will have 4 full time and 5 to 6 seasonal temporary employees. Since the parcel has an existing agricultural operation (vineyard/grapes), the addition of commercial cannabis will create a de minimis amount of new traffic on D'Agostini Drive.

The trip generation of the project was developed in the On Site Transportation Review (OSTR) prepared for El Dorado County DOT dated April 23, 2021. In that report the following trip generation calculations shown in Table 1 were documented for both square footage as well as number of employees.

TABLE 1. TRIP GENERATION SUMMARY OF PROJECT, KSF\* OR EMPLOYEES

ITE Trip Generation Manual Trip Generation Period (110 Light Industrial)	ITE Trip Generation Rate per KSF GFA	KSF of Facility	Trips	Threshold Policy TC- Xe	Conclusion
<b>daily</b>	<b>4.96</b>	<b>0.98</b>	<b>4.9</b>	100	<i>4.9 &lt; 100, traffic study not needed</i>
a.m. peak hour	0.70	0.98	0.7	10	
p.m. peak hour	0.63	0.98	0.6	10	
ITE Trip Generation Manual Trip Generation Period	ITE Trip Generation Rate per EMPLOYEE	Number of EMPLOYEES	Trips	Threshold Policy TC- Xe	Conclusion
<b>daily</b>	<b>3</b>	<b>10</b>	<b>30</b>	100	<b>30 &lt; 100</b>

Source: El Dorado County DOT and PRISM Engineering. \*KSF=1,000 square feet

It can be seen from Table 1 that the project will generate a maximum of 30 daily trips based on using the employee metric in the calculation, and 4.9 daily trips based on KSF of the facility. Since these total daily trips are less than the 100 daily trips threshold set forth in the County's Policy TC-Xe, which if exceeded would trigger the need for a full traffic study instead of OSTR.



## VMT Significance Determination

The California Office of Planning and Research (OPR) Technical Advisory provides this direction concerning the evaluation of impacts for Vehicle Miles Traveled (VMT) for a project:

*Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact.*

*Per OPR's Technical Advisory, this determination is based on the following:*

*CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).). Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.*

This Memorandum details our findings of VMT transportation impacts based on trip generation of the project being estimated to be 30 trips per day (for 10 employees, the maximum total during seasonal harvest). This is based on a project description and site plan, as well as said / stated business operations (by applicant) for the cannabis farm cultivation project, and as detailed in the OSTR dated April 23, 2021. Our findings conclude that the project will generate "110 or fewer trips" per day, and in fact only will generate 30 or less trips per day.

## Conclusion

The project does not have a significant impact on vehicle miles traveled or transportation impact.

## Appendix D

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### Pest Management Plan

# Pest Management Plan

## April 4, 2021

### Single Source Solutions Inc.

#### Table of Contents

1.0 Introduction	4
2.0 Overview	4
2.1 Pests & Diseases of Concern	5
3.0 Monitoring	6
3.1 Monitoring for Pests	6
3.2 Monitoring pH & Electrical Conductivity (EC)	6
4.0 Physical Control	7
4.1 Exclusion	7
4.2 Mulching	8
4.3 Cover Cropping	8
4.4 Companion Planting	9
5.0 Environmental Control	9
5.1 Nutrient Management	9
5.2 Irrigation Management	10
5.3 Humidity & Temperature Management	11
6.0 Biological Control	11
6.1 Beneficial Insects	11
6.2 Beneficial Microbes	12
6.3 Compost Tea	12
6.4 Other Fertilizers	12
7.0 Chemical Control	13
7.1 Pesticide Management	13
7.2 State and County Requirements	14
7.3 Intended Use Pesticide Products	14

## 1.0 INTRODUCTION

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The State of California has required all applicants for cannabis cultivation licensing to submit a pest management plan as part of their cultivation plan. The following plan fulfills pest management planning requirements, as presented in the California Code of Regulations for Cannabis Cultivation (Cal Code Regs. tit. 3 § 8106, a.3, b.2)

*“A pest management plan that shall include, but not be limited to, the following:  
(A) Product name and active ingredient(s) of all pesticides to be applied to cannabis during any stage of plant growth; and  
(B) Integrated pest management protocols, including chemical, biological and cultural methods the applicant anticipates using to control or prevent the introduction of pests on the cultivation site.”* (Cal Code Regs. tit. 3 § 8106)

This plan was prepared for Single Source Solutions Innovations and serves as a required pest management planning document for CalCannabis and El Dorado County cultivation licensing. This plan is for a 87,120 ft<sup>2</sup> outdoor cultivation site containing beds and fabric pots containing a potting media/native mineral soil conglomerate.

## 2.0 OVERVIEW

---

This pest management plan is an integrated ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of management techniques. This integrated pest management (IPM) plan contains five primary components listed below. These identify protocols for individual pest, noxious weeds, and plant disease management. The practices herein are designed to pro-actively respond to the threat of pests and disease in the agricultural system.

**The IPM plan has five primary components:**

- 1) Monitoring
- 2) Physical Control\*
- 3) Environmental Control\*
- 4) Biological Control
- 5) Chemical Control

*\* Physical and environmental controls are combined and referred to as “cultural controls.”*

This report summarizes the management tactics within these five components which Single Source Solutions has identified as part of their farm IPM protocol. Each section contains a description of the activity and definition of any important terms, followed by a list of protocols in that category that will be used Single Source Solutions



## 2.1 Pests & Diseases of Concern

Below is a comprehensive list of pests and diseases of concern that the following IPM plan addresses.

Pests and Diseases of Concern
Large Mammals
Deer
Livestock
Rodents (mice, rats, moles, voles, gopher)
Mites and Insects
Broad mites - <i>Polyphagotarsonemus latus</i>
Cucumber Beetle
Fungus Gnat (Diptera)
Hemp Borer
Leaf hoppers
Root Aphid
Root Feeding Nematodes
Russet Mites - <i>Aculops</i> spp.
Sow Bug / Pill Bug (Isopoda)
Spittlebugs (Homoptera)
Symphylum (soil arthropod)
Termite (Isoptera)
Thrips ( <i>Heliothrips haemorrhoidalis</i> , <i>Frankliniella occidentalis</i> , <i>Thrips tabaci</i> )
Two-spotted spider mites, <i>Tetranychus urticae</i> , (and other Tetranychidae)
Whiteflies ( <i>Trialeurodes vaporariorum</i> , <i>Bemisia tabaci</i> , <i>B. argentifolii</i> )
Disease
Botrytis / "Grey Mold" (fungal disease)
Fusarium (fungal disease)
Phoma "Brown Leaf Spot" / "Stem Canker" (fungal disease)
Phytophthora (Root and crown rots, fungal disease)
Powdery Mildew (fungal disease)
<i>Pseudomonas syringae</i> (bacterial disease)
Pythium (Damping off)
Rhizoctonia Root Rot (fungal disease)
Sclerotinia "Hemp Canker" / "White Mold" (Fungal stem disease)
Septoria "Leaf Spot" (fungal leaf disease)
Stemphylium "Grey Leaf Spot" / "Leaf Blight"(fungal disease)

## 3.0 MONITORING

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There are two principal areas that require monitoring:

- Pests
- pH and Electrical Conductivity (EC)

### 3.1 MONITORING FOR PESTS

---

Pest monitoring protocols are stated below. A sample pest monitoring sheet is provided in Appendix A.

- **“Scouting”** is defined as: “Walking around each growing area once a week and recording pest and pathology observations in a pest monitoring sheet.”
- **“Hot spot”** is defined as: “A sub-section of the larger growing area where pests are either first observed, or where pest numbers are observed to be increasing to threatening levels.”

#### Pest Monitoring Protocols

Pest Monitoring
Weekly scouting of growing areas for pests and pathology.
Records pest / pathology on monitoring sheets during scouting.
Will maintain a seasonal record of pest monitoring sheets.
Use data from pest monitoring sheets to make early pest management decisions.
Random sampling of leaves for microscope monitoring.
Will monitor for broad mites, spider mites, and russet mites using a microscope.
Will use sticky cards to monitor for aphids, thrips, fungus gnats, and whiteflies.
For early detection and intervention of pests, "hot spots" will be flagged in the field.

### 3.2 MONITORING PH & ELECTRICAL CONDUCTIVITY (EC)

---

Regular field and lab testing will be used to determine nutrient availability. Protocols listed below.

#### pH& EC monitoring protocols

Monitoring pH & Electrical Conductivity (EC)
Soil samples will be submitted to a agricultural testing laboratory for nutrient testing at least once per production cycle.

EC and pH will be determined by a saturated paste test in the field.
pH will be checked on irrigation water and recorded.
All synthetic mixes and biological teas will have the pH monitored before being applied to the crop.
Shall maintain an annual record of soil test results.
Will monitor pH weekly or monthly, or as needed.
Will monitor EC weekly or monthly, or as needed.
All pH and EC meters will be cleaned between usage and calibration maintained and checked on a consistent basis.
pH and EC will be recorded using a calibrated meter on the farm.
Will keep a seasonal record of pH and EC measurements.
To confirm adequate uptake of nutrients a plant tissue test will be done during vegetative stage by a certified agricultural testing lab.

## 4.0 PHYSICAL CONTROL

---

Physical controls are grouped into four categories:

- Exclusion
- Mulching
- Cover crop
- Companion plants

### 4.1 EXCLUSION

---

Exclusion means any tactic that works to keep pests out of your garden. These practices are grouped by their approach:

- Quarantine
- Sanitation
- Pruning
- Weeding
- Removal of plant residue
- Screens and air filters

## Exclusion Protocols

Physical Control
Exclusion
Clones and new plant material will be quarantined for at least two weeks.
Personnel will be required to inspect clothing before entering growing areas.
All personnel must clean hands after (or use disposable gloves while,) handling diseased or infested plant material.
All tools and equipment will be sanitized between grow sites.
All tools and equipment will be sanitized after handling diseased or infested plant material.
To avoid spreading contamination healthy plants will be worked on before sick or diseased plants.
Will not handle any non-infected plants after handling diseased or infested plants.
Plants will be pruned to improve air circulation.
Yellowing and injured plant leaves will be pruned.
Pruned plant material will be removed from the growing area to a designated waste area or facility by following the cannabis waste management plan described in the California Code of Regulations for Cannabis Cultivation (Cal Code Regs. tit. 3 § 8108)
Will maintain weeds around plants and beds.
Will have a 10-30' noxious weed-free zone surrounding growing areas.
Strategically will target and remove weed-plant host species (ex. nightshades and morning-glories) because they can harbor russet mites and other pests.
All crop residues will be removed after harvest.
All compost piles and plant residues will be kept 30' or more from growing areas.
Trap (minus rodenticides)
Install deer fencing

## 4.2 MULCHING

---

The State Water Resources Control Board requires that all mulch be weed-free. Mulching protocols listed below.

### Mulching Protocols

Mulching
Will use a compost mulch.
Will use a straw or hay mulch.
Will use hulls or barks as mulch.
Will use a plastic mulch.
Mulch will be maintained and replaced as needed.

## 4.3 COVER CROPPING

---

Cover crop protocols stated below.



### Cover Cropping Protocols

Cover Cropping
A winter cover crop will be planted to maintain soil health during non-production months.
A spring cover crop will be planted once temperatures are warm enough and maintained for soil health during non-production months.
Legumes (nitrogen-fixers) will be part of the cover crop to help provide nitrogen back in the soil.
Will use a mixture of grains and legumes in cover crop mix.
Will use cover crops to break up soil compaction or heavy clay soils.
Will use cover crops to scavenge phosphorous.
Companion plants will be added in the cover crop mix.

## 4.4 COMPANION PLANTING

---

Companion planting protocols listed below.

### Companion Planting Protocols

Companion Planting
Companion plants will be planted around the growing parameter.
Will use a cover crop with companion plants.
Will plant companion plants species that attract pollinators.
Will incorporate leguminous (nitrogen-fixing) companion plants.
Will plant companion plant species to attract beneficial predators.
Companion plants will be used to repel pests.

## 5.0 ENVIRONMENTAL CONTROL

---

Environmental controls make changes to the plant environment and fall into the following three categories:

- ❖ Nutrient management
- ❖ Irrigation
- ❖ Humidity and temperature

### 5.1 NUTRIENT MANAGEMENT

---

Nitrogen Management Plans will be recorded monthly and submitted annually per the State Water Board Regulations (State Water Resources Control Board, 2017.) SWRCB requirements are summarized below:

- Provide site description(s).
- List the sources of nitrogen used (bulk materials, dry fertilizers, and liquid fertilizers).
- Calculate monthly nitrogen use per canopy acre (dissolved in irrigation water, originating in soil amendments, and applied fertilizers).
- Describe nitrogen storage, use, and disposal practices; and procedures to limit excessive fertilizer application.

Regular field and lab nutrient management protocols stated below.

### Nutrient Management Protocols

Nutrient Management
Soil samples will be submitted to a certified agricultural testing laboratory for nutrient testing at least once per production cycle.
To confirm adequate uptake of nutrients a plant tissue test will be done during vegetative stage by an agricultural testing lab.
Will use lab nutrient results to inform pre-production amendment decisions.
Will use lab nutrient results to inform mid-cycle amendment decisions.
Keep and maintain a annual record of soil test results.
Will monitor pH weekly or monthly.
Will monitor EC weekly or monthly.
Will use pH and EC to inform fertilization decisions.
Keep and maintain a seasonal record of pH and EC measurements.
Exact fertilizer need is calculated based on lab nutrient results.
Will use organic (non-synthetic) bulk amendments.
To better determine the timing and location of fertilizer applications, nutrient analysis will be done.
Will actively amend or manage the soil to improve soil nutrient holding capacity.
Will maintain a record of all fertilizer inputs used.
Will maintain an annual record of nitrogen fertilizer use.

## 5.2 IRRIGATION MANAGEMENT

---

The State Water Resources Control Board requires that you:

- Record daily water amounts used for irrigation.
  - These will be calculated using a measuring device, or by calculating the irrigation system rates and duration of time watered.

Moisture monitoring should follow all irrigation activities, as well as any precipitation events. Monitoring should determine the depth and uniformity of wetness and track the soil as it dries

to an appropriate point. Listed below are irrigation management and moisture monitoring protocols.

### **Irrigation Management Protocols**

<b>Irrigation Management</b>
Will monitor soil moisture content daily or as needed.
Soil probes will be used to monitor soil moisture.
Irrigation decisions will be made based on soil moisture content and climate.
Will maintain a written / physical irrigation schedule and update as needed.
No irrigating on, immediately before, or after a rainfall event to conserve water usage.
Will be responsive to plant biological factors by watering more when the plant is young.
Will actively amend or manage the soil to improve soil water retention and drainage.
Will use drip irrigation as a water conservation practice.
Irrigation monitoring device(s) will be installed to monitor daily water use.

## **5.3 HUMIDITY & TEMPERATURE MANAGEMENT**

---

Humidity and Temperature management protocols listed below.

- ‘Forecasting’ is defined as “management that predicts the arrival of pests or pathogens, or an increase in their severity.”

### **Humidity & Temperature Management Protocols**

<b>Humidity &amp; Temperature Management</b>
Will plant outdoors while temp's are below 72°F to prevent Fusarium and Phoma.

## **6.0 BIOLOGICAL CONTROL**

---

Biocontrol practices intentionally increase the populations of predators to combat pests and diseases.

For the purposes of this document:

- ‘Predators’ are defined as insects, nematodes, fungi, or bacteria.

### **6.1 BENEFICIAL INSECTS**

---

Beneficial insects will be used throughout the growing cycle per protocols stated below.

## Beneficial Insects Protocols

Beneficial Insects
Will use beneficial insects on crops.
Will release beneficial insects on nursery crops.
Will use preventative early-season releases.
Will utilize and maintain a season-long preventative release schedule.
Will refrain from preventative pesticide spraying.
Will use beneficial insects as a first response to pest detection.
Monitor for beneficial insects as part of a regular pest scouting program.
Plant companion plants to attract beneficial insects.
Will refrain from spraying any pesticide product for at least a week prior to beginning beneficial insect releases.

## 6.2 BENEFICIAL MICROBES

---

Beneficial microbes will be used throughout the season per protocols stated below.

### Beneficial Microbes Protocols

Beneficial Microbes
Will inoculate growing media with mycorrhizae ( <i>Glomus</i> sp.).
Will inoculate growing media with <i>Bacillus</i> sp.
Will inoculate growing media with <i>Trichoderma harzianum</i> .
Use nematodes ( <i>Steinernema</i> sp.) preventatively as a cutting/clone dunk, soil drench, or spray.
Use microbial sprays to prevent pests ( <i>Beauveria bassiana</i> , <i>Isaria fumosorosea</i> , <i>Bacillus thuringiensis</i> ).
Use microbial sprays to prevent fungal or bacterial diseases ( <i>Bacillus subtilis</i> , <i>Reynoutria sachalinensis</i> , <i>Bacillus amyloliquefaciens</i> , <i>Gliocladium virens</i> , <i>Trichoderma harzianum</i> ).
Use beneficial microbe products (bio-fungicides) as a first response to pathogen detection.
Use beneficial microbe products (bio-pesticides or bio-fungicides) to address pest or pathogen problems before attempting to use a traditional pesticide product (i.e. horticultural oils, neem, insecticidal soaps, sulfur, etc.).

## 6.3 COMPOST TEA

---

There are two types of compost tea applications: a tea extract for soil drenching, and an aerated tea for foliar spraying. Compost teas will be used based on the protocols stated below.

## 6.4 Other Fertilizers

Other fertilizers approved for Cannabis use will be used to supplement Compost Teas. Any foliar applied material will be tested for heavy metals, pesticides and other contaminants that render the cannabis unsaleable.



## Compost Tea Protocols

Compost Tea
Spray compost tea weekly during season.
Will soil drench compost tea weekly during season.
Spray compost tea bi-weekly during season.
Soil drench compost tea bi-weekly in season.
Maintain separate compost tea / biological spraying equipment (tanks, pumps, etc.).

## 7.0 CHEMICAL CONTROL

Chemical controls are products classified as pesticides or fungicides. Products used will follow all guidelines from the California Department of Pesticide Regulation (CA-DPR) document “Legal Pest Management Practices for Cannabis Growers in California” (CA-DPR, 9 October 2017). The DPR document lists 36 active ingredients that are acceptable for use on cannabis, in addition the product must be listed for use on “Flowers & Flowering Plants” (i.e. ornamental plants, many nursery plants, cut flowers, etc.).

### 7.1 PESTICIDE MANAGEMENT

For the purposes of this document:

- ‘Economic thresholds’ (“ETs” and “action thresholds”) are identified as pest or disease population levels at which the cost of applying pesticides is less than the value of the crop loss they prevent.

Pesticide protocols stated below.

#### Pesticide Management Protocols

Management Tactics
Will apply chemical controls first on a "hot spot" basis (limited area).
Will develop and use economic thresholds for managing and making chemical control decisions.
Will maintain separate spraying equipment for non-biological chemical pesticide products.
Will first use beneficial microbe products (bio-pesticides or bio-fungicides) to address pest or pathogen problems before attempting to use a traditional pesticide product (i.e. horticultural oils, neem, insecticidal soaps, sulfur, etc.).
Will only spray pesticide products when wind speed is under 10 mph.
All employees who will be applying pesticides will have protective gear available.
All labels and safety data sheets for products used will be made available to employees.

## 7.2 STATE AND COUNTY REQUIREMENTS

---

The CA-DPR and other regulatory agencies including the Environmental Protection Agency (EPA) have mandated certain practices that reduce the risks inherent with pesticide use. These practices are listed below:

### Legally Required Protocols for Chemical Control

County, State and EPA Requirements
Will adhere to the CA-DPR and CAC guidelines of approved chemical pesticide products.
Will adhere to the labeled instructions on all pesticide products.
Will store all pesticide products together in a secure location that meets storage guidelines.
Will contain any chemical leaks and immediately clean up any spills.
Will apply the minimum amount of product necessary to control the target pest.
Will prevent offsite drift.
Will not apply pesticides when pollinators are present.
Will not allow drift to reach flowering plants attractive to pollinators.
Will not spray directly onto surface water, or allow pesticides to drift to surface water by spraying only when wind is blowing away from surface water bodies.
Will not apply pesticides when they may reach surface water or ground water (for example, before a rain event).
Only use properly labeled pesticides. If no label is available consult the CA-DPR.
Will maintain a record of all products used (including biopesticides and biofungicides); the areas that were treated, and the volume of product used.
Will submit pesticide use records to the state monthly (CalAgPermits).

## 7.3 INTENDED USE PESTICIDE PRODUCTS

---

The following products were identified by the producer as those that will most likely be used. The producer understands that pesticide use must be reported to the state monthly, and that all products must meet the standards identified by the CA-DPR.

The Pesticide list will be modified based on the recommendation of the El Dorado County Agriculture Dept.

### Pesticides

Grandevo, Venerate, Aza Sol, Azaguard, BioCeres WP, Botanigard, Dr Zymes Eliminator, Green Cleaner, Tough Love, Plant Therapy, M Pede, Nuke Em, Physan 20, Procidic2, Pyganic, Suffoil-X Trifecta Crop Control

### Fungicides

Regalia, Suffoil-X, Trilogy, Trifecta Crop Control, Actinovate, Bio Works Cease, Dr Zymes Eliminator, Green Cure, MilStop

## **Appendix A – Monitoring Documents**

## pH & EC (TDS) Measurements

Date	Time	Initials	pH	EC/TDS unit: _____



# IPM Monitoring Sheet

Date	Site Name	Time	Crop	Growth Stage							
Weather / field observations:											
Growing Section	1	2	3	4	5	6	7	8	9	10	Total
Pests											
Aphids											
Larva											
Adults											
Fungus Gnats											
Root Aphid											
Thrips											
Larva											
Adults											
Whiteflies											
Larva											
Adults											
Notes:											
Growing Section	1	2	3	4	5	6	7	8	9	10	Total
Pests for the Microscope											
Broad Mite											
Russet Mite											
Spider Mites											
Notes:											
Growing Section	1	2	3	4	5	6	7	8	9	10	Total
Beneficial Insects											
Rove Beetle											
Predator Mite: _____											
Predator Mite: _____											
Other: _____											
Notes:											

## Appendix E

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### Odor Report



## DRAFT TECHNICAL MEMORANDUM

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**To:** Rodney Miller

**Date:** July 21, 2021

**From:** Ray Kapahi *RK*  
Tel: 916-687-8352  
Tel: 916-687-8352  
E-Mail: [ray.kapahi@gmail.com](mailto:ray.kapahi@gmail.com)

**Subject:** Analysis of Odor at the Proposed Outdoor Cannabis Cultivation Located at 4941 D'Agostini Drive in Somerset (El Dorado County), California

---

### INTRODUCTION AND SUMMARY

Environmental Permitting Specialists (EPS) has completed its review of potential odors at your proposed outdoor cannabis cultivation site in Somerset. It is our understanding the outdoor cultivation site would be located at 5840 Stephanie Court in Somerset. The maximum area for cultivation will be 87,120 square feet. The cultivation area would be located between 104 feet and 981 feet from the nearest property lines. A site map showing the cultivation area and distances to the property lines is shown in Figure 1.

EPS used an air dispersion model, 1 year (2019) of hourly wind and temperature data at Somerset and on-site measurements of odor intensity at other locations to conduct this analysis. Data from 4 other outdoor cannabis and hemp cultivation facilities and one Tedlar bag sample were reviewed as part of the current analysis. Odor measurements taken at 0.75 acre outdoor cultivation site in Yolo County were used as baseline odors to predict odors for the D'Agostini property lines.

The results of our analysis indicate that maximum odor intensity along the property lines would range from below 1 DT to 14.97 DT. The highest odor intensity occurs along the Southwest portion of the property where the separation between the cultivation area and the property lines range from 104 to 208 feet.

Since there is a potential for odor intensity exceeding El Dorado County's limit of 7 DT, EPS recommends the installation of an odor control system along a portion of the Southwestern property line to mitigate the odors.

This Technical Memorandum presents the methodology, data and assumptions used in this analysis. These are described in detail below.

## SCOPE AND METHODOLOGY OF ODOR ANALYSIS

The overall methodology used in this analysis is to use an atmospheric dispersion model to predict the dilution of odors as they migrate away from the outdoor cultivation area. By calculating the relative concentration of odors adjacent to the cultivation area and at the property line(s), we can determine the dilution ratio defined as odor concentration at the cultivation area divided by concentration at the property line(s).

For example, if the maximum concentration at the cultivation area is 5,000 micrograms per cubic meter (ug/m<sup>3</sup>) and the relative concentration at the property line 2,000 ug/m<sup>3</sup>, the dilution ratio would equal:

$$\text{Dilution Ratio} = \frac{5,000 \text{ ug/m}^3}{2,000 \text{ ug/m}^3} = 2.5$$

In other words, the odors would be diluted by a factor of 2.5 as they migrate from the cultivation area towards the property line.

The dilution factor is used along with measurements at other outdoor cannabis cultivation sites to predict odor intensity at the D'Agostini property lines. This methodology was reviewed by the staff at El Dorado County Air Quality Management District (AQMD) to confirm that this approach would be acceptable. The District agreed with this approach as noted in their August 28, 2020 letter to Aaron Mount at El Dorado County Planning.

## Modeling Methodology

We used the EPA and AQMD recommended AERMOD dispersion model (Version 19191) along with one year (2019) of hourly wind data for Somerset. The data (known as MM5) is derived from weather satellites to calculate winds and other parameters for all locations in the continental US. The data used was prepared by Lakes Environmental (Waterloo, Canada)<sup>1</sup>.

The cultivation site was modeled as a single ground based area source. Concentrations were calculated using a 10 meter grid using an emission rate of  $1.00 \times 10^{-4}$  grams/sec-square meter. See Figure 2.

---

<sup>1</sup> Lakes Environmental. Waterloo, Canada. Information on the development of local wind data based on the MM5 for Somerset can be found at: [https://www.weblakes.com/services/met\\_data.html#aermetmm5](https://www.weblakes.com/services/met_data.html#aermetmm5)



The model results are concentrations in terms of micrograms per cubic meter at each grid location averaged over an 1-hour. These concentrations are meaningful only in a relative sense to help establish the dilution pattern. It is recognized that the averaging time for odors is a few minutes, not 1 hour. Typically, peak concentrations over a few minutes are many times greater than those over 1 hour. However, the ratio of concentrations and the dilution factor will remain the same whether averaged over a few minutes or 1 hour averaging time.

Finally, we note that the maximum predicted concentration varies with both the distance and the direction from the cultivation site. Generally, the concentration decreases with distance from the cultivation site. Figures 4 and 5 illustrate the spatial distribution of 1-hour relative concentration. These figures show that the highest 1-hour relative concentration (based on 8,760 hours that were modeled) occur East of the property.

### Baseline Odor Used in the Analysis

We used odor measurements taken at a Yolo County outdoor cannabis site. This outdoor site covers 0.75 acres and is located at 22945 County Road 23, Esparto. At the time the measurements were taken, the plants were 2 weeks away from harvesting. Odor measurements were taken September 22, 2020 that indicated odor intensity of 15 DT. However, we noted that there were brief periods when odor intensity was above 15 but were not fully captured by the Nasal Ranger. We estimated the odor intensity to be closer to 20 DT and this is the value used in the current analysis. A complete documentation of the September 22<sup>nd</sup> odor survey is attached.

### CALCULATION OF ODOR INTENSITY AND RESULTS

The calculation of odor intensity at the property lines is as follows:

$$\text{Odor Intensity at Property Line} = \frac{\text{Baseline Odor Intensity (DT)}}{\text{Dilution Factor}}$$

For example, the odor intensity at the Southwestern property line (See Figure 6) would equal:

$$\frac{20 \text{ DT}}{1.34} = 14.97 \text{ DT}$$

The results for the closest property lines is summarized on the next page.

Location	Distance to Property Line		Maximum Conc.	Conc. At Property Line	Lowest Dilution Ratio	Fenceline DT
	(ft)	(m)				
South	534	162.8	7,437	361	20.60	0.97
North	981	299.1	57,391	6,500	8.83	2.27
Eastern Property Line	415	126.5	99,624	23,667	4.21	4.75
SW Property Line	104	31.7	65,896	36,397	1.81	11.05
NW Property Line	208	63.4	76,555	32,956	2.32	8.61
Baseline DT	20					

Note: The Northern property line lies outside the modeling grid. The relative odor concentration was estimated based on data at the Northern edge of the modeling grid.

The odor intensity at portions of the Southwestern and Northwestern property lines would exceed the County's threshold of 7 (See Figure 7). As a result, odor mitigation along this property line is recommended.

Once a permit has been issued and cannabis cultivation proceeds, EPS staff will be available to conduct odor monitoring at your property to confirm that odors do not exceed the County limit of 7 DT.

## FIGURES

Figure 1: Site Map

Figure 2: Modeling Grid

Figure 3: Contours of Relative Concentrations

Figure 4: Contours of Relative Concentration (close-up)

Figure 5: Display of Numerical Concentration

Figure 6: Calculation of Dilution Factor

Figure 7: Summary of Results

Figure 1  
Site Map



Figure 2  
Modeling Grid



Figure 3

# Contours of Relative 1-Hour Concentrations

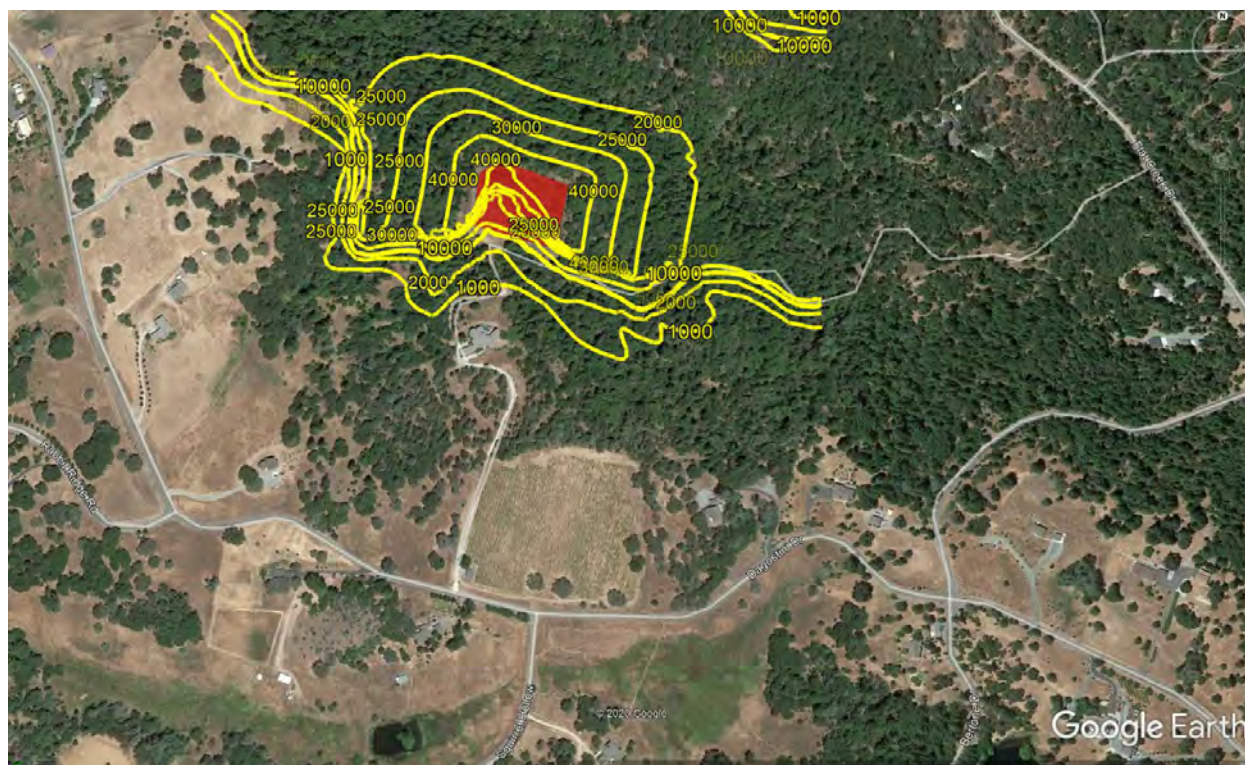




Figure 4

Contours of Relative Concentration (close-up)

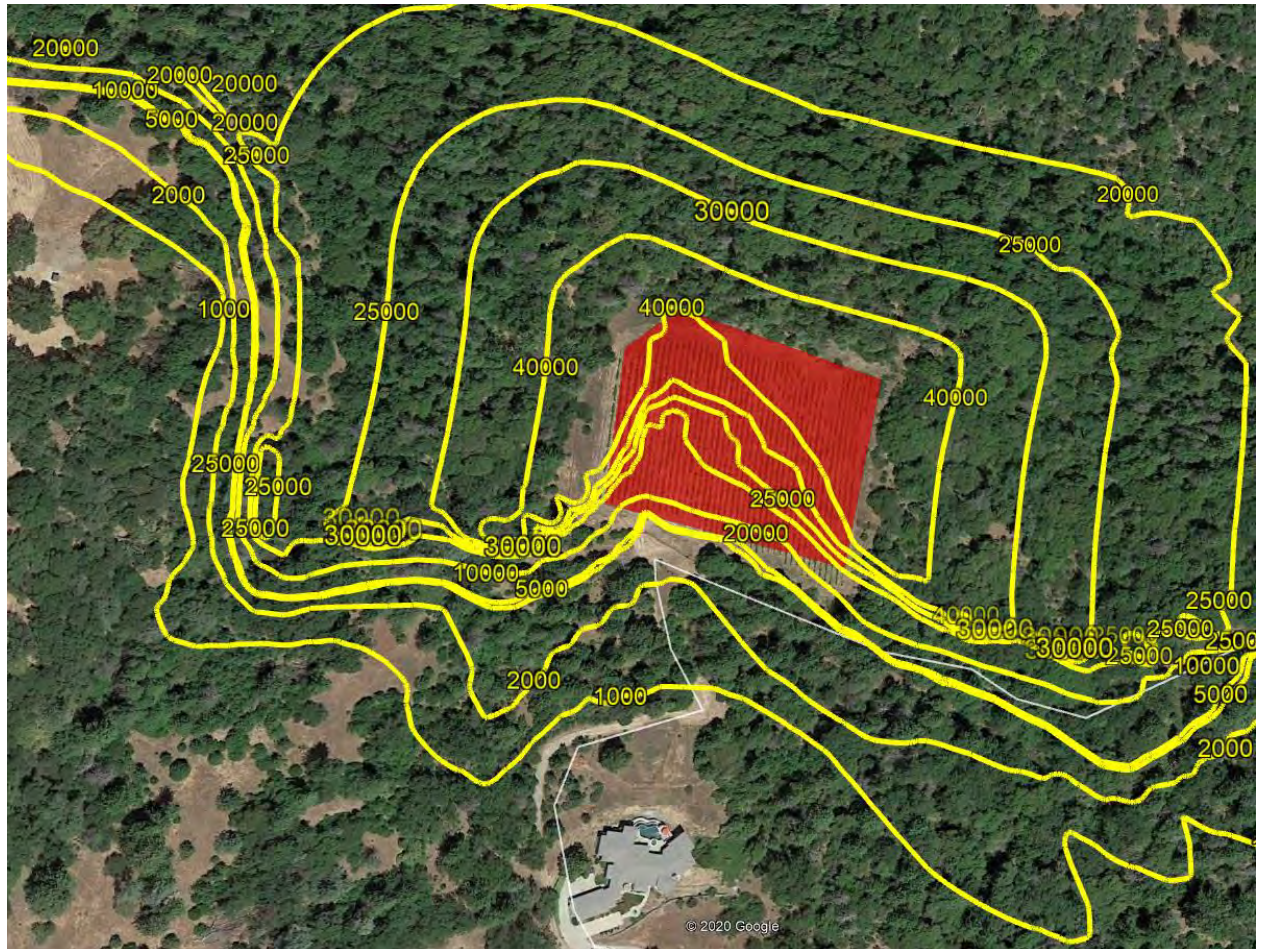




Figure 5

Numerical Values of Relative Concentration

*(in micrograms per cubic meter)*





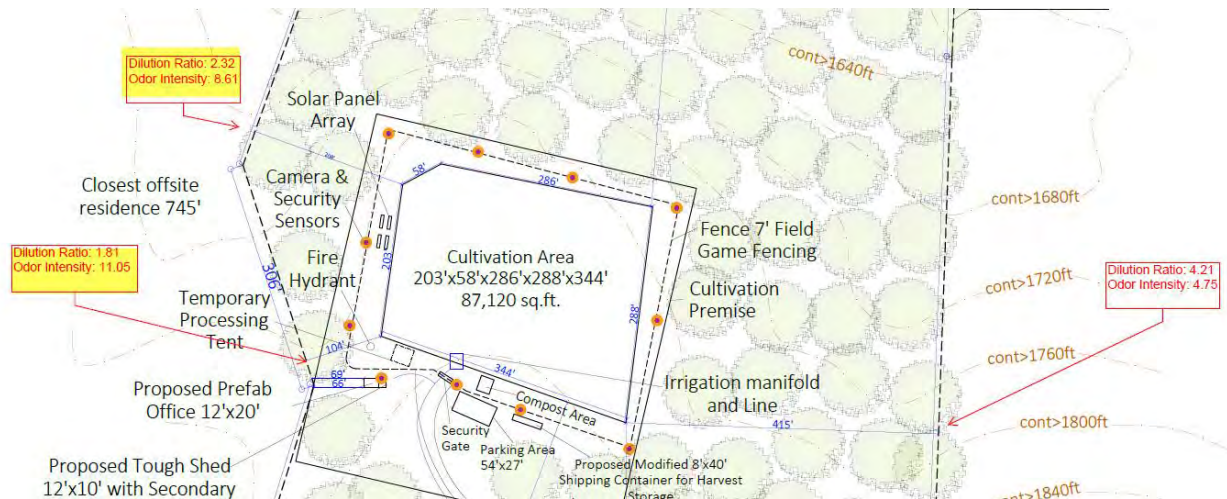
Figure 6

Sample Calculation of Dilution Factor at Southwest  
Property Line (104 feet from Canopy)



Figure 7

## Summary of Results



## Figure 7...Continued

### Summary of Results

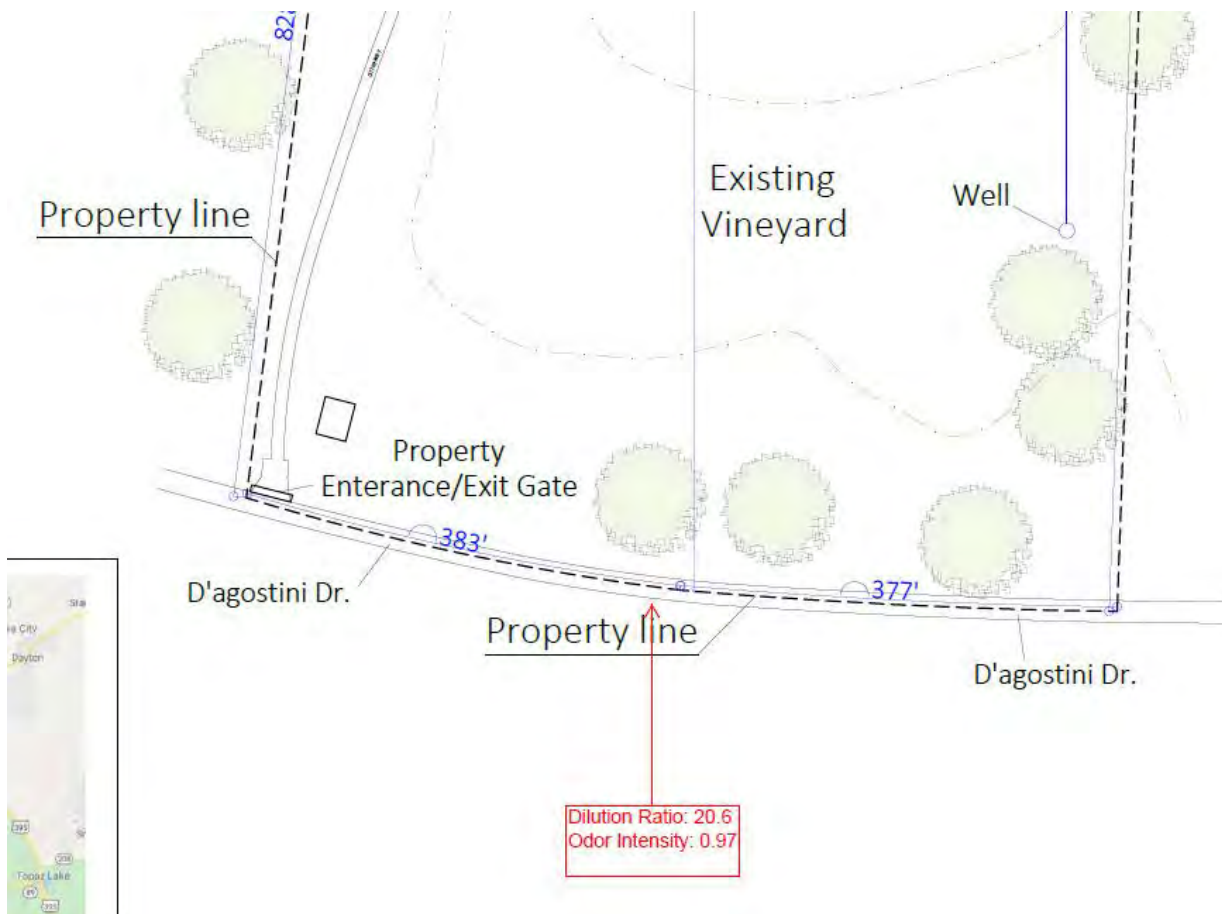
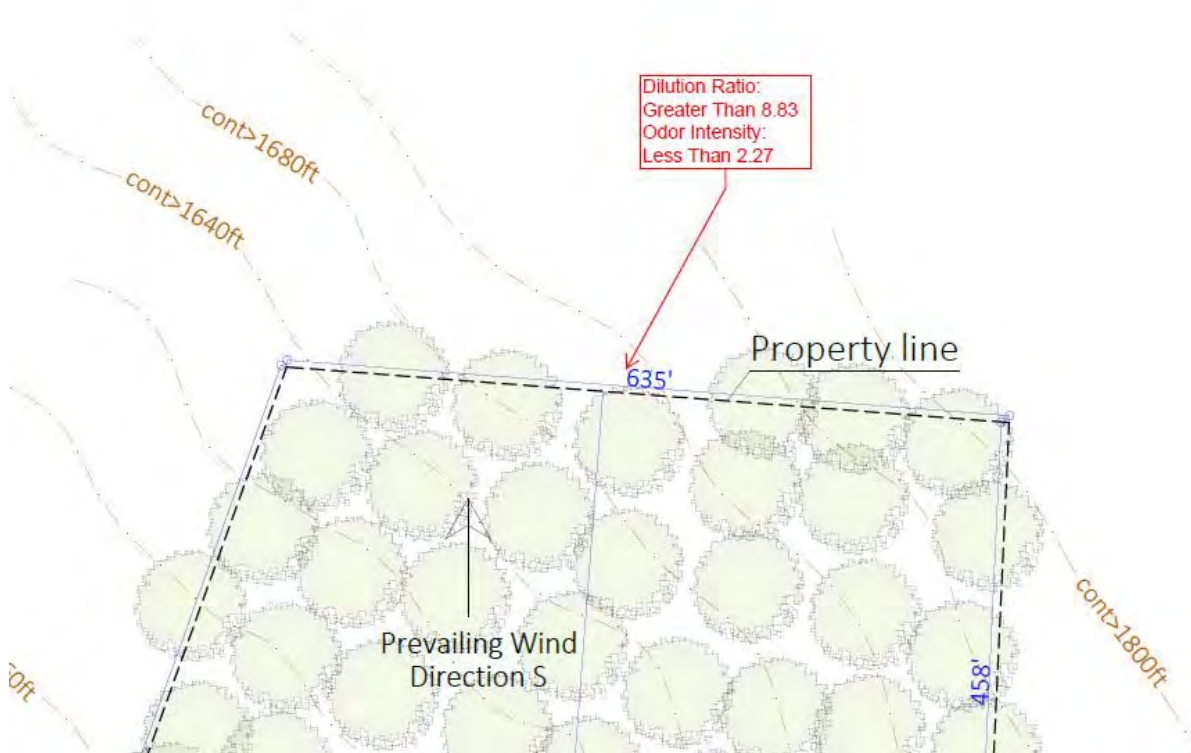


Figure 7...Continued  
Summary of Results





## ATTACHMENT

Yolo County Cannabis Site for Baseline Odor Measurements

September 22, 2020



COUNTY OF YOLO  
CANNABIS TASK FORCE  
120 W. Main Street, Suite C  
Woodland, CA 95695  
Telephone: (530) 406 4800

CULTIVATION LICENSE : PR0063595

LICENSE FOR CANNABIS CULTIVATION  
NON-TRANSFERABLE

SUBJECT TO ALL CONDITIONS OF YOLO COUNTY CODE OF ORDINANCES TITLE 5, CHAPTER 20  
THIS LICENSE MUST BE POSTED IN A CONSPICUOUS PLACE

## CANNABIS CULTIVATION LICENSE

**ISSUED TO:**

CAPAY VALLEY INC

**CONTACT:**

CAPAY VALLEY INC  
430 W CREEKSIDE CIR  
DIXON, CA 95620

DATE OF ISSUE: 2/19/2020

DATE OF EXPIRATION: 12/31/2020

**LOCATED AT:**

22945 CR 23  
ESPARTO, CA 95627

APN: 047-060-006

License Type: YEAR ROUND CULTIVATION LIC 1ST (1/4 ACRE)

Total Cultivation Area: 3/4 ACRE (32,670 sq ft)

**General Conditions of approval of this Cannabis Cultivation License are listed below:**

- Operations must comply with Yolo County's Ordinance on Marijuana Cultivation (Title 5, Chapter 20 of the Yolo County Code).
- This license supersedes Business License #12343 and is issued for cultivation only.
- Use of utilities and structures must be fully permitted under local authority.
- Licensee must maintain compliance with applicable requirements of the State Water Resources Control Board.
- Licensee must obtain and maintain in good standing a State license for cannabis cultivation.
- Licensees shall not commingle product with other cultivators or transfer marijuana to other cultivation sites, including a collocated site.
- This license constitutes a revocable privilege. Licensees have the burden of proving qualifications for a license at all times.
- Licensee shall permit Yolo County Staff the entry and inspection of all areas of the cultivation site.

**Special Conditions:**

Licensee must communicate to anyone coming on-site, including employees and contract labor, verbally and in writing through signage, that safe driving practices while traveling to and from the site must be followed. Verified complaints on reckless driving may result in the issuance of a Notice of Violation.

Susan Strachan  
Cannabis Policy and Enforcement Manager

Under federal and state law, compliance with disability access laws is a serious and significant responsibility that applies to all California building owners and tenants with buildings open to the public. You may obtain information about your legal obligations and how to comply with disability access laws at the following agencies: The Division of the State Architect at [dgs.ca.gov/dsa/Home.aspx](https://dgs.ca.gov/dsa/Home.aspx), The Department of Rehabilitation at [rehab.cahwnet.gov](https://rehab.cahwnet.gov), and The California Commission on Disability Access at [ccda.ca.gov](https://ccda.ca.gov).

Yolo County Dept. of Community Services Code Enforcement Unit 120 W. Main St, Ste. C Woodland, CA 95695 (530) 406-4800









## Odor Measurements

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Date	Time	Wind Speed	Wind Direction	Temp	Relative Humidity		Nasal Ranger Reading							
2	9/22/2020	9:45	(MPH)	(Dir From)	(F)	(%)		60	30	15	7	4	2	<2	ND
3															
4	9/22/2020	9:55	INOP	INOP	79.1	55.6					X				
5	9/22/2020	9:58	INOP	INOP	79.5	54.6							X		
6	9/22/2020	10:00	INOP	INOP	81.3	52.4						X			
7	9/22/2020	10:10	INOP	INOP	80	47.6					X				
8	9/22/2020	10:12	INOP	INOP	78.8	48.7				X					
9	9/22/2020	10:15	INOP	INOP	81.3	45.9						X			
10	9/22/2020	10:16	INOP	INOP	81.3	44.8							X		
11	9/22/2020	10:17	INOP	INOP	81.4	43.5							X		
12	9/22/2020	10:18	INOP	INOP	81.4	42.9						X			
13															
14															
15															

# Excerpts of Weather Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
1	Location	22945 County Road 23, Esparto California																
2	Device Name	Kestrel 5500																
3	Device Model	KESTREL_5500L																
4	Serial Number	2486826																
5	DRMATTED DATE_TIN	Altitude	Dew Point	Density	Altitude	Wind Chill	Direction - True	Headwind	Heat Stress Index	Crosswind	Wind Speed	Relative Humidity	Direction - Mag	Psychro	Wet Bulb Temperature	Station Pressure	Temperature	Barometric Pressur
6	YY-MM-DD HH:MM.S	ft	°F	ft	°F	°	mph	°F	mph	mph	%	°	°F	°F	inHg	°F	inHg	
7	9/22/2020 10:15	291	65	2,057	82.8	***	***	84.9	***	0	55	***	***	70.5	29.69	82.8	29.69	
8	9/22/2020 10:15	291	65.2	2,067	82.9	***	***	85.3	***	0	55.2	***	***	70.7	29.69	82.9	29.69	
9	9/22/2020 10:15	291	65.4	2,080	82.9	***	***	85.3	***	0.9	55.2	***	***	70.7	29.69	83.1	29.69	
10	9/22/2020 10:15	295	65.4	2,090	83.1	***	***	85.6	***	0	55	***	***	70.9	29.69	83.2	29.68	
11	9/22/2020 10:15	291	65.6	2,095	83.3	***	***	86	***	0	55.4	***	***	71.1	29.69	83.3	29.68	
12	9/22/2020 10:15	295	65.6	2,092	83.1	***	***	85.6	***	0	55.6	***	***	71.1	29.68	83.1	29.68	
13	9/22/2020 10:16	295	64.5	2,040	82.4	***	***	84	***	0	54.6	***	***	70.2	29.69	82.5	29.68	
14	9/22/2020 10:16	296	62.8	1,988	81.9	***	***	82.8	***	0	52.4	***	***	68.9	29.68	81.9	29.68	
15	9/22/2020 10:16	296	61.3	1,963	81.7	***	***	82.2	***	0	50.1	***	***	68	29.68	81.7	29.68	
16	9/22/2020 10:16	296	60.2	1,951	81.5	***	***	81.3	***	0	48.3	***	***	67.3	29.68	81.6	29.68	
17	9/22/2020 10:16	296	59.4	1,928	81.3	***	***	81	***	0	47.4	***	***	66.9	29.68	81.4	29.68	
18	9/22/2020 10:16	296	58.9	1,894	80.8	***	***	80.4	***	0	47.3	***	***	66.6	29.68	80.9	29.68	
19	9/22/2020 10:16	295	58.4	1,837	79.9	***	***	79.3	***	0	47.6	***	***	65.8	29.68	80	29.68	
20	9/22/2020 10:16	295	57.8	1,771	79	***	***	78.1	***	0	48.2	***	***	65.3	29.68	79.1	29.68	
21	9/22/2020 10:16	296	57.8	1,753	78.6	***	***	77.9	***	0	48.7	***	***	65.1	29.68	78.8	29.68	
22	9/22/2020 10:16	295	57.8	1,739	78.4	***	***	77.7	***	0	49	***	***	65.1	29.69	78.6	29.68	
23	9/22/2020 10:16	291	58	1,746	78.6	***	***	77.9	***	0	49	***	***	65.1	29.69	78.7	29.68	
24	9/22/2020 10:16	291	58.2	1,773	79	***	***	78.3	***	0	48.8	***	***	65.5	29.69	79.1	29.68	
25	9/22/2020 10:16	291	58.4	1,798	79.5	***	***	79	***	0	48.5	***	***	65.7	29.69	79.5	29.69	
26	9/22/2020 10:16	291	58.6	1,825	79.9	***	***	79.3	***	0	48.2	***	***	66	29.69	80	29.69	
27	9/22/2020 10:16	288	58.8	1,852	80.2	***	***	79.7	***	0	47.9	***	***	66.2	29.69	80.3	29.69	
28	9/22/2020 10:16	291	59	1,874	80.6	***	***	80.2	***	0	47.7	***	***	66.4	29.69	80.7	29.68	
29	9/22/2020 10:16	295	59.2	1,891	80.8	***	***	80.4	***	0	47.7	***	***	66.6	29.69	80.9	29.68	
30	9/22/2020 10:16	288	59.3	1,899	81	***	***	80.8	***	0	47.7	***	***	66.7	29.69	81.1	29.69	
31	9/22/2020 10:16	253	59.5	1,867	81.1	***	***	81	***	0	47.8	***	***	66.9	29.73	81.2	29.73	
32	9/22/2020 10:16	310	59.6	1,946	81.3	***	***	81.1	***	0	47.7	***	***	66.9	29.67	81.3	29.67	
33	9/22/2020 12:15	321	59.6	1,963	81.3	***	***	81.1	***	0	47.6	***	***	66.9	29.66	81.4	29.65	
34	9/22/2020 12:15	81	59.1	1,662	81.3	***	***	81	***	0	46.8	***	***	66.7	29.91	81.4	29.91	
35	9/22/2020 12:15	56	58.4	1,625	81.3	***	***	80.6	***	0	45.7	***	***	66.4	29.94	81.4	29.94	



# *Certificate of Completion*

*Richard Ensminger*

Completed the "ODOR SCHOOL"® course

## Nasal Ranger Inspector

Odor Assessment & Measurement for Ambient Odors

This course prepares the individual to make odor observations and investigations, to record pertinent information, and to report the data and findings to management or officials. (3.5TCH)



01/07/2020

[www.fivesenses.com](http://www.fivesenses.com)





## *DRAFT*

# TECHNICAL MEMORANDUM

---

**To:** Michael Pinette  
Single Source Solution, Inc.

**Date:** August 11, 2023

**From:** Ray Kapahi *RK*  
Tel: 916-687-8352  
Tel: 916-687-8352  
E-Mail: [ray.kapahi@gmail.com](mailto:ray.kapahi@gmail.com)

**Subject:** Revised Analysis of Odor at the Proposed Cannabis Cultivation Located at  
4941 D'Agostini Drive in Somerset (El Dorado County), California

---

### INTRODUCTION AND SUMMARY

Environmental Permitting Specialists (EPS) completed an analysis of odors at the proposed cannabis cultivation site located at 4941 D'Agostini Drive, Somerset on July 21, 2021. That analysis was based on an outdoor cannabis cultivation with a maximum area of 87,120 square feet. The analysis indicated that odors at the property lines would range from 1 dilution to threshold (DT) to 14.97 DT. Since the maximum allowable odor intensity under Eldorado County Ordinance 5110 (5)(D) is 7 DT, the proposed project would not comply with the County's odor limits from cannabis cultivation.

Since the 2021 analysis, the project has been revised from outdoor cultivation to cultivation using hoop house and a smaller area of outdoor cultivation. The current project would use eight hoop houses and an outdoor area approximately 100 feet x 240 feet. Each hoop house would be 75 feet x 30 feet and would be equipped with a carbon filtration system that would reduce odor intensity to below 7 DT. Information on the carbon filter is attached. The revised site map showing the location of hoop houses and the outdoor cultivation areas is shown in Figure 1.

As with the 2021 analysis, EPS used an air dispersion model, 1 year (2019) of hourly wind and temperature data at Somerset and on-site measurements of odor intensity at other locations to conduct this analysis as described in the July 21, 2021 Draft Technical Memorandum to M. Rodney Miller.

The results of the current analysis indicate that maximum odor intensity along the property lines would range from below 6.2 DT to 2.81 DT. The highest odor intensity occurs along the Southwest portion of the property where the separation between the outdoor cultivation area and the property lines range is approximately 190 feet.

Since the calculated odor intensity is below El Dorado County's limit of 7 DT, the project would comply with El Dorado County's Ordinance 5110(5)(D).

This Technical Memorandum presents the methodology, data and assumptions used in this analysis. These are described in detail below.

## SCOPE AND METHODOLOGY OF ODOR ANALYSIS

The overall methodology used in this analysis is to use an atmospheric dispersion model to predict the dilution of odors as they migrate away from the outdoor cultivation area. By calculating the relative concentration of odors adjacent to the cultivation area and at the property line(s), we can determine the dilution ratio defined as odor concentration at the cultivation area divided by concentration at the property line(s).

For example, if the maximum concentration at the cultivation area is 5,000 micrograms per cubic meter (ug/m<sup>3</sup>) and the relative concentration at the property line 2,000 ug/m<sup>3</sup>, the dilution ratio would equal:

$$\text{Dilution Ratio} = \frac{5,000 \text{ ug/m}^3}{2,000 \text{ ug/m}^3} = 2.5$$

In other words, the odors would be diluted by a factor of 2.5 as they migrate from the cultivation area towards the property line.

The dilution factor is used along with measurements at other outdoor cannabis cultivation sites to predict odor intensity at the D'Agostini property lines. This methodology was reviewed by the staff at El Dorado County Air Quality Management District (AQMD) to confirm that this approach would be acceptable. The District agreed with this approach as noted in their August 28, 2020 letter to Aaron Mount at El Dorado County Planning.

## Modeling Methodology

As in the 2021 odor analysis, we used the EPA and AQMD recommended AERMOD dispersion model (Version 22112) along with one year (2019) of hourly wind data for Somerset. The data (known as MM5) is derived from weather satellites to calculate winds and other parameters

for all locations in the continental US. The data used was prepared by Lakes Environmental (Waterloo, Canada)<sup>1</sup>.

The cultivation site was modeled as a single ground based area source. Concentrations were calculated using a 10 meter grid using an emission rate of  $1.00 \times 10^{-4}$  grams/sec-square meter. See Figure 2.

The model results are concentrations in terms of micrograms per cubic meter at each grid location averaged over 1-hour. These concentrations are meaningful only in a relative sense to help establish the dilution pattern. It is recognized that the averaging time for odors is a few minutes, not 1 hour. Typically, peak concentrations over a few minutes are many times greater than those over 1 hour. However, the ratio of concentrations and the dilution factor will remain the same whether averaged over a few minutes or 1 hour averaging time.

Finally, we note that the maximum predicted concentration varies with both the distance and the direction from the cultivation site. Generally, the concentration decreases with distance from the cultivation site. Figures 4 and 5 illustrate the spatial distribution of 1-hour relative concentration. These figures show that the highest 1-hour relative concentration (based on 8,760 hours that were modeled) occur East of the property.

### Baseline Odor Used in the Analysis

We used odor measurements taken at a Yolo County outdoor cannabis site. This outdoor site covers 0.75 acres and is located at 22945 County Road 23, Esparto. At the time the measurements were taken, the plants were 2 weeks away from harvesting. Odor measurements were taken September 22, 2020 that indicated odor intensity of 15 DT. However, we noted that there were brief periods when odor intensity was above 15 but were not fully captured by the Nasal Ranger. We estimated the odor intensity to be closer to 20 DT and this is the value used in the current analysis. A complete documentation of the September 22<sup>nd</sup> odor survey is attached.

### CALCULATION OF ODOR INTENSITY AND RESULTS

The calculation of odor intensity at the property lines is as follows:

$$\text{Odor Intensity at Property Line} = \frac{\text{Baseline Odor Intensity (DT)}}{\text{Dilution Factor}}$$

For example, the odor intensity at the Southwestern property line (See Figure 6) would equal:

$$\frac{20 \text{ DT}}{3.24} = 6.17 \text{ DT}$$

---

<sup>1</sup> Lakes Environmental. Waterloo, Canada. Information on the development of local wind data based on the MM5 for Somerset can be found at: [https://www.weblakes.com/services/met\\_data.html#aermetmm5](https://www.weblakes.com/services/met_data.html#aermetmm5)

The results for the closest property lines are summarized below and shown in Figure 7.

Location	Distance to Property Line		Maximum Conc.	Conc. At Property Line	Lowest Dilution Ratio	Fenceline DT
	(ft)	(m)				
North	< 1000	< 300	58,407	> 9738.9	< 6.00	< 3.33
Eastern Property Line	500	152.4	56,441	7,939	7.11	2.81
SW Property Line	190	57.9	64,944	20,043	3.24	6.17
Western Property Line	310	94.5	32,391	10,037	3.23	6.20
Baseline DT	20					

Note: The Northern property line lies outside the modeling grid. The relative odor concentration was estimated based on data at the Northern edge of the modeling grid.

Once a permit has been issued and cannabis cultivation proceeds, EPS staff will be available to conduct odor monitoring at your property to confirm that odors do not exceed the County limit of 7 DT.



Figure 1  
Site Map

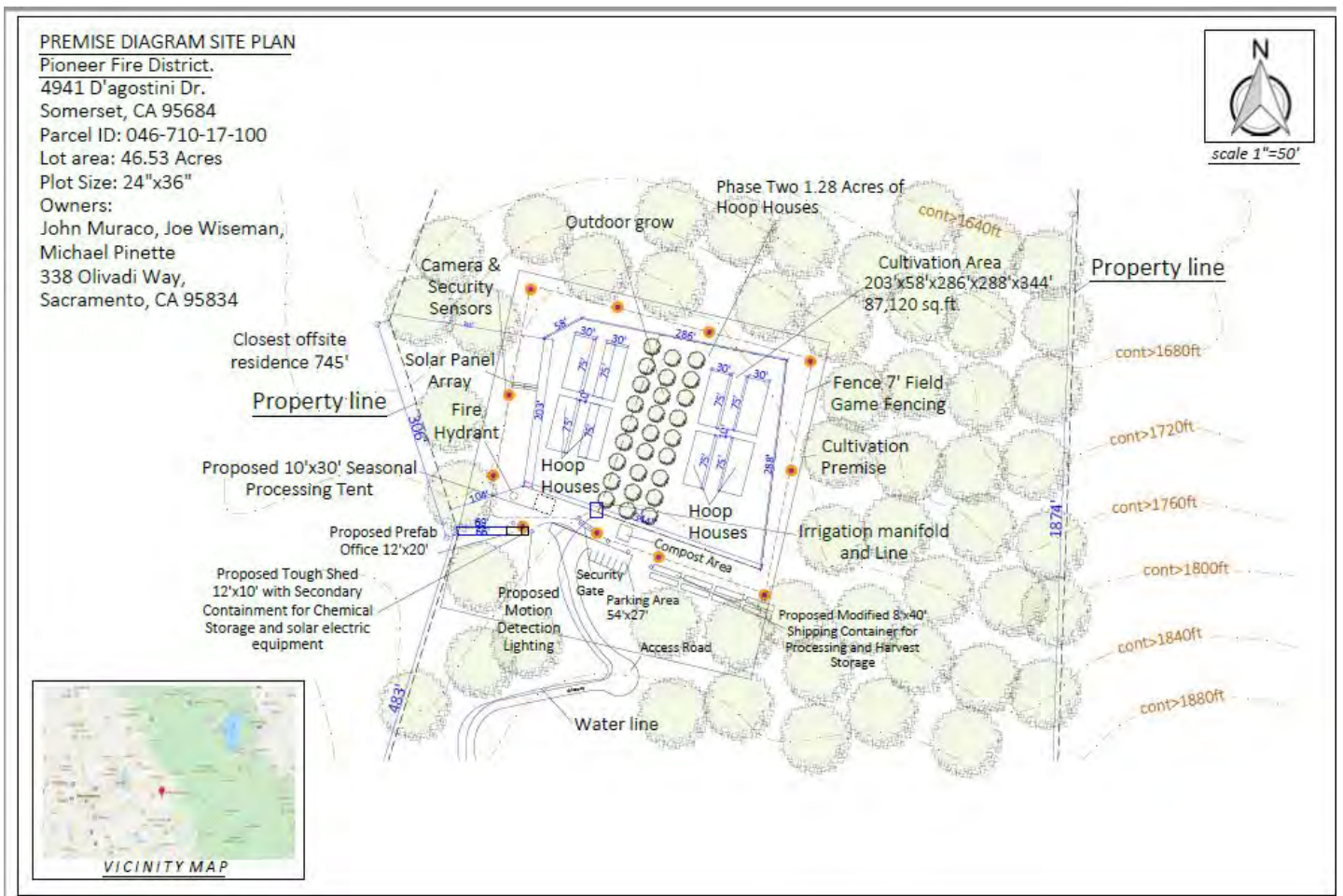


Figure 2

## Modeling Grid

*(The Red Rectangle Represents the Outdoor Canopy)*





Figure 3

Contours of Relative Odor Concentration

*(in micrograms per cubic meter)*



Figure 4

## Contours of Relative Concentration (close-up)

*(in micrograms per cubic meter)*

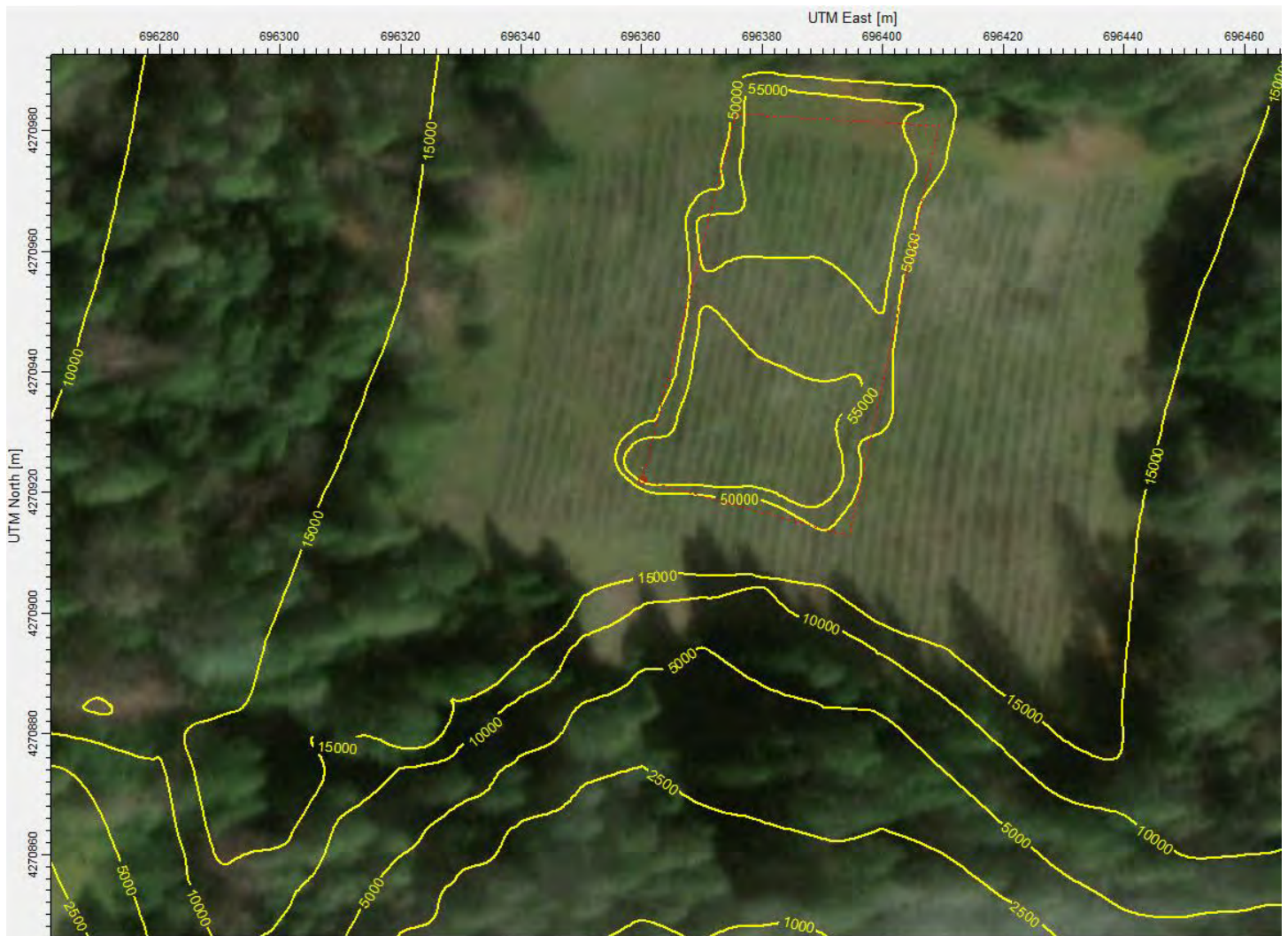
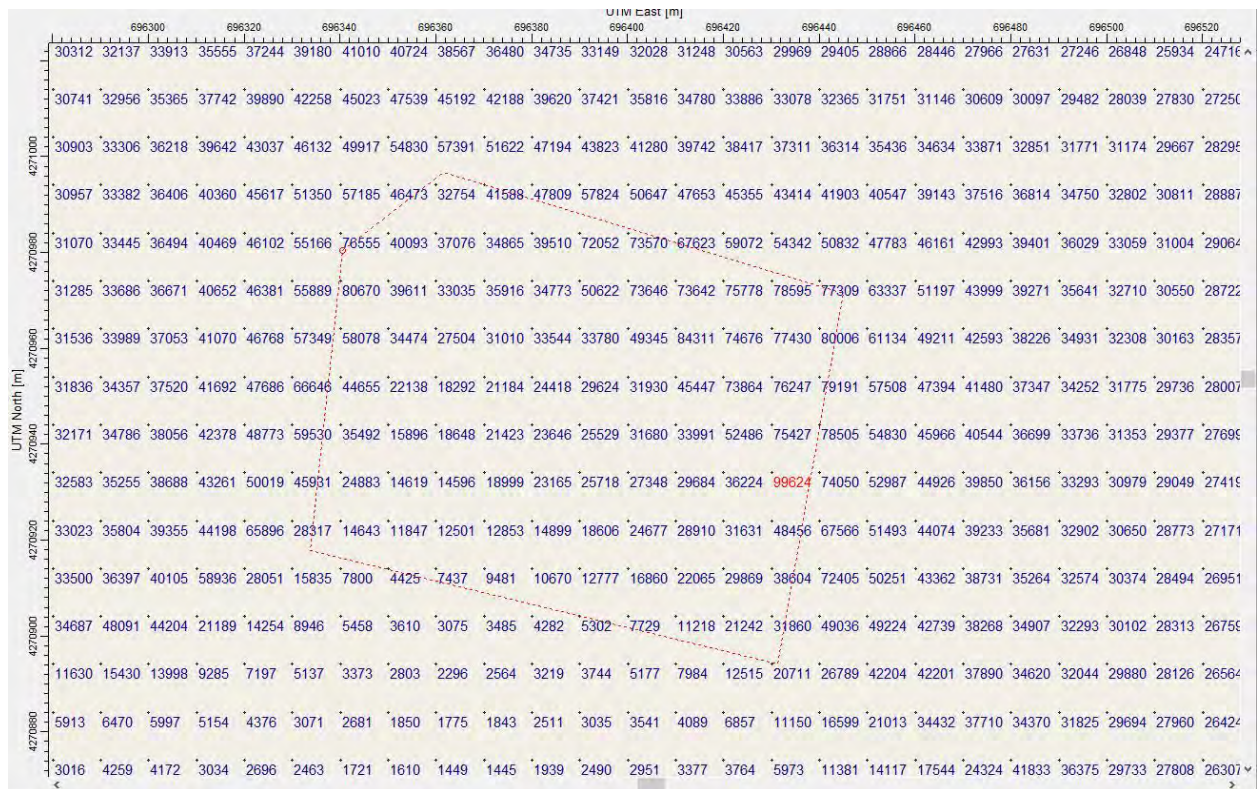




Figure 5

## Numerical Values of Relative Concentration

*(in micrograms per cubic meter)*



# Figure 6

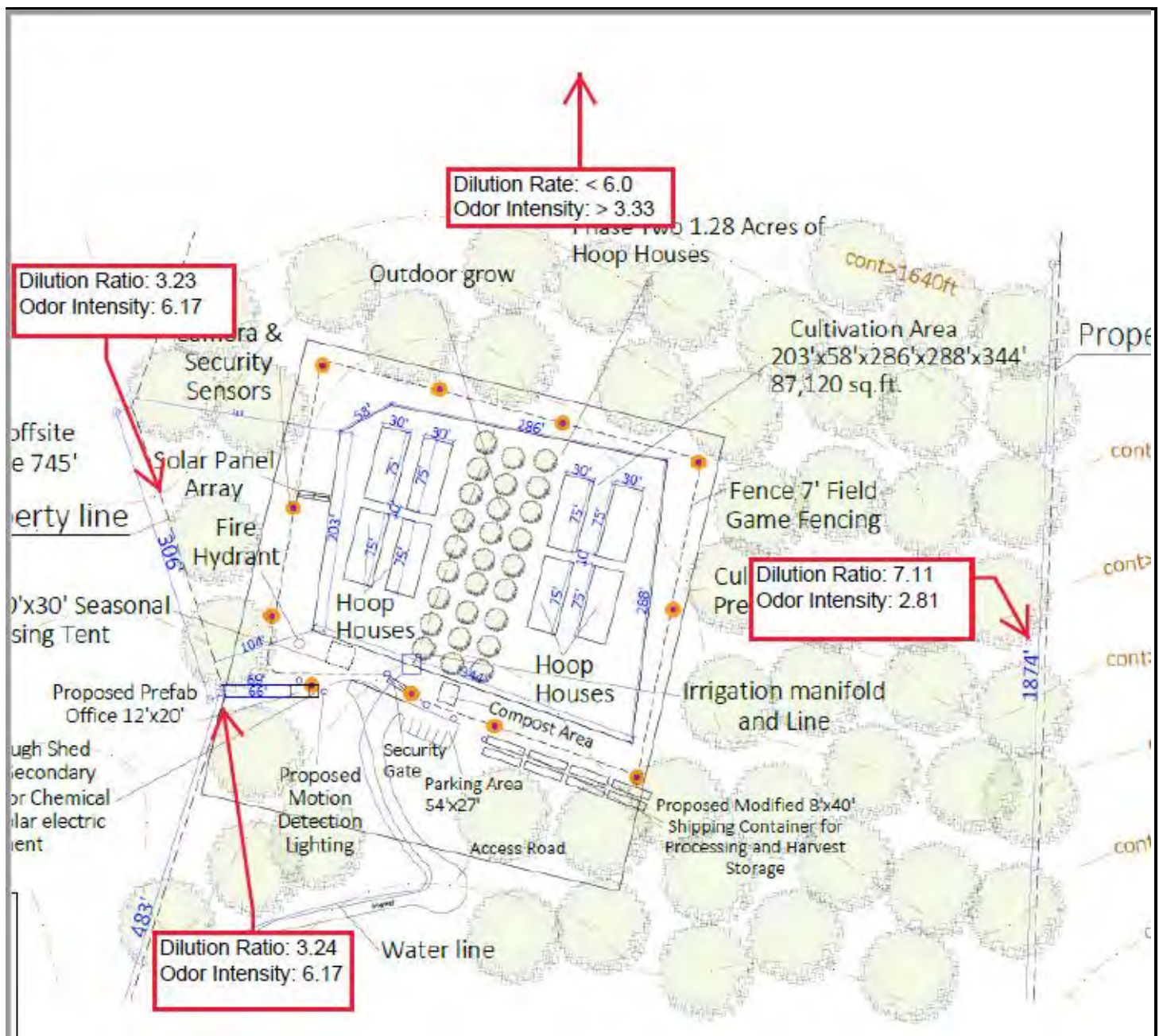
## Sample Calculation of Dilution Factor

*Property Line (190 feet from outdoor canopy)*





Figure 7  
Summary of Results



## Attachment

### Description of Filters for odor Control at hoopouses






# 335 208-230V | PN 4042500

## PERFORMANCE

°F   %RH	80   60	75   50
Water Removal (P/Day)	350	233
Efficiency (P/kWh)	9.3	6.7
Energy Factor (L/kWh)	4.3	3.2

## ELECTRICAL

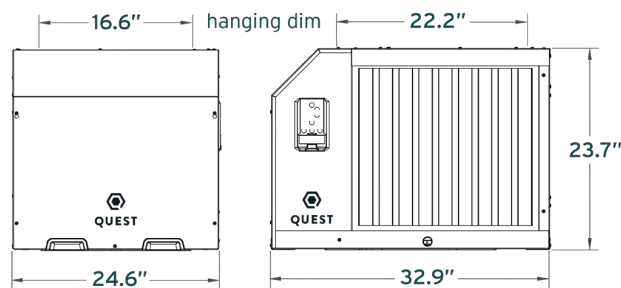
°F   %RH	80   60	80   60
Supply Voltage	230V	208V
Current Draw	6.9A	7.9A
MCA*	15A	15A
MOP*	20A	20A
Recommended Breaker Size	15A	15A
Power	1,565W	
Power Cord	NEMA 6-15P 	
CFM	900	
BTU (Total)	20,300	
BTU (Motor Load)	5,100	
BTU (Heat of Condensation)	15,200	

## SPECS

Control Type	Digital Onboard or External
Refrigerant Type	R410a
Refrigerant Amount	4 lb 12 oz
Weight	215 lb
Air Filter MERV Rating	MERV-13
Dimensions	20" x 22" x 2"
Drain Port Connection	3/4 Threaded NPT
Operating Temperature	56 F Min - 95 F Max



## DIMENSIONS



## FEATURES

- + **Patented M-CoRR Technology:** Multi-coil design achieves highest efficiencies available in the market
- + **Digital Onboard Control:** easy operation of your machine, with optional external control
- + **Superior MERV-13 Filtration:** Removes more harmful contaminants from the air, such as mold, bacteria and some viruses
- + **Integrated Hang Points** and handles allows for easy movement and flexible installation
- + **Filter Compensation Technology:** Accounts for static pressure change to ensure consistent, powerful airflow
- + **Easy Access Panel:** removable panel for easier in-place maintenance and serviceability

Specifications are subject to change without notice. Drawings are not to scale. \*See manual for details on MCA/MOP.

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### Vertical Humidity Distribution Fans

Ventilation plays a vital role in modern greenhouses. The vertical air flow (VAF) fan produces an air current that is forced outward and downward along the roof and walls of the greenhouse, and then is pulled upward through the crop. Using this type of fan can lead to a better and more uniform climate and it can also lead to energy savings. VAF offers growers the opportunity to reduce the negative impacts of humidity in a simple and energy efficient way, and it is also easy to mount in a greenhouse and easy to maintain.

#### Specifications:

- Watts (High): 315
- 1/2 hp
- Width: 22 in. Depth: 26 in. Height: 22 in., Weight: 40 lbs.
- Blade size: 16 in.
- Up to 3,200 CFM
- Single phase



**VOLTS - 115/230**  
**AMPS - 3.9/1.95**



# SPECIFICATIONS

## Hurricane® Pro High Velocity Oscillating Wall Mount Fans - 20 Inch and 16 Inch

Item #736474 & #736484



PART NUMBER	736474	736484
FAN DIAMETER	20 Inch	16 Inch
ETL LISTED	Yes	
Tested to UL Standard No. 507		
Tested to CSA Standard C22.2 No. 113		
VOLTAGE	120	
AMPS	1.20	0.53
WATTAGE	140	60
CFM RATING	4500	2400
RPM	1450	
POWER CORD	Integrated 6 foot	
WEIGHT	17.25 lbs.	14.1 lbs
WARRANTY	1 year	

**Hurricane®**  
**PRO**

Hurricane® Pro High Velocity Oscillating Wall Mount Fans - Spec Sheet - Last Updated 06122017

*This document is not intended to be used for installation purposes. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice.*



Job Name/Location:

Tag #:

Date:

For: File Resubmit

PO No.:

Approval Other

Architect:

GC:

Engr:

Mech:

Rep:

(Company)

(Project Manager)

**LS180HEV2****Single Zone Mega Wall Mounted****Outdoor Unit (ODU) - LSU180HEV2, Indoor Unit (IDU) - LSN180HEV2****Performance:****Cooling:**

Cooling Capacity (Min~Rated~Max) (Btu/h)	3,685 ~ 18,000 ~ 18,493
SEER2	19
EER2	12

SEER - Seasonal Energy Efficiency Ratio

EER - Energy Efficiency Ratio

**Heating:**

Heating Capacity (Min~Rated~Max) (Btu/h)	3,685 ~ 19,000 ~ 22,997
Max. Heating @ Indoor 70°F DB Outdoor 19°F DB / 17°F WB	15,270
HSPF2	9.4

HSPF - Heating Seasonal Performance Factor

Cooling Nominal Test Conditions:

Indoor: 80°F DB / 67°F WB

Outdoor: 95°F DB / 75°F WB

Heating Nominal Test Conditions:

Indoor: 70°F DB / 60°F WB

Outdoor: 47°F DB / 43°F WB

**Electrical:**

Power Supply (V/Hz/Ø)	208-230/60/1
-----------------------	--------------

**Outdoor Unit:**

MOP (A)	20
MCA (A)	15
Cooling Rated Amps (A)	10.4
Heating Rated Amps (A)	10.4
Compressor (A)	10.0
Fan Motor (A)	0.4

MOP - Maximum Overcurrent Protection

MCA - Minimum Circuit Ampacity

**Total Power Input:**

Cooling Power Input (kW)	1.5
Heating Power Input (kW)	1.583

**Piping:**

Liquid Line (in., O.D.)	1/4
Vapor Line (in., O.D.)	1/2
Additional Refrigerant (oz./ft.)	0.26
Min. / Max. Pipe Length (ft.) <sup>2</sup>	9.8 / 65.6
Piping Length (no add'l refriger., ft.)	24.6
Max. Elevation (ft.)	32.8

**Features:**

- 24-Hour on/off timer
- 2-Way (up / down) auto swing
- Auto changeover
- Auto restart
- Jet cool/Jet heat
- Condensate sensor connection
- Energy saving
- Inverter (variable speed compressor)
- Self-cleaning indoor coil
- Sleep mode
- Ultra quiet operation

**Included Accessories:**

- Wireless Remote Controller — AKB74955602

**Optional Accessories:<sup>10</sup>**

- ☐ MultiSITE™ CRC1 — PREMTBVC0
- ☐ MultiSITE CRC1+ — PREMTBVC1
- ☐ Simple Remote Controller — PREMTCC00U
- ☐ Premium Remote Controller — PREMTA000
- ☐ Dry Contact - PDRYCB100/320/400

For a complete list of available accessories, contact your LG representative.

For continual product development, LG reserves the right to change specifications without notice.

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**Operating Range:****Outdoor Unit:**

Cooling (°F DB)	14 ~ 118
Heating (°F WB)	14 ~ 65

**Indoor Unit:**

Cooling (°F WB)	53 ~ 75
Heating (°F DB)	60 ~ 86

**System Data:**

Refrigerant Type	R410A
Refrigerant Control	EEV
Refrigerant Charge (lbs.)	2.975
ODU Sound Pressure (Cooling / Heating) (±1 dB[A]) <sup>3</sup>	55 / 55
IDU Sound Pressure	
Cooling (H/M/L/Sleep) (±1 dB[A]) <sup>3</sup>	48 / 43 / 38 / 32
Heating (H/M/L) (±1 dB[A]) <sup>3</sup>	48 / 43 / 38 / 32
ODU Net / Shipping Weight (lbs.)	98.1 / 108
IDU Net / Shipping Weight (lbs.)	26 / 30
Heat Exchanger Coating	GoldFin™

**Fan:**

ODU Type	Propeller
IDU Type	Cross Flow
Fan Speeds (Fan/Cool/Heat)	6 / 6 / 6
Quantity (ODU + IDU)	1 + 1
Motor/Drive	Brushless Digitally Controlled/Direct
ODU Max. Air Flow Rate (CFM)	1,730
IDU Air Flow	
Cooling, Max/H/M/L (CFM)	689 / 512 / 459 / 371
Heating, Max/H/M/L (CFM)	653 / 565 / 477 / 388
Dehumidification (pts./hr.)	3.38

**Notes:**

1. Acceptable operating voltage: 187V-253V.
2. Piping lengths are equivalent.
3. Sound Pressure levels are tested in an anechoic chamber under ISO Standard 3745.
4. All communication / connection (power) cable from the outdoor unit to the indoor unit is field supplied and must be a minimum of four-conductor, 14 AWG, stranded, shielded or unshielded (if shielded, it must be grounded to the chassis of the outdoor unit only), and must comply with applicable local and national codes.
5. See Engineering Manual for sensible and latent capacities.
6. Power wiring cable size must comply with the applicable local and national code.
7. The indoor unit comes with a dry helium charge.
8. This data is rated 0 ft. above sea level, with 24.6 ft. of refrigerant line and a 0 ft. level difference between outdoor and indoor units.
9. Must follow installation instructions in the applicable LG installation manual.
10. LSN\*\*\*HEV2 9,000 and 12,000 Btu/h Mega indoor units are compatible with wired controllers from July 2019 production; LSN\*\*\*HEV2 18,000 and 24,000 Btu/h Mega indoor units are compatible with wired controllers from January 22, 2020 production. LSN Mega indoor units are compatible with Dry Contacts from August 2019 production.



SB\_SZ\_Mega\_WallMounted\_LS180HEV2\_2022\_11\_03\_151504

Page 1 of 3

24-0520 E 88 of 247





Job Name/Location: \_\_\_\_\_

**LS180HEV2**  
Single Zone Mega Wall Mounted  
Outdoor Unit (ODU) - LSU180HEV2, Indoor Unit (IDU) - LSN180HEV2



**LG**  
Life's Good

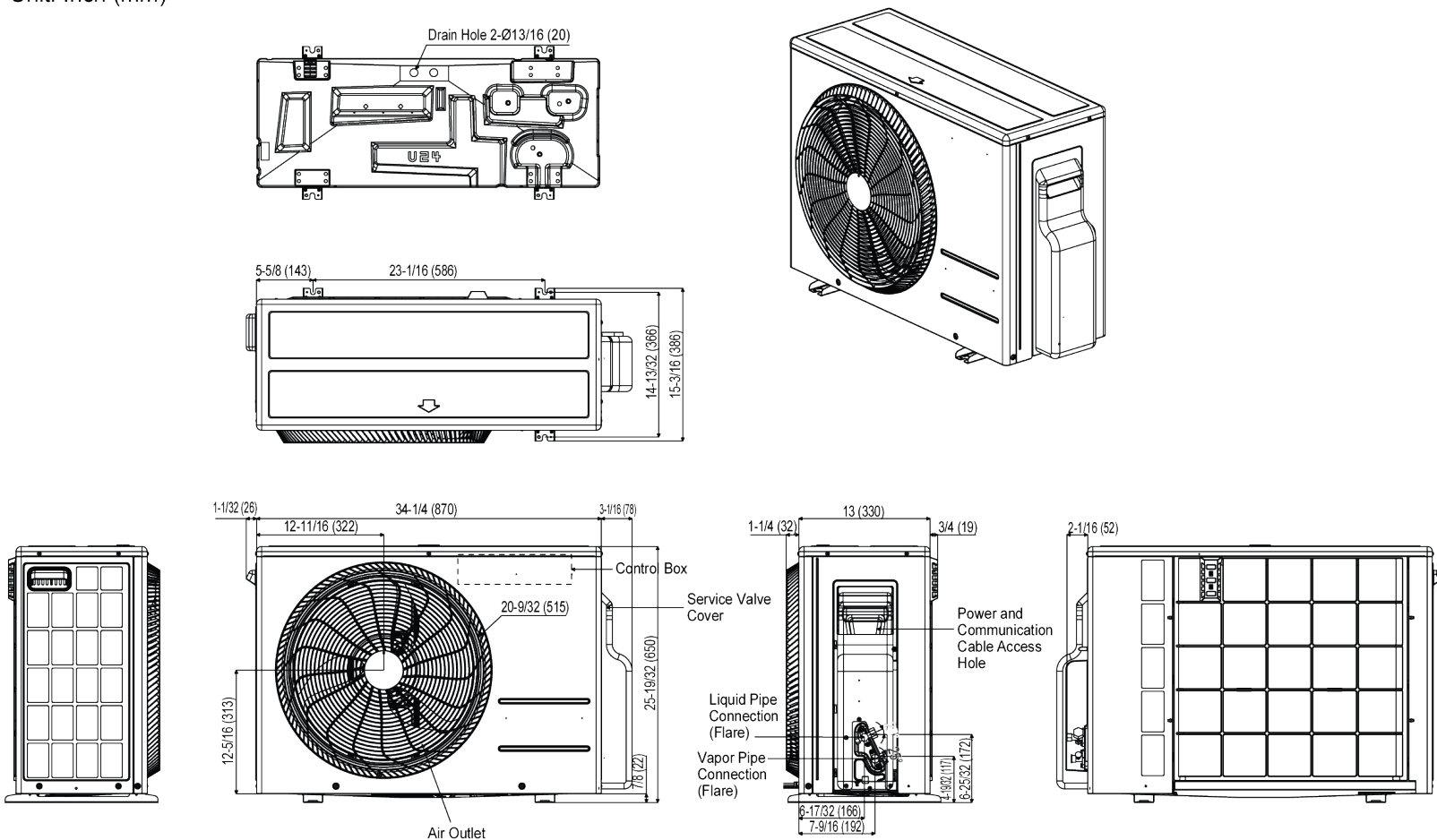
Tag No.: \_\_\_\_\_

Date: \_\_\_\_\_

PO No.: \_\_\_\_\_

24-0520 E 90 of 247

Unit: Inch (mm)



## Appendix E

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### Odor Report



## *DRAFT*

# TECHNICAL MEMORANDUM

---

**To:** Michael Pinette  
Single Source Solution, Inc.

**Date:** August 14, 2023

**From:** Ray Kapahi *RK*  
Tel: 916-687-8352  
Tel: 916-687-8352  
E-Mail: [ray.kapahi@gmail.com](mailto:ray.kapahi@gmail.com)

**Subject:** Revised Analysis of Odor at the Proposed Cannabis Cultivation Located at  
4941 D'Agostini Drive in Somerset (El Dorado County), California

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### INTRODUCTION AND SUMMARY

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The results of the current analysis indicate that maximum odor intensity along the property lines would range from below 6.2 DT to 2.81 DT. The highest odor intensity occurs along the Southwest portion of the property where the separation between the outdoor cultivation area and the property lines range is approximately 190 feet.

Since the calculated odor intensity is below El Dorado County's limit of 7 DT, the project would comply with El Dorado County's Ordinance 5110(5)(D).

This Technical Memorandum presents the methodology, data and assumptions used in this analysis. These are described in detail below.

### SCOPE AND METHODOLOGY OF ODOR ANALYSIS

The overall methodology used in this analysis is to use an atmospheric dispersion model to predict the dilution of odors as they migrate away from the outdoor cultivation area. By calculating the relative concentration of odors adjacent to the cultivation area and at the property line(s), we can determine the dilution ratio defined as odor concentration at the cultivation area divided by concentration at the property line(s).

For example, if the maximum concentration at the cultivation area is 5,000 micrograms per cubic meter (ug/m<sup>3</sup>) and the relative concentration at the property line 2,000 ug/m<sup>3</sup>, the dilution ratio would equal:

$$\text{Dilution Ratio} = \frac{5,000 \text{ ug/m}^3}{2,000 \text{ ug/m}^3} = 2.5$$

In other words, the odors would be diluted by a factor of 2.5 as they migrate from the cultivation area towards the property line.

The dilution factor is used along with measurements at other outdoor cannabis cultivation sites to predict odor intensity at the D'Agostini property lines. This methodology was reviewed by the staff at El Dorado County Air Quality Management District (AQMD) to confirm that this approach would be acceptable. The District agreed with this approach as noted in their August 28, 2020 letter to Aaron Mount at El Dorado County Planning.

### Modeling Methodology

As in the 2021 odor analysis, we used the EPA and AQMD recommended AERMOD dispersion model (Version 22112) along with one year (2019) of hourly wind data for Somerset. The data (known as MM5) is derived from weather satellites to calculate winds and other parameters

for all locations in the continental US. The data used was prepared by Lakes Environmental (Waterloo, Canada)<sup>1</sup>.

The cultivation site was modeled as a single ground based area source. Concentrations were calculated using a 10 meter grid using an emission rate of  $1.00 \times 10^{-4}$  grams/sec-square meter. See Figure 2.

The model results are concentrations in terms of micrograms per cubic meter at each grid location averaged over 1-hour. These concentrations are meaningful only in a relative sense to help establish the dilution pattern. It is recognized that the averaging time for odors is a few minutes, not 1 hour. Typically, peak concentrations over a few minutes are many times greater than those over 1 hour. However, the ratio of concentrations and the dilution factor will remain the same whether averaged over a few minutes or 1 hour averaging time.

Finally, we note that the maximum predicted concentration varies with both the distance and the direction from the cultivation site. Generally, the concentration decreases with distance from the cultivation site. Figures 4 and 5 illustrate the spatial distribution of 1-hour relative concentration. These figures show that the highest 1-hour relative concentration (based on 8,760 hours that were modeled) occur East of the property.

### Baseline Odor Used in the Analysis

We used odor measurements taken at a Yolo County outdoor cannabis site. This outdoor site covers 0.75 acres and is located at 22945 County Road 23, Esparto. At the time the measurements were taken, the plants were 2 weeks away from harvesting. Odor measurements were taken September 22, 2020 that indicated odor intensity of 15 DT. However, we noted that there were brief periods when odor intensity was above 15 but were not fully captured by the Nasal Ranger. We estimated the odor intensity to be closer to 20 DT and this is the value used in the current analysis. A complete documentation of the September 22<sup>nd</sup> odor survey is attached.

### CALCULATION OF ODOR INTENSITY AND RESULTS

The calculation of odor intensity at the property lines is as follows:

$$\text{Odor Intensity at Property Line} = \frac{\text{Baseline Odor Intensity (DT)}}{\text{Dilution Factor}}$$

For example, the odor intensity at the Southwestern property line (See Figure 6) would equal:

$$\frac{20 \text{ DT}}{3.24} = 6.17 \text{ DT}$$

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<sup>1</sup> Lakes Environmental. Waterloo, Canada. Information on the development of local wind data based on the MM5 for Somerset can be found at: [https://www.weblakes.com/services/met\\_data.html#aermetmm5](https://www.weblakes.com/services/met_data.html#aermetmm5)

The results for the closest property lines are summarized below and shown in Figure 7.

Location	Distance to Property Line		Maximum Conc.	Conc. At Property Line	Lowest Dilution Ratio	Fenceline DT
	(ft)	(m)				
North	< 1000	< 300	58,407	> 9738.9	< 6.00	< 3.33
Eastern Property Line	500	152.4	56,441	7,939	7.11	2.81
SW Property Line	190	57.9	64,944	20,043	3.24	6.17
Western Property Line	310	94.5	32,391	10,037	3.23	6.20
Baseline DT	20					

Note: The Northern property line lies outside the modeling grid. The relative odor concentration was estimated based on data at the Northern edge of the modeling grid.

Once a permit has been issued and cannabis cultivation proceeds, EPS staff will be available to conduct odor monitoring at your property to confirm that odors do not exceed the County limit of 7 DT.

## Appendix F

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### Air Quality Technical Memo





Earth Groovy Products LLC 530-503-9078 Office 530-748-9822 [earthgroovy.com](http://earthgroovy.com)

Technical Memo Air Quality  
Commercial Cannabis Cultivation  
CUP-Application of  
Single Source Solutions Inc.  
4941 D'agostini Dr. Somerset, CA  
APN# 046-710-17-100  
Owners John Muraco Jr., Joe Wiseman, and Michael Pinette  
April 26th, 2021

## Summary and Background

The estimated emissions for this project are well below El Dorado County thresholds of significance.

The applicants seek licenses for two acres of commercial cannabis cultivation in the form of 87,120 sq. ft. outdoor full-term cultivation. The project includes the development of security features, fire safety features, modular office, eight modified shipping containers for harvest storage and processing, and solar power. Phase Two of the project will have 1.28 acres of hoop houses installed on the east side of the cultivation area.

The cannabis activity is located in the middle of a 46.53 acre parcel. Its located in a valley with a 2+ acre clearing within a heavily forested area. The closest neighbor residence is approximately 745' away from the cultivation area.

The project will be powered by a solar system with a backup generator specified below.

Commercial cannabis has the most stringent contamination testing requirements of any consumable product in California. Most of agriculture does not have such a stringent contamination requirements for edible crops. Cannabis products are tested for heavy metals and pesticides. The standard for arsenic, for example, is .7 parts per million. The labs that perform the testing for the cannabis industry have evaluated the cause of contamination failure for the industry. They have concluded that the source of failure is not from plant absorption but from dust and foliar feeding with contaminated water and fertilizer. Baseline soils in much of El Dorado County contain arsenic and other heavy metals. Hence, it is imperative for growers to establish strict dust mitigation measures to prevent the contamination of their product from heavy metal-laden soils and their dust.

1. Fugitive Dust: Dust mitigation is critical to the success of a commercial cannabis cultivation operation in El Dorado County. Soil preparation will be done while soil is still

damp for outdoor operations. If the soil dries out then it will be moistened prior to work with the soil beginning. During the off-season soils will be held through cover crops. Access driveways will be surfaced with concrete, asphalt and/or compacted gravel.

Site preparation for modular office will involve the minimal movement of dirt. Any pre-construction site preparation will involve the moistening of soil if it is dried out.

2. Construction Emission: Any road improvement, road maintenance or site preparation will include moistening of dirt or gravel prior to the start of an activity. Construction activity will be performed with equipment that complies with the California Air Resources Board off-road diesel equipment rule or other applicable rules. The improvement of the access road has its own air quality plan (Permit #337081).
3. Back up Generator: The backup generator will be comparable to a 7000 Watt Lifan Model #ESI7000iER-EFI with a 389 cc gasoline engine. The horsepower of the engine is below the level required for permitting by the El Dorado County Air Quality Management District.

## Appendix G

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### Biological Resources Assessment

**APN: 046-710-017-100**

**4941 D'Agostini Drive**

***Updated Biological Resources Assessment***

*Prepared for:*

**Michael Pinette, John Muraco, and Joe Wiseman (Applicants)**  
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*Prepared by:*

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*September 2023*



## TABLE OF CONTENTS

Report Summary .....	iv
1 INTRODUCTION .....	1-1
1.1 Project Location .....	1-1
1.2 Project Understanding .....	1-1
1.3 Biological Resources Assessment Purpose .....	1-2
2 REGULATORY OVERVIEW .....	2-1
2.1 Federal Regulations .....	2-1
2.1.1 Section 404 of the Clean Water Act .....	2-1
2.1.2 Section 401 of the Clean Water Act .....	2-3
2.1.3 Endangered Species Act of 1973 .....	2-3
2.1.4 Bald and Golden Eagle Protection Act .....	2-3
2.2 State Regulations .....	2-3
2.2.1 California Endangered Species Act .....	2-3
2.2.2 Streambed Alteration Agreements: CDFG Code Section 1600 et seq. ....	2-4
2.2.3 Porter-Cologne Water Quality Control Act & Section 1601 and Section 1607 of CDFG Code .....	2-4
2.2.4 State Water Resources Control Board Wetland Policy (April 2019) .....	2-4
2.2.5 California Department of Fish and Game Code Sections 3503, 3503.5, and 3800: Nesting Migratory Bird and Raptors .....	2-5
2.2.6 California Special Species of Concern, Fully Protected, and Special Status Species .....	2-5
2.2.7 California Environmental Quality Act Guidelines Section 15380 .....	2-5
2.2.8 State Oak Woodland Regulations .....	2-6
2.3 Local Regulations .....	2-6
2.3.1 El Dorado County Oak Resources Conservation Ordinance .....	2-6
2.3.2 El Dorado County Ordinance 5110 Article 4 (Section 130.41.200.5.C) .....	2-7
2.3.3 El Dorado County General Plan Conservation and Open Space Element .....	2-7
3 METHODOLOGY .....	3-1
3.1 Sensitive Biological Resources Background Review .....	3-1
3.2 Reconnaissance Level Biological Resources Field Surveys .....	3-1
3.3 Project Area Characterization .....	3-2

---

4	ENVIRONMENTAL SETTING .....	4-1
4.1	Environmental Setting .....	4-1
4.2	Project Area Soil Types .....	4-1
4.3	Project Area Vegetation Communities .....	4-2
5	RESULTS .....	5-1
5.1	Special-Status Species .....	5-1
6	CONCLUSIONS AND RECOMMENDATIONS:.....	3
	Proposed Avoidance, Minimization, and Mitigation Measures .....	4
6.1	Potential Impacts to Special-Status Species .....	4
6.2	Potential Impacts to Nesting Raptors and other Protected Bird Species .....	6-1
6.3	El Dorado County Oak Resources Conservation Ordinance .....	6-2
6.4	El Dorado County Ordinance 5110 Ordinance: Stream Setback Requirements .....	6-3
	El Dorado County Ordinance 5110 Article 4 (Section 130.41.200.5.C) covers outdoor and mixed-light cultivation of commercial cannabis within El Dorado County and includes the following regarding stream setbacks: .....	6-3
7	REFERENCES .....	7-1

## LIST OF APPENDICES

Appendix A	Project Area Overview Figures
Appendix B	Project Site Plan and Habitat Maps
Appendix C	USDA Soils Maps
Appendix D	National Wetland Inventory (NWI) and National Hydrography Database (NHD) Map and Aerial with Location of Stream on the Map
Appendix E	Plants and Wildlife Species Observed During Site Surveys
Appendix F	Photo Log
Appendix G	CNDDDB 3-Mile Buffer Figure
Appendix H	CNDDDB Occurrence Report and Quad Search Results and USFWS iPac Report

## Report Summary

The Biological Resources Assessment Report includes the biological results of the background research, biological resources field surveys, data analysis, and impact assessment for the Project area. The key findings of this report include the following:

- No California Native Plant Society (CNPS) List 1, 2, 3, or 4 plant species or special-status wildlife species have been documented and mapped within the Project area based on background research and the results of the biological resources surveys conducted as part of the development of this report. Therefore, it is unlikely any special-status plant or wildlife species occur within or directly adjacent to the Project disturbance areas within the Project area. However, a pre-construction special-status plant species survey focused on the Project disturbance areas is included within the mitigation section.
- The Project area does not contain any oak trees or oak woodlands that will be removed or impacted by the proposed Project. The proposed Project area lies adjacent to oak trees and oak woodlands, but the current Site Plan and Habitat Maps for the Project includes complete avoidance of such protected oak resources and therefore, an Oak Resources Technical Report is not required for the proposed Project per the current Site Plan.
- The areas immediately adjacent to the Project area contains potential nesting habitat for raptors and other protected bird species. Though no active nesting was identified during December 2020 site surveys, pre-construction surveys are recommended to confirm the lack of nesting raptors and other protected bird species immediately prior to Project development if vegetation removal and project commencement will occur between March 1<sup>st</sup> and August 31<sup>st</sup>.
- No fill or dredge material will be placed in a “waters of the U.S.”, including wetlands, or “waters of the State of California” from the implementation of the proposed Project. Therefore, Clean Water Act permits and compensatory mitigation will not be required.
- No CDFW Streambed Alteration Agreement will be required for the proposed Project given the lack of stream and riparian habitat within and adjacent to the Project area.
- The seasonal drainage/stream is located outside of the State Water Board’s 100-foot setback requirement for intermittent and seasonal streams.
- The Project area does not contain any watercourses or other aquatic resources such as ponds or wetlands. Site surveys confirmed the lack of federal and State of California aquatic resources mapped within the proposed Project disturbance area. However, a seasonal drainage runs within the northern section of the subject parcel a minimum of 285 feet from the Project area at its closest location to the proposed Project disturbance area, which is the northeast corner of the vineyard/Project area where there is a gate. It contains rocky, unvegetated substrate with upland vegetation along its banks. Best Management Practices and other mitigation measures are included to demonstrate that the actual 300-foot El Dorado County Ordinance 5110 Article 4 (Section 130.41.200.5.C) setback will be substantially achieved for the purpose of their required setback.



## **1 INTRODUCTION**

At the request of the project applicant Michael Pinette, Mr. Greg Matuzak was retained to prepare an Updated Biological Resources Assessment Report ("Biological Report") for the ADP Cultivation Project ("Project") located in Somerset, El Dorado County, California (see Appendix A). The Biological Report includes an evaluation of sensitive biological resources within the Project area, including sensitive biological resources under the jurisdiction of the California Department of Fish and Wildlife ("CDFW"), United States Fish and Wildlife Service ("USFWS"), United States Army Corps of Engineers ("Corps"), and the El Dorado County Planning Department. Preparation of the Biological Report included background research, field biological resources surveys, and reporting as detailed herein. Additionally, this Report includes additional analysis as requested by the El Dorado County Planning Department and based on a review of the initial Biological Report (dated January 2021) by the County's biological resources consultant, HELIX Environmental Planning.

Mr. Greg Matuzak, Principal and owner of Greg Matuzak Environmental Consulting LLC is a wetlands ecologist and wildlife biologist with 22+ years of experience conducting aquatic resources delineations and biological resources assessments in Northern California. Mr. Matuzak is 40-hour Wetland Delineation Certified (Wetland Training Institute) and has conducted aquatic resources delineations for 100's of linear miles of projects and 1000s of acres of site development projects. Additionally, Mr. Matuzak has conducted special-status biological resources surveys and developed biological resources assessments for dozens of projects in Nevada, El Dorado, and Placer Counties. Mr. Matuzak has lived and worked in Nevada County for over 14 years. Mr. Matuzak was responsible for the field data collection and assessment developed as part of the development of this Biological Report. Mr. Matuzak is on the Nevada and Placer County Planning Departments' lists of Qualified Biological Resources Consultants and is a Qualified Biologist per the CDFW's definition.

### **1.1 Project Location**

The proposed Project is located on D'agostini Drive in Somerset, El Dorado County, California (APN 046-710-017-100). The subject parcel is located approximately 8.5 miles southwest of Somerset and approximately 19.0 miles south of Placerville off Mt. Aukum Road. The subject parcel is 46.53 acres. See Appendix A for Vicinity and Project Location Figures and see Appendix B for a Site Plan.

### **1.2 Project Understanding**

The Project involves construction of an approximately 87,120 SF of cannabis cultivation area, which will include a single large cultivation area to be developed in a single phase within a developed vineyard. In addition, an existing access road from the residence within the subject parcel will connect to the proposed cultivation area. See attached Site Plans for the proposed Project features that have been included as part of this Biological Report.

### **1.3 Biological Resources Assessment Purpose**

The purpose of the Biological Report is to identify the location and extent of sensitive biological resources within the Project Area, including special-status plant and wildlife species. Additionally, this Biological Report includes an impact assessment to such sensitive biological resources based on the Project Understanding outlined in Section 1.2 above. Section 6 includes avoidance, minimization, and mitigation measures to ensure that the Project Area disturbance, based on the Project Understanding, would not have a significant impact on such sensitive biological resources. This Biological Report also satisfies the El Dorado County Community Development Services Planning and Building Department Commercial Cannabis Permitting Office (CCPO) requirements for the approval of the Project and its potential to impact sensitive biological resources outlined in the California Environmental Quality Act (CEQA) Checklist.

Furthermore, based on the Project understanding, no oak trees are proposed to be removed or impacted and no riparian habitat, streams, waterways, or water crossings will be impacted as part of the implementation of the proposed Project within the subject parcel. Therefore, additional studies and reporting to evaluate such resources are not required as part of the CCPO approval process. This Biological Report meets the requirements of the CCPO as part of CEQA compliance for the Project and overall Project permit approval.

## 2 REGULATORY OVERVIEW

### 2.1 Federal Regulations

#### 2.1.1 Section 404 of the Clean Water Act

The U.S. Army Corps of Engineers ("Corps") and the Environmental Protection Agency ("EPA") regulate the discharge of dredge or fill material into "waters of the U.S." under Section 404 of the Clean Water Act. "Waters of the U.S." include wetlands and lakes, rivers, streams, and their tributaries. Wetlands are defined for regulatory purposes as areas "...inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated solid conditions" as specified in 33 Code of Federal Regulations [CFR] 328.3, 40 CFR 230.3.

Generally, wetlands include swamps, marshes, bogs, and similar areas. Lakes, rivers, and streams are defined as "other waters of the U.S." Jurisdictional limits of these features are typically noted by the Ordinary High Water Mark ("OHWM"). The OHWM is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as mark a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR 328 and 33 CFR 329).

Isolated ponds or seasonal depressions had been previously regulated as waters of the U.S. However, in *Solid Waste Agency of Northwestern Cook County (SWANCC) v. USACE et al.* (January 8, 2001), the U.S. Supreme Court ruled that certain "isolated" wetlands (e.g., non-navigable, isolated, and intrastate) do not fall under the jurisdiction of the CWA and are no longer under the jurisdiction of the Corps. Some circuit courts (e.g., *U.S. v. Deaton*, 2003; *U.S. Rapanos*, 2003; *Northern California River Watch v. City of Healdsburg*, 2006), though, have ruled that SWANCC does not prevent CWA jurisdiction if a "significant nexus" such as a hydrologic connection exists, whether it be man-made (e.g., roadside ditch) or natural tributary to navigable waters, or direct seepage from the wetland to the navigable water, a surface or underground hydraulic connection, an ecological connection (e.g., the same bird, mammal, and fish populations are supported by both the wetland and the navigable water), and changes to chemical concentrations in the navigable water is present due to water from the wetland.

Areas considered to be non-jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions with no outlet for drainage (33 CFR, Part 328).

The *Clean Water Rule* is a 2015 regulation published by the EPA and Corps to clarify water resources management in the United States under a provision of the CWA. The regulation defined the scope of federal water protection in a more consistent manner, particularly over streams and wetlands, which have a significant hydrological and ecological connection to traditional navigable waters, interstate waters, and territorial seas. It is also referred to as

the *Waters of the United States* rule, which defines all bodies of water that fall under U.S. federal jurisdiction. The rule has been contested in litigation and in 2017 the Trump administration announced its intent to review and rescind or revise the rule. Following a Supreme Court ruling on January 22, 2018 that lifted a nationwide stay on the rule, the Trump administration formally suspended the rule until February 6, 2020, thereby giving the EPA time to issue a draft proposal of replacement water regulatory requirements.

On October 22, 2019, the EPA and the Corps published a final rule to repeal the 2015 Clean Water Rule: Definition of “Waters of the United States” (“2015 Rule”), which amended portions of the Code of Federal Regulations (CFR), and to restore the regulatory text that existed prior to the 2015 Rule. The final rule will become effective on December 23, 2019. The EPA and the Corps will implement the pre-2015 Rule regulations informed by applicable agency guidance documents and consistent with Supreme Court decisions and longstanding agency practice.

However, on April 21, 2020, the EPA and the Corps published the Navigable Waters Protection Rule to define “Waters of the United States” in the *Federal Register*. For the first time, the agencies have streamlined the definition so that it includes four simple categories of jurisdictional waters, provides clear exclusions for many water features that traditionally have not been regulated, and defines terms in the regulatory text that have never been defined before. Congress, in the CWA, explicitly directed the Agencies to protect “navigable waters.” The Navigable Waters Protection Rule regulates traditional navigable waters and the core tributary systems that provide perennial or intermittent flow into them.

Under the final rule, four clear categories of waters are federally regulated:

- The territorial seas and traditional navigable waters,
- Perennial and intermittent tributaries to those waters,
- Certain lakes, ponds, and impoundments, and
- Wetlands adjacent to jurisdictional waters

Therefore, as of June 22, 2020, the final rule details 12 categories of exclusions, features that are not “waters of the United States,” such as features that only contain water in direct response to rainfall (e.g., ephemeral features); groundwater; many ditches; prior converted cropland; and waste treatment systems. The final rule clarifies key elements related to the scope of federal CWA jurisdiction, including:

- Providing clarity and consistency by removing the proposed separate categories for jurisdictional ditches and impoundments.
- Refining the proposed definition of “typical year,” which provides important regional and temporal flexibility and ensures jurisdiction is being accurately determined in times that are not too wet and not too dry.
- Defining “adjacent wetlands” as wetlands that are meaningfully connected to other jurisdictional waters, for example, by directly abutting or having regular surface water communication with jurisdictional waters.



The Navigable Waters Protection Rule is the second step in a two-step process to review and revise the definition of “waters of the United States” consistent with the February 2017 Presidential Executive Order entitled “Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the ‘Waters of the United States.’” This final rule became effective on June 22, 2020 and will replace the Step One Rule published in October, 2019 as outlined above.

### **2.1.2 Section 401 of the Clean Water Act**

Section 401 of the CWA requires an applicant, for any federal permit which may result in a discharge into waters of the U.S., to obtain a certification from the state that the discharge will comply with provisions of the CWA. The nine regions of the State Water Quality Control Board administer this program. Any condition of water quality certification would be incorporated into the Corps permit. California has a policy of no-net-loss of wetlands and typically requires mitigation for impacts to wetlands before it will issue a water quality certification. This Project is located under the jurisdiction of Region 5, the Central Valley Regional Water Quality Control Board (“RWQCB”).

### **2.1.3 Endangered Species Act of 1973**

For the Project area, consultation with the USFWS would be necessary if a proposed action may affect a federally listed species or occupied habitat. This consultation would proceed under Section 7 of the Endangered Species Act (ESA) if a federal action is part of the proposed action or through Section 10 of the ESA if no such nexus were available (USFWS, 1973).

### **2.1.4 Bald and Golden Eagle Protection Act**

The Bald and Golden Eagle Protection Act (BAGEPA) (16 USC Section 668) protects bald and golden eagles and their nests from direct “take” (i.e. harm or harassment as described above). BAGEPA prohibits the take or commerce of any part of the bald or golden eagles (USFWS, 1940). The USFWS administers the Act and reviews actions that may affect species protected under the Act.

## **2.2 State Regulations**

### **2.2.1 California Endangered Species Act**

The California Department of Fish and Wildlife (CDFW) has jurisdiction over plant and wildlife species listed as threatened or endangered under section 2080 of the CDFW Code. The California Endangered Species Act (CESA) prohibits take of state-listed threatened and endangered species. The state Act differs from the federal Act in that it does not include habitat destruction in its definition of *take*. The CDFW defines *take* as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The CDFW may authorize *take* under the CESA through Section 2081 agreements. If the results of a biological survey indicate that a state-listed species would be affected by the project, the CDFW would issue an Agreement under

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Section 2081 of the CDFW Code and would establish a Memorandum of Understanding for the protection of state-listed species. For species where an Agreement under Section 2081 is infeasible, an Incidental Take Permit (ITP) would be required prior to undertaking any project related activities that could directly or indirectly impact a CESA listed species.

### **2.2.2 Streambed Alteration Agreements: CDFG Code Section 1600 et seq.**

CDFW has jurisdictional authority over substantial alterations to the bed or bank of rivers, streams, and lakes under Sections 1600–1616. CDFW has the authority to regulate all work under the jurisdiction of the State of California that would substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed.

Given there will be no disturbance within or directly adjacent to watercourses and associated riparian vegetation and therefore, a CDFW Streambed Alteration Agreement would not be required for the Project.

### **2.2.3 Porter-Cologne Water Quality Control Act & Section 1601 and Section 1607 of CDFG Code**

These acts and codes pertain to projects with potential impacts to water quality or waterways. The Project area does not contain any aquatic features or habitats considered waters of the State as defined by the State Water Resources Board (State Board 2014).

### **2.2.4 State Water Resources Control Board Wetland Policy (April 2019)**

On April 2, 2019, the State Water Resources Control Board (State Water Board) adopted rules to protect wetlands and other environmentally sensitive waterways throughout the state. More than 90 percent of California's historic wetlands have been lost to development and other human activity. Wetlands are a critical natural resource that protect and improve water quality, provide habitat for fish and wildlife, and buffer developed areas from flooding and sea-level rise. The newly adopted rules provide a common, statewide definition of what constitutes a wetland. They also provide consistency in the way the State Water Board and nine regional water boards regulate activities to protect wetlands and other waterways, such as rivers and streams, and bays and estuaries. The State of California waters of the state are, by definition, broader than "waters of the United States" covered by federal regulation. The newly adopted rules do not change that and will ensure that waters of the state will continue to be protected even if protections for federal waters are narrowed by administrative actions or the courts.

The new definition clarifies what is considered a wetland – and what is not – for the entire state, provides a common framework for monitoring and reporting the quality of California's remaining wetlands, helps ensure no overall net loss, and promote an increase, in the quantity, quality, and sustainability of waters of the state, including wetlands, improves transparency and consistency across the State Water Board and the nine Regional Water Quality Control Boards in how discharges of dredged or fill material in sensitive waterways are monitored and regulated,

and avoids duplicative work and streamline requirements to cover all waters of the state, so both state and federal environmental concerns are addressed at once.

### **2.2.5 California Department of Fish and Game Code Sections 3503, 3503.5, and 3800: Nesting Migratory Bird and Raptors**

Sections 3503, 3503.5, and 3800 of the CDFG Code prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance within active nesting territories be reduced or eliminated during critical phases of the nesting cycle (approximately March 1 – August 31). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g. killing or abandonment of eggs or young), or the loss of habitat upon which birds are dependent, is considered "taking", and is potentially punishable by fines and/or imprisonment (LCC 2013).

### **2.2.6 California Special Species of Concern, Fully Protected, and Special Status Species**

California designates Species of Special Concern (SSC) as species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational or educational values. These species do not have the same legal protection as listed species but may be added to official lists in the future (CDFW 2014).

In the 1960's California created a designation to provide additional protection to rare species. This designation remains today and is referred to as "Fully Protected" species, and those listed "may not be taken or possessed at any time" (CDFW 2014). There are no species designated as a Fully Protected species known to occur within or adjacent to the Project area.

California special status species are identified by the California Natural Diversity Database (CNDDB) and includes those species considered to be of greatest conservation need by the CDFW.

### **2.2.7 California Environmental Quality Act Guidelines Section 15380**

California Environmental Quality Act (CEQA) Guidelines section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specific criteria. This section was included in the guidelines to deal primarily with situations in which a public agency is reviewing a project that may have a significant effect on, for example a "candidate species" that has not yet been listed by the USFWS or CDFW. CEQA, therefore, enables an agency to protect a species from significant project impacts until the respective government agencies have had an opportunity to list the species as protected, if warranted (CNRA 2012).

Plants appearing on the California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) are considered to meet CEQA's Section 15380 criteria. Ranks include: 1A) plants presumed extirpated in California and either rare or extinct elsewhere, 1B) plant rare, threatened, or endangered in California and elsewhere, 2A) plants presumed extirpated in California, but more

common elsewhere, and 2B) plants rare, threatened, or endangered in California, but more common elsewhere. Impacts to these species would therefore be considered “significant” requiring mitigation.

### 2.2.8 State Oak Woodland Regulations

State laws that regulate protection of oak woodlands include Professional Forester’s Law (PFL) and CEQA according to Public Resources Code Section 21083.4. Oak woodlands are defined as areas having 10% oak canopy cover or greater. “Oaks” are defined in Public Resources Code Section 21083.4 as a native tree species in the genus *Quercus*, that is 5 inches diameter at breast height (DBH) or greater. The Oak Woodlands Conservation Act (SB 1334) provides funding for the conservation and protection of oak woodlands in California. Oak trees and oak woodland habitats are protected under both the State and the Nevada County landmark groves and landmark oak tree regulations as discussed below.

## 2.3 Local Regulations

### 2.3.1 El Dorado County Oak Resources Conservation Ordinance

Permits for removal of Oak Resources are required for any non-exempt action requiring discretionary development entitlements or approvals from the County, or ministerial actions requiring a building or grading permit issued by the County. *An Oak Resources Technical Report prepared by a certified arborist, qualified wildlife biologist or a Registered Professional Forester is required prior to issuing a permit to remove any Oak Resources.*

Required care, inspection and documentation of replacement plantings (including replacement of any dead trees) shall be performed by all permittees for a seven (7) year period from the date of the planting. The County shall provide an annual reporting to the Board of Supervisors on the number of oak removal permits issued and estimated inches/acres approved for removal during the reporting year. The County shall provide a biennial report to the Planning Commission and Board of Supervisors of the in-lieu fees collected and recommend fee adjustments as appropriate.

Exemptions to oak mitigation requirements include but are not limited to: existing single-family parcel of one acre or less; fire safe activities to protect existing structures; utility line maintenance; emergency operations; County road projects; affordable housing projects; some agricultural activities; removal of dead, dying or diseased trees; some exemptions for personal use (e.g., firewood) limited to no more than eight trees per parcel per year; tree removal under a Timber Harvest Plan. Exemptions from mitigation do not apply to Heritage Trees, individual valley oak trees, and valley oak woodlands (unless these trees are dead, dying, or diseased).

The ORMP requires mitigation for permitted oak tree removal under the ORMP including: on-site retention; replacement planting on-site and off-site; and in-lieu fees that will be used to acquire land and/or conservation easements to conserve oak woodlands, and to plant and maintain native oak trees. (Under the prior General Plan Policy tree canopy retention was the only



mitigation option available.) All mitigation requires additional permits depending upon the mitigation option chosen.

To encourage on-site retention of oak woodlands, the ORMP requires increasing mitigation ratios based on the amount of oak woodland removed: Removing 50 percent or less requires a 1-to-1 ratio of mitigation, removing up to 75 percent requires a 1.5-to-1 ratio of mitigation, and removing up to 100 percent requires a 2-to-1 ratio of mitigation. Mitigation of oak woodlands would consist of one of the options described above: on-site retention; replacement planting on-site and off-site; and/or in-lieu fees.

A security deposit is required for all discretionary projects proposing on-site oak tree/oak woodland retention and/or replacement planting as mitigation. No grading or other on-site work shall be permitted until the security deposit is posted. The in-lieu fee for removal of *oak woodlands* is calculated based on total cost per acre which is currently set at \$8,285. The in-lieu fee for removal of *individual oak trees* is calculated on a total cost per inch which is currently set at \$153 for a non-Heritage Tree and \$459 per inch for a Heritage Tree at a 3-to-1 ratio. The per-inch fee shall be multiplied by the total number of trunk diameter inches removed. The in-lieu fees collected will be deposited in the County's Oak Woodland Conservation Fund. That fund will be used to acquire land and/or conservation easements to conserve oak woodlands, provide for native oak tree planting, and for ongoing conservation area monitoring and management activities.

### **2.3.2 El Dorado County Ordinance 5110 Article 4 (Section 130.41.200.5.C)**

Ordinance No. 5110 covers outdoor and mixed-light cultivation of commercial cannabis within El Dorado County and includes the following regarding stream setbacks:

- C. *Setbacks.* Outdoor or mixed-light cultivation of commercial cannabis shall be setback a minimum of 800 feet from the property line of the site or public right-of-way and shall be located at least 300 feet from the upland extent of the riparian vegetation of any watercourse.

### **2.3.3 El Dorado County General Plan Conservation and Open Space Element**

#### **CONSERVATION AND PROTECTION OF WATER RESOURCES**

#### **GOAL 7.3: WATER QUALITY AND QUANTITY**

Conserve, enhance, and manage water resources and protect their quality from degradation.

#### **OBJECTIVE 7.3.1: WATER RESOURCE PROTECTION**

Preserve and protect the supply and quality of the County's water resources including the protection of critical watersheds, riparian zones, and aquifers.

Policy 7.3.1.1 Encourage the use of Best Management Practices, as identified by the Soil Conservation Service, in watershed lands as a means to prevent erosion, siltation, and flooding.

Policy 7.3.1.2 Establish water conservation programs that include both drought tolerant landscaping and efficient building design requirements as well as incentives for the conservation and wise use of water.

Policy 7.3.1.3 The County shall develop the criteria and draft an ordinance to allow and encourage the use of domestic gray water for landscape irrigation purposes. (See Title 22 of the State Water Code and the Graywater Regulations of the Uniform Plumbing Code).

#### OBJECTIVE 7.3.2: WATER QUALITY

Maintenance of and, where possible, improvement of the quality of underground and surface water.

Policy 7.3.2.1 Stream and lake embankments shall be protected from erosion, and streams and lakes shall be protected from excessive turbidity.

Policy 7.3.2.2 Projects requiring a grading permit shall have an erosion control program approved, where necessary.

Policy 7.3.2.3 Where practical and when warranted by the size of the project, parking lot storm drainage shall include facilities to separate oils and salts from storm water in accordance with the recommendations of the Storm Water Quality Task Force's California Storm Water Best Management Practices Handbooks (1993).

Policy 7.3.2.4 The County should evaluate feasible alternatives to the use of salt for ice control on County roads.

Policy 7.3.2.5 As a means to improve the water quality affecting the County's recreational waters, enhanced and increased detailed analytical water quality studies and monitoring should be implemented to identify and reduce point and non-point pollutants and contaminants. Where such studies or monitoring reports have identified sources of pollution, the County shall propose means to prevent, control, or treat identified pollutants and contaminants.

#### OBJECTIVE 7.3.3: WETLANDS

Protection of natural and man-made wetlands, vernal pools, wet meadows, and riparian areas from impacts related to development for their importance to wildlife habitat, water purification, scenic values, and unique and sensitive plant life.

Policy 7.3.3.1 For projects that would result in the discharge of material to or that may affect the function and value of river, stream, lake, pond, or wetland features, the application shall include a delineation of all such features. For wetlands, the delineation shall be conducted using the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual

Policy 7.3.3.2 intentionally blank

Policy 7.3.3.3 The County shall develop a database of important surface water features, including lake, river, stream, pond, and wetland resources.

Policy 7.3.3.4 The Zoning Ordinance shall be amended to provide buffers and special setbacks for the protection of riparian areas and wetlands. The County shall encourage the incorporation of protected areas into conservation easements or natural resource protection areas. Exceptions to riparian and wetland buffer and setback requirements shall be provided to permit necessary road and bridge repair and construction, trail construction, and other recreational access structures such as docks and piers, or where such buffers deny reasonable use of the property, but only when appropriate mitigation measures and Best Management Practices are incorporated into the project. Exceptions shall also be provided for horticultural and grazing activities on agriculturally zoned lands that utilize "best management practices (BMPs)" as recommended by the County Agricultural Commission and adopted by the Board of Supervisors. Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a different setback is necessary or would be sufficient to protect the particular riparian area at issue. For projects where the County allows an exception to wetland and riparian buffers, development in or immediately adjacent to such features shall be planned so that impacts on the resources are minimized. If avoidance and minimization are not feasible, the County shall make findings, based on documentation provided by the project proponent, that avoidance and minimization are infeasible.

Policy 7.3.3.5 Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.

## CONSERVATION OF BIOLOGICAL RESOURCES

### GOAL 7.4: WILDLIFE AND VEGETATION RESOURCES

Identify, conserve, and manage wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value.

#### OBJECTIVE 7.4.1: PINE HILL RARE PLANT SPECIES

The County shall protect Pine Hill rare plant species and their habitats consistent with Federal and State laws.

Policy 7.4.1.1 The County shall continue to provide for the permanent protection of the eight sensitive plant species known as the Pine Hill endemics and their habitat through the establishment and management of ecological preserves consistent with County Code Chapter 130.71 and the USFWS's Gabbro Soil Plants for the Central Sierra Nevada Foothills Recovery Plan (USFWS 2002).

Policy 7.4.1.2 Private land for Pine Hill rare plant preserve sites will be purchased only from willing sellers.

Policy 7.4.1.3 Limit land uses within established Pine Hill rare plant preserve areas to activities deemed compatible. Such uses may include passive recreation, research and scientific study, and education. In conjunction with use as passive recreational areas, develop a rare plant educational and interpretive program.

Policy 7.4.1.4 The Pine Hill Preserves, as approved by the County Board of Supervisors, shall be designated Ecological Preserve (-EP) overlay on the General Plan land use map.

Policy 7.4.1.5 intentionally blank (Resolution 128-2017, October 24, 2017)

Policy 7.4.1.6 intentionally blank (Resolution 128-2017, October 24, 2017)

Policy 7.4.1.7 intentionally blank (Resolution 128-2017, October 24, 2017)

#### OBJECTIVE 7.4.2: IDENTIFY AND PROTECT RESOURCES

Identification and protection, where feasible, of critical fish and wildlife habitat including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat.

Policy 7.4.2.1 The County will coordinate wildlife and vegetation protection programs with appropriate Federal and State agencies.

Policy 7.4.2.2 The County shall continue to support the Noxious Weed Management Group in its efforts to reduce and eliminate noxious weed infestations to protect native habitats and to reduce fire hazards.

Policy 7.4.2.3 Consistent with Policy 9.1.3.1 of the Parks and Recreation Element, low impact uses such as trails and linear parks may be provided within river and stream buffers if all applicable mitigation measures are incorporated into the design.

Policy 7.4.2.4 Protect and preserve wildlife habitat corridors within public parks and natural resource protection areas to allow for wildlife use. Recreational uses within these areas shall be limited to those activities that do not require grading or vegetation removal.

Policy 7.4.2.5 Setbacks from all rivers, streams, and lakes shall be included in the Zoning Ordinance for all ministerial and discretionary development projects.

Policy 7.4.2.6 intentionally blank (Resolution 128-2017, October 24, 2017)

Policy 7.4.2.7 intentionally blank (Resolution 128-2017, October 24, 2017)

Policy 7.4.2.8 Conserve contiguous blocks of important habitat to offset the effects of increased habitat loss and fragmentation elsewhere in the County through a Biological Resource Mitigation Program (Program).

The Program will result in the conservation of: 1. Habitats that support special status species; 2. Aquatic environments including streams, rivers, and lakes; 3. Wetland and riparian habitat; 4. Important habitat for migratory deer herds; and 5. Large expanses of native vegetation.

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A. Habitat Protection Strategy. The Program establishes mitigation ratios to offset impacts to special-status species habitat and special-status vegetation communities within the County.

Special-status species include plants and animals in the following categories: • Species listed or proposed for listing as Threatened or Endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); • Species considered as candidates for listing as Threatened or Endangered under ESA or CESA; • Wildlife species identified by California Department of Fish and Wildlife (CDFW) as Species of Special Concern; • Wildlife species identified by US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) as Species of Concern; • Plants listed as Endangered or Rare under the California Native Plant Protection Act; • Animals fully protected under the California Fish and Game Code; • Plants that have a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) of 1A (plants presumed extirpated in California and either rare or extinct elsewhere), 1B (plants rare, threatened, or endangered in California and elsewhere), 2A (plants presumed extirpated in California, but more common elsewhere), or 2B (plants rare, threatened, or endangered in California, but more common elsewhere). The CNPS CRPRs are used by both CDFW and USFWS in their consideration of formal species protection under ESA or CESA. With the exception of oak woodlands, which would be mitigated in accordance with the ORMP (see General Plan Policy 7.4.4.4), and Pine Hill rare plant species and their habitat, which would be mitigated in accordance with County Code Chapter 130.71 (see General Plan Policy 7.4.1.1), mitigation of impacts to vegetation communities will be implemented in accordance with the table below. Preservation and creation of the following vegetation communities will ensure that the current range and distribution of special-status species within the County are maintained.

B. Wildlife Movement for future 4- and 6- and 8-lane roadway construction projects. Consideration of wildlife movement will be given by the County on all future 4-, 6, and 8-lane roadway construction and widening projects. Impacts on public safety and wildlife movement for projects that include new roads of 4 or more lanes or the widening of roads to 4 or more lanes will be evaluated during the development review process (see Section C below). The analysis of wildlife movement impacts will take into account the conditions of the project site and surrounding property to determine whether wildlife under crossings are warranted and, if so, the type, size, and locations that would best mitigate a project's impacts on wildlife movement and associated public safety.

C. Biological Resources Assessment. A site-specific biological resources technical report will be required to determine the presence of special-status biological resources that may be affected by a proposed discretionary project. Vegetation communities and special-status plants shall be mapped and assessed in accordance with the CDFG 2009 Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities and subsequent updates, and the List of Vegetation Alliances and Associations (CDFG 2010) and subsequent updates. Any surveys conducted to evaluate potential presence of special status wildlife species shall conform to practices recommended by CDFW and/or USFWS at the time of the surveys.

The report will include an assessment of direct, indirect and cumulative impacts to biological resources, including vegetation communities, plant and wildlife species and wildlife movement.

The report shall include recommendations for: • pre-construction surveys and avoidance/protection measures for nesting birds; • pre-construction surveys and avoidance/protection measures for roosting bats; • avoidance and minimization measures to reduce impacts related to entrapment, entanglement, injury, or poisoning of wildlife; and • avoidance and minimization measures to reduce indirect impacts to wildlife in open space adjacent to a project site. The results of the biological resources technical report shall be used as the basis for establishing mitigation requirements in conformance with this policy and the Oak Resources Management Plan (ORMP, see General Plan Policy 7.4.4.4).

D. Habitat Protection. Mitigation for impacts to vegetation communities defined above in Section A will occur within the County on a minimum contiguous habitat block of 5 acres. Wetlands mitigation may occur within mitigation banks and/or outside the County if within the watershed of impact. Mitigation sites will be prioritized based on the following criteria: • Location within PCAs and IBCs • Location within other important ecological areas, as defined in the Updated INRMP Initial Inventory and Mapping (June 2010); • Woodland, forest and shrub communities with diverse age structure; • Woodland and forest communities with large trees and dense canopies; • Opportunities for active land management to be used to enhance or restore natural ecosystem processes; • Presence of or potential to support special-status species; • Connectivity with adjacent protected lands; • Parcels that achieve multiple agency and community benefits; • Parcels that are located generally to the west of the Eldorado National Forest; and • Parcels that would preserve natural wildlife movement corridors such as crossings under major roadways (e.g., U.S. Highway 50 and across canyons).

E. Mitigation Assistance. The County will establish and maintain a database of willing sellers of land for mitigation of biological resource impacts within the County. The County will manage the database as a voluntary program wherein landowners must opt-in to be included in the database by contacting the County. The database will include the following information: • Property owner name • Assessor's Parcel Number • Parcel acreage • General vegetation communities as mapped in the California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) database • Location within PCA, IBC, or important ecological area, as defined in the Updated INRMP Initial Inventory and Mapping (June 2010).

F. Mitigation Monitoring. Prior to final approval of an individual development project, applicants shall submit to the County a Mitigation Monitoring Plan that provides for periodic monitoring of preserved lands to assess effectiveness of the measures implemented to protect special-status and native species. The Mitigation Monitoring Plan shall demonstrate that funding is secured to implement the monitoring strategy in perpetuity.

### **3 METHODOLOGY**

In order to evaluate the Project area for the presence of any sensitive biological resources, baseline information from databases and reporting for similar projects in the Sierra Nevada foothills and El Dorado County was collected and reviewed prior to conducting reconnaissance-level field biological surveys. The database searches, background research, and habitat level field surveys characterized the baseline conditions of the Project area. Based on the baseline conditions of the Project area, an assessment was implemented to determine if any special-status plant or wildlife species use the Project area at any time during their life cycle. The baseline conditions also identified the presence of any sensitive habitat or communities, including “waters of the U.S.,” including wetlands, that have been identified and mapped within the Project area.

#### **3.1 Sensitive Biological Resources Background Review**

The following information was used to identify potential sensitive biological resources, including the presence of special-status plant and wildlife species, within the Project area region that could be found to use the Project area:

- California Department of Fish and Wildlife’s California Natural Diversity Database records search of 3-mile buffer around the Project area (CDFW, 2020 and updated 9 Quad list in September 2023);
- The California Native Plant Society’s Online Inventory of Rare and Endangered Plants of California for the Project area and El Dorado County (CNPS, 2020 updated 9 Quad list in September 2023);
- The U.S. Fish and Wildlife Service Information, Planning, and Consultation System (IPaC) for endangered, threatened, and proposed listed species for the Project area (USFWS, 2020);
- National Wetland Inventory map of the Project area (NWI, 2020);
- United States Department of Agriculture (USDA) Soils Mapper of the Project area (USDA, 2020);
- Natural Resources Conservation Service (NRCS) Hydric Soils List for El Dorado County (NRCS, 2020); and
- El Dorado County Land Use and Development Code, Ordinances, and General Plan.

#### **3.2 Reconnaissance Level Biological Resources Field Surveys**

Reconnaissance-level biological resources field surveys were conducted on foot for the entirety of the Project area by Greg Matuzak, Principal Biologist and owner of Greg Matuzak Environmental Consulting LLC. Field surveys were conducted on December 31<sup>st</sup>, 2020. Follow up reconnaissance-level biological resources field surveys were not required or conducted by Greg Matuzak given the initial site visit and field surveys were conducted within an area that does

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not contain suitable habitat for potential special-status plant species. Only five (5) special-status plant species have been previously documented within the Aukum Quad where the Project is located and only a single species is CNPS listed as a higher ranking than the watchlist ranking of 4 (see attached CNPS list). Additionally, no special-status plant species had been previously identified and mapped within 3 miles of the Project area per CNDDB. The purpose of the surveys completed in December 2020 was to identify habitat and vegetation types and to determine the potential for any special-status plant and wildlife species identified in the desktop analysis and background research to occur within the Project area. Additionally, the surveys were focused on the presence/absence of special-status plant species to identify their occurrence within the proposed disturbance areas within the Project area.

For a review of the Project area and its relation to the existing not watercourse (seasonal drainage/stream) located to the north and northeast of the subject parcel, a review of the National Wetland Inventory federal aquatic resources database was reviewed (see results within the appendices to this report) and review the most recent Google Earth imagery covering the Project area to estimate the distance of the watercourse from the northern/northeastern edge of the proposed disturbance from the southern edge of the watercourse. Site surveys confirmed the lack of federal and State of California aquatic resources mapped within the Project area and the site survey included a review of the watercourse in question to the north/northeast of the Project area within the subject parcel.

### **3.3 Project Area Characterization**

All vascular plant species identified at the time of the surveys were recorded using keys and descriptions in *The Jepson Manual* (Baldwin et al., 2012). Additionally, vegetation types have been classified by wildlife habitats/vegetation types using the California Department of Fish and Game's (CDFG) *A Guide to Wildlife Habitats* (Mayer and Laudenslayer, 1988). A list of plant and wildlife species identified within the Project area as part of the development of this Biological Report is located in Appendix E.

## **4 ENVIRONMENTAL SETTING**

### **4.1 Environmental Setting**

The Project area is located in El Dorado County, CA in the northern-central Sierra Nevada foothills. The Sierra Nevada foothills lie between the western edge of the Sierra Nevada and the eastern border of the Central Valley. The foothills form a belt 10 to 30 miles wide that ranges from 500 to 5,000 feet in elevation in a series of northwest to north-northwest aligned ridges that decline in elevation from northeast to southwest. Many rapidly flowing rivers and streams run westerly in deeply incised canyons with bedrock channels to the Central Valley and eventually to the Pacific Ocean. Alluvial fans, floodplains, and terraces are not extensive; and all but the largest streams are generally dry during the summer. Dominant vegetation communities include grasslands, oak woodlands, and chaparral.

Vegetation communities within the Project area are typical of the lower Sierra Nevada foothills. The terrain within the Project area is typical of the lower Sierra Nevada foothills that normally vary between flat ridges and valleys to gently and moderately sloping hillsides. The Project area elevation ranges from approximately 1,750 to 2,015 feet above mean sea level (MSL) with the high elevation being located at the southern entrance into the subject parcel off of D'Agostini Drive and the low elevation located within the northern section of the subject parcel where a small seasonal drainage crosses the subject parcel.

Natural hydrological sources for the Project area include precipitation and surface run-off from adjacent lands. Mean annual rainfall in the area is 39 inches (NRCS, 2020). During rain events over the previous month prior to the field surveys, no surface water was identified within the Project area. The subject parcel contains a single blue line feature, which can best be described as a seasonal drainage/stream located within the northern section of the subject parcel, which is mapped on the USGS and NWI and NHD maps covering the subject parcel. The blue line feature is located a minimum of 285 feet to the north and northeast of the proposed Project disturbance areas within the subject parcel. The closest named streams to the subject parcel include Scott Creek to the south and Spanish Creek to the north with both being located greater than 0.5 miles from the subject parcel. No aquatic features or habitats within the subject parcel are located within or directly adjacent to the Project area.

### **4.2 Project Area Soil Types**

The USDA Soil Survey Mapper (USDA, 2020) identifies several soil types within the Project area. USDA soil mapping for the Project area is included in Appendix C and indicates that the proposed Project area (where disturbance is proposed) contains the following soil type: Musick very rocky sandy loam, 15 to 50 percent slopes. Soils in the Musick series consist of very deep, well drained soils formed in colluvium over residuum from intrusive igneous rocks. Musick soils are on foothills and mountains. This soil series is not derived from parent material that is gabbrodiorite or serpentine.



### 4.3 Project Area Vegetation Communities

The attached El Dorado County GIS habitat layer identifies the subject parcel as containing areas that are Developed and areas that are mapped as Oak Woodlands (see Appendix B). However, though a majority of the subject parcel is covered in woodlands, it is clear from the photos attached in Appendix F that the subject parcel is dominated by ponderosa pine woodlands and not oak woodland.

Vegetation community types within the Project area are described below.

#### Annual Grassland

Within the annual grasslands within the subject parcel, the following species are dominant: slender wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), softchess (*Bromus hordeaceus*), medusahead (*Taeniatherum caput-medusae*) and yellow-star thistle (*Centaurea solstitialis*). Most native grasslands in El Dorado County have been replaced by non-native invasive plants and the majority of the annual grassland habitat identified within the subject parcel is dominated by non-native annual grassland species and many are considered invasive. There is minimal annual grassland within the subject parcel; however, it is located within and adjacent to the Project area given the open and disturbed nature of the areas where previous disturbance and development have occurred within the subject parcel.

#### Cultivated/Planted Vineyards

Two areas planted with vineyards include a large vineyard directly to the northeast of the southern entrance into the subject parcel (southern vineyard) and the large vineyard where the proposed Project will be located (northern vineyard).

#### Ponderosa Pine

Ponderosa Pine is a co-dominant habitat type within the subject parcel along with annual grasslands and cultivated/planted vineyards as described above. Ponderosa pine (*Pinus ponderosa*), incense cedar (*Calocedrus decurrens*), and interior live oak trees (*Quercus wislizeni*) are the dominant species within this habitat type. Additionally, some scattered smaller California oak trees (*Quercus kelloggii*) were identified within the subject parcel and directly adjacent to the existing residence and cultivation area.

No native oak trees will be removed as part of the development of the proposed Project. The cultivation area, accessory areas, parking, and access road to the cultivation area are all located within open, disturbed areas dominated by non-native annual grassland species, ponderosa and incense cedar trees, and cultivated/planted vineyards; therefore, native oak trees will be avoided and no such oak trees are proposed to be removed.

## 5 RESULTS

Special-status species were considered for the Project area based on a current review of the CNDDDB and database information provided by the United States Fish and Wildlife Service and California Native Plant Society as well as the reconnaissance-level biological resources surveys.

### 5.1 Special-Status Species

Based on the results of the database searches, two (2) special-status wildlife and fish species were identified as previously occurring within 3 miles of the Project area. No special-status plant species have been previously identified within 3 miles of the Project area. A description of the special-status species previously known to occur within 3 miles of the Project area (CNDDDB, 2020) are discussed below (see Appendix G for a CNDDDB 3-mile buffer figure and a list of the species identified in a 9 Quad CNDDDB and CNPS search, CNDDDB and CNPS 2023).

Only five (5) special-status plant species have been previously documented within the Aukum Quad where the Project is located and only a single species is CNPS listed as a higher ranking than the watchlist ranking of 4 (see attached CNPS list). Additionally, no special-status plant species had been previously identified and mapped within 3 miles of the Project area per CNDDDB. The Project disturbance areas are located within Musick soils and this soil series is not derived from parent material that is gabbrodiorite or serpentine. Therefore, the only CNPS plant previously identified within the Aukum Quad that is not listed as a watchlist species is the Red Hills soaproot (*Chlorogalum grandiflorum*) and the species is ranked by CNPS as a 1B.2. However, the species has not been identified within 3 miles of the Project area and the Project area does not contain suitable habitat for this species. Furthermore, the additional CNPS List 4 species previously identified within the Aukum Quad where the Project is located are found within habitats that do not occur within the proposed Project disturbance areas.

No special-status plant species were identified within the Project area during reconnaissance-level surveys nor were any special-status wildlife species identified within the Project area. The CNDDDB results for the Aukum Quad where the proposed Project is located includes aquatic species and owl and raptor species that require very specific habitats such as old growth forests for nesting or large meadows adjacent to nesting areas for foraging and these habitats do not occur within the Project area. In addition, no USFWS Designated Critical Habitat (DCH) has been mapped by USFWS for any federally listed species within the vicinity of the Project area. The following two species are the only special-status species previously mapped within 3 miles of the Project area per a review of CNDDDB GIS data.

#### Central Valley Drainage Hardhead/Squawfish Stream – CDFW Sensitive Community

This CDFW mapped sensitive habitat community is not located within or adjacent to the Project area or subject parcel. Additionally, hardhead and squawfish are not located within the Project area given the lack of stream habitat within or adjacent to the Project area. CDFW has mapped this sensitive habitat community to the north and northwest of the subject parcel within

the Middle Fork of the Cosumnes River. Therefore, this sensitive stream habitat and sensitive species would not be impacted by the development of the proposed Project.

Great Gray Owl (*Strix nebulosa*) – Listed as Endangered under CESA

Permanent resident in the Sierra Nevada. Permanent resident in the Sierra from 4,500 – 7,500 feet MSL. Associated with old-growth coniferous forests bordering large meadow systems. Nesting typically occurs in broken top snags of dead trees, usually 24-inch dbh or greater for nesting. Does not build nests. May use old hawk or eagle nests. Forages in meadows. Generally, nests are in close proximity to meadows, but not always. This species is known from the western Sierra Nevada in the ponderosa pine zone.

This species has been previously documented within 3 miles to the east of the subject parcel. The subject parcel does not provide suitable nesting opportunities given the species prefers larger, old growth forested habitat for nesting and large meadows for foraging, neither of which occur within the subject parcel. Therefore, the proposed Project would have no impact on the species.

Nesting raptors and other migratory bird species - Protected under CA State DFG Code Sections 3503, 3503.5, and 3800

There is a low to moderate potential for nesting raptors and other nesting migratory bird species to occur within and directly adjacent to the Project area. The Project area contains suitable nesting habitat for bird species, such as tree nesting species (Cooper's hawk and other common raptors) and ground nesting species like the spotted towhee (*Pipilo maculatus*) and dark-eyed junco (*Junco hyemalis*). Additional species that are known to nest in shrub and tree habitat have the potential to nest adjacent to the Project area. The nesting season for raptors and other protected nesting birds within the Project area occurs between March 1<sup>st</sup> and August 31<sup>st</sup>.

## 6 CONCLUSIONS AND RECOMMENDATIONS:

These conclusions and recommendations are based on the findings of this Biological Report and the impact assessment based on the Project Understanding outlined in Section 1.2 above. The impact assessment and recommendations below are based on the proposed Project components that would require disturbance within the Project area. These project components area included in the Site Plan attached in Appendix B.

Under CEQA, the following conclusions of this Biological Report for potential impacts not requiring mitigation include the following:

- There are no pond, wetland, stream, or other aquatic habitat features within the proposed Project disturbance areas; therefore, the proposed Project would not be subject to permitting requirements under the Clean Water Act.
- There are no stream or riparian zone habitat features within 285 feet of the Project area; therefore, the proposed Project would not be subject to permitting requirements by CDFW (Streambed Alteration Agreement not required) and it will be located outside of the State Water Board's 100-foot setback requirement for intermittent and seasonal streams.
- However, the subject parcel does contain a seasonal drainage/stream that runs within the northern/northeastern section of the subject parcel and the southern edge of the watercourse is located a minimum of 285 feet from the closest location to the proposed Project disturbance area, which is the northeast corner of the vineyard/Project area where there is a gate. Therefore, the applicant will implement the Best Management Practices and other mitigation measures included below as part of a waiver request under Ordinance 5110 to demonstrate that the actual 300-foot El Dorado County setback will be substantially achieved for the purpose of their required setback.
- Wildlife movement corridors typically are associated with ridgelines and valleys, rivers, and creeks supporting riparian vegetation. The proposed Project area does provide good cover for movement and foraging for many species; however, more typical movement corridors are available adjacent to the Project area within and adjacent to the subject parcel. Proposed Project development would temporarily impede wildlife use of the Project area; however, these Project related effects would be localized and would not substantially affect wildlife movements. No wildlife nursery sites are in the proposed Project area. The impact would be less than significant. No mitigation is required.
- Proposed Project area development would not conflict with any known local policies or ordinances and would be consistent with provisions of the El Dorado County General Plan Conservation and Open Space Element. The proposed Project is not within an important biological corridor or priority conservation area as identified in the general plan. No impact would occur.
- No draft or adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans exist. No impact would occur.

For sensitive biological resources that have the potential to be impacted by the implementation of the proposed Project, avoidance, minimization, and mitigation measures are proposed to ensure that such disturbance does not cause a significant impact on any sensitive biological resources within the Project area.

## **Proposed Avoidance, Minimization, and Mitigation Measures**

### **6.1 Potential Impacts to Special-Status Species**

Special-status plant surveys were conducted within the Project area during December 2020, which does not coincide with the typical blooming period of the special-status plant species that would normally have the potential to occur within the subject parcel and greater Project area (see the attached 9 Quad and Aukum Quad CNPS search identifying CNPS ranked species previously identified within the Aukum Quad where the Project is located and the blooming period for those species which runs from February through August). However, no special-status plant species have been previously identified within 3 miles of the Project area and no special-status plants were documented within the Project area during the site visit and surveys conducted as part of the development of this Biological Report.

Only five (5) special-status plant species have been previously documented within the Aukum Quad where the Project is located and only a single species is CNPS listed as a higher ranking than the watchlist ranking of 4 (see attached CNPS list). The Project disturbance areas are located within Musick soils and this soil series is not derived from parent material that is gabbrodiorite or serpentine. Therefore, the only CNPS plant previously identified within the Aukum Quad that is not listed as a watchlist species (CNPS Rank 4) is the Red Hills soaproot (*Chlorogalum grandiflorum*) and the species is ranked by CNPS as a 1B.2. However, the species has not been identified within 3 miles of the Project area and the Project area does not contain suitable habitat for this species given the lack of required soil types for this species.

Therefore, there is a very low likelihood that the Project area would contain a protected special-status plant species listed by CNPS and per CEQA requirements based on the results of the background research and database searches, the December 2020 surveys conducted within the Project area, and the heavy disturbance along the access road and vineyard where the proposed Project disturbance will be located. Additionally, the Project area does not contain suitable habitat for special-status wildlife species and therefore, the Project would have no impact on special-status wildlife species previously identified within 3 miles of the subject parcel or any other such species.

However, to ensure that no special-status plant species previously identified within the attached 9 Quad search or within the Aukum Quad where the Project is located, prior to the implementation of future ground disturbing activities within the Project disturbance areas, an additional special-status plant survey will be required to document the presence or absence of each of the special-status plant species with potential to occur within the Project area, even though the potential presence of such plant species is considered very low.



If any special-status plant species is documented within or directly adjacent to areas proposed for disturbance within the Project area that are CNPS list 1A, 1B, 2A, or 2B per CEQA Guidelines Section 15380, or are listed under the ESA and/or CESA, protection of such plants would include complete avoidance, transplantation, and/or on- or offsite restoration of the special-status plant species that could be impacted by such site disturbance.

Disturbance related impacts to CNPS list 3 and list 4 species **would not** be considered a “significant” impact requiring additional mitigation under CEQA Guidelines Section 15380. Therefore, the proposed Project would have a **less than significant** impact on special-status plant species with the implementation of the **mitigation measures** outlined above for special-status plants.

## **6.2 Potential Impacts to Nesting Raptors and other Protected Bird Species**

Given the Project area contains some medium sized trees and many of those trees contain suitable habitat for nesting raptors and other protected bird species, removal of such trees should be done outside the breeding season, if possible, to avoid potential impacts to such protected nesting bird species. The breeding season for raptors and MBTA protected bird species in the vicinity of the Project area is generally from March 1 to August 31. Vegetation clearing or tree removal outside of the breeding season for such bird species would not require the implementation of any avoidance, minimization, or mitigation measures. However, construction or development activities during the breeding season could disturb or remove occupied nests of raptors and would require the implementation of a pre-construction survey within 250 feet of the any disturbance area within the Project area for nesting raptors and other protected bird species within 14 days prior to disturbance.

**Avoidance:** Vegetation clearing or tree removal outside of the breeding season for such bird species and/or avoidance of such potential nesting habitat would not require the implementation of any avoidance, minimization, or mitigation measures.

**Mitigation:** Construction or disturbance activities during the breeding season could disturb or remove occupied nests of raptors and/or protected bird species and would require the implementation of a pre-construction survey within and adjacent to any proposed disturbance area within the Project area for nesting raptors and other protected bird species within 14 days prior to disturbance. The nesting survey radius around the proposed disturbance would be identified prior to the implementation of the protected bird nesting surveys by a CDFW qualified biologist and would be based on the habitat type, habitat quality, and type of disturbance proposed within or adjacent to nesting habitat.

If any nesting raptors or protected birds are identified during such pre-construction surveys, trees or shrubs or grasslands with active nests should be not be removed or disturbed and a no-disturbance buffer should be established around the nesting site to avoid disturbance or destruction of the nest site until after the breeding season or after a qualified wildlife biologist

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determines that the young have fledged. The extent of these buffers would be determined by a CDFW qualified wildlife biologist and would depend on the special-status species present, the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors should be analyzed by a qualified wildlife biologist to make an appropriate decision on buffer distances based on the species and level of disturbance proposed in the vicinity of an active nest.

Therefore, the proposed Project would have a **less than significant** impact on nesting raptors and other protected bird species with the implementation of the **mitigation measures** outlined above.

### 6.3 El Dorado County Oak Resources Conservation Ordinance

The Project applicant will comply with the El Dorado County Oak Resources Conservation Ordinance. No oak trees will be removed as per the current Site Plan for the proposed Project. However, if any changes occur to the Site Plan that would require the removal or work within the dripline of any protected oak resources, the following would be required to be implemented prior to the removal of or any impacts to oak trees and oak resources:

- Permits for removal of Oak Resources are required for any non-exempt action requiring discretionary development entitlements or approvals from the County such as an ADP cannabis cultivation permit. *An Oak Resources Technical Report prepared by a certified arborist, qualified wildlife biologist or a Registered Professional Forester is required prior to issuing a permit to remove any Oak Resources.*
- The ORMP requires mitigation for permitted oak tree removal under the ORMP including: on-site retention; replacement planting on-site and off-site; and in-lieu fees that will be used to acquire land and/or conservation easements to conserve oak woodlands, and to plant and maintain native oak trees. (Under the prior General Plan Policy tree canopy retention was the only mitigation option available.) All mitigation requires additional permits depending upon the mitigation option chosen.
- To encourage on-site retention of oak woodlands, the ORMP requires increasing mitigation ratios based on the amount of oak woodland removed: Removing 50 percent or less requires a 1-to-1 ratio of mitigation, removing up to 75 percent requires a 1.5-to-1 ratio of mitigation, and removing up to 100 percent requires a 2-to-1 ratio of mitigation. Mitigation of oak woodlands would consist of one of the options described above: on-site retention; replacement planting on-site and off-site; and/or in-lieu fees.
- A security deposit is required for all discretionary projects proposing on-site oak tree/oak woodland retention and/or replacement planting as mitigation. No grading or other on-site work shall be permitted until the security deposit is posted.
- The in-lieu fee for removal of *oak woodlands* is calculated based on total cost per acre which is currently set at \$8,285. The in-lieu fee for removal of *individual oak trees* is calculated on a total cost per inch which is currently set at \$153 for a non-Heritage Tree

and \$459 per inch for a Heritage Tree at a 3-to-1 ratio. The per-inch fee shall be multiplied by the total number of trunk diameter inches removed. The in-lieu fees collected will be deposited in the County's Oak Woodland Conservation Fund. That fund will be used to acquire land and/or conservation easements to conserve oak woodlands, provide for native oak tree planting, and for ongoing conservation area monitoring and management activities.

Therefore, the proposed Project would have a **less than significant** impact on protected oak resources with the implementation of the **mitigation measures** outlined above, if such resources may be impacted by the proposed Project.

#### **6.4 El Dorado County Ordinance 5110 Ordinance: Stream Setback Requirements**

El Dorado County Ordinance 5110 Article 4 (Section 130.41.200.5.C) covers outdoor and mixed-light cultivation of commercial cannabis within El Dorado County and includes the following regarding stream setbacks:

- **Setbacks.** Outdoor or mixed-light cultivation of commercial cannabis shall be setback a minimum of 800 feet from the property line of the site or public right-of-way and shall be located at least 300 feet from the upland extent of the riparian vegetation of any watercourse.

The Project area does not contain any watercourses or other aquatic resources such as ponds or wetlands. Site surveys confirmed the lack of federal and State of California aquatic resources mapped within the proposed Project disturbance area and therefore, the proposed Project would have no direct impact on any watercourses or other aquatic resources protected under local, state, or federal regulations. However, a seasonal drainage runs within the northern section of the subject parcel a minimum of 285 feet from the Project area at its closest location to the proposed Project disturbance area, which is the northeast corner of the vineyard/Project area where there is a gate. The seasonal drainage runs at the bottom of two steep slopes (to the north and south) and does not contain riparian vegetation or other wetland indicators. It contains rocky, unvegetated substrate with upland vegetation along its banks and therefore, the 285-foot estimate is from the southern top of back of the seasonal watercourse given there is no riparian vegetation along the edges of the seasonal drainage/stream.

Therefore, the applicant is requesting a waiver to construct and operate the proposed Project within the 300-foot required Ordinance 5110 setback for streams. Given the distance the seasonal drainage is located from the proposed Project disturbance area and given the dense vegetation between the southern edge of the seasonal drainage from the northern and northeastern edge of the Project area, construction and operational sedimentation caused by erosion would be highly unlikely to occur as part of the proposed Project. However, to ensure that any potential erosion that may occur during construction and operation of the Project will not pollute the seasonal drainage/stream with sedimentation or runoff, the following measures shall be included during construction and immediately after construction is completed to ensure that the proposed Project does not indirectly impact the seasonal drainage/stream:

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- Limit construction to periods of extended dry weather and/or the dry summer season to the extent feasible;
- Establish the area around the seasonal drainage/stream as an Environmentally Sensitive Area (ESA) where those areas will not be impacted by construction unless otherwise included in regulatory permits for such impacts;
- No fill or dredge material will enter or be removed from the seasonal drainage/stream during construction unless otherwise included in regulatory permits for such impacts;
- Use appropriate machinery and equipment to limit disturbance in those areas;
- Placement of straw and/or other soil erosion control devices between the seasonal drainage/stream and the areas where vegetation removal will occur to limit potential runoff and sedimentation into the stream channel;
- No dewatering of the seasonal drainage/stream will occur as part of the proposed construction unless otherwise included in regulatory permits for such actions; and
- Implement Best Management Practices during and immediately following construction.

To further protect the seasonal drainage/stream and its setback areas, as well as water quality and downstream water resources, the contractor shall implement standard Best Management Practices during and immediately after construction. These measures should include, but are not limited to:

- Minimize the number and size of work areas for equipment and spoil storage sites in the vicinity of the seasonal drainage/stream. Place staging areas and other work areas outside of the 300-foot setback within the Project area.
- The contractor shall exercise reasonable precaution to protect the seasonal drainage/stream as well as adjacent setback areas from pollution with fuels, oils, and other harmful materials. Construction byproducts and pollutants such as oil, cement, and wash water shall be prevented from discharging into or near these resources and shall be collected for removal off the site. All construction debris and associated materials and litter shall be removed from the work site immediately upon completion.
- No equipment for vehicle maintenance or refueling shall occur within the 300-foot stream setback areas. The contractor shall immediately contain and clean up any petroleum or other chemical spills with absorbent materials such as sawdust or kitty litter. For other hazardous materials, follow the cleanup instruction on the label.

Therefore, the proposed Project would have a **less than significant** impact on the seasonal drainage/stream and its 300-foot setback area with the implementation of the **mitigation measures** outlined above, if such resources may be impacted by the proposed Project. The Best Management Practices and other mitigation measures included

above demonstrate that the actual 300-foot El Dorado County setback will be substantially achieved for the purpose of their required setback.



## 7 REFERENCES

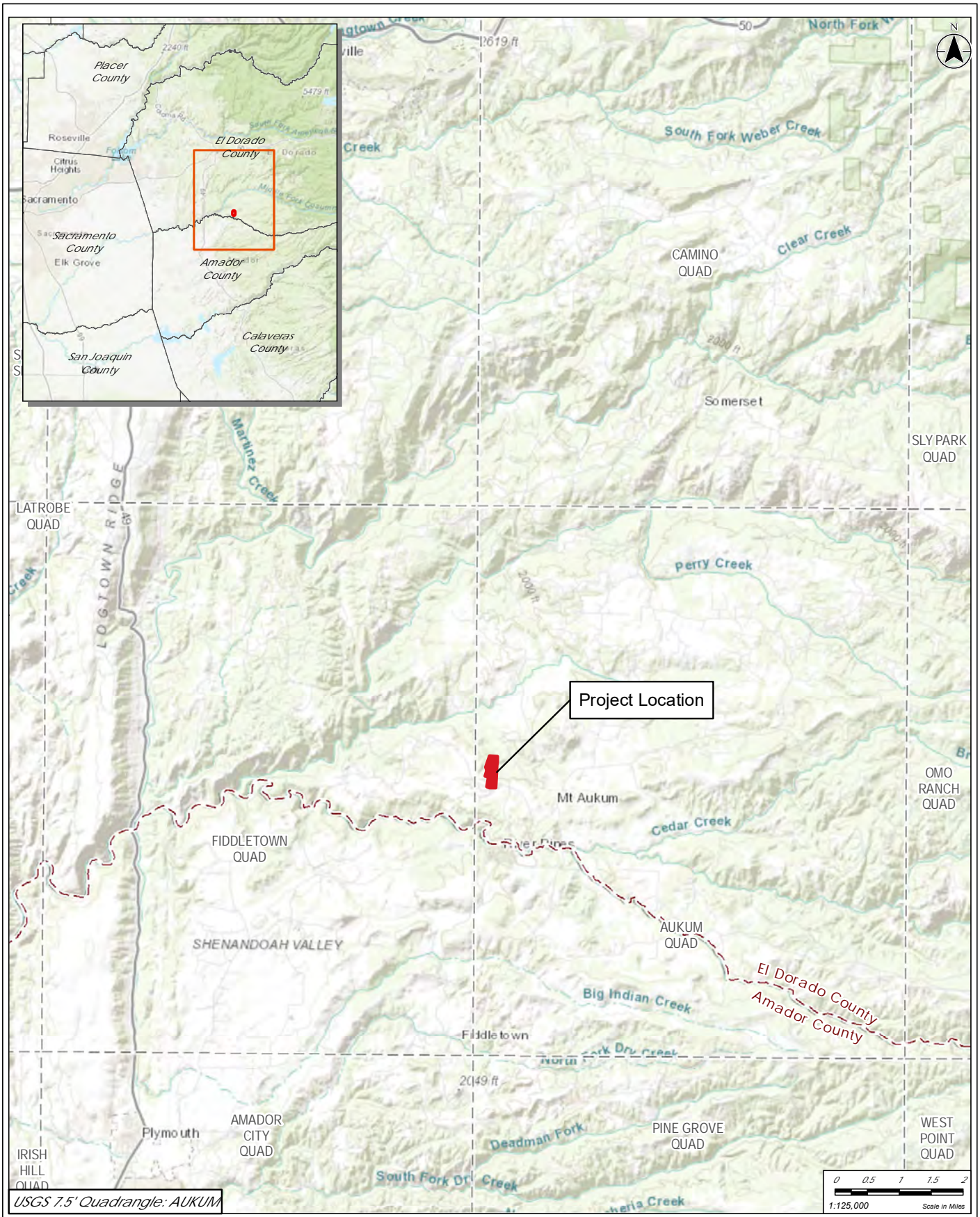
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## **Appendix A**

### **Project Overview Area Figures**

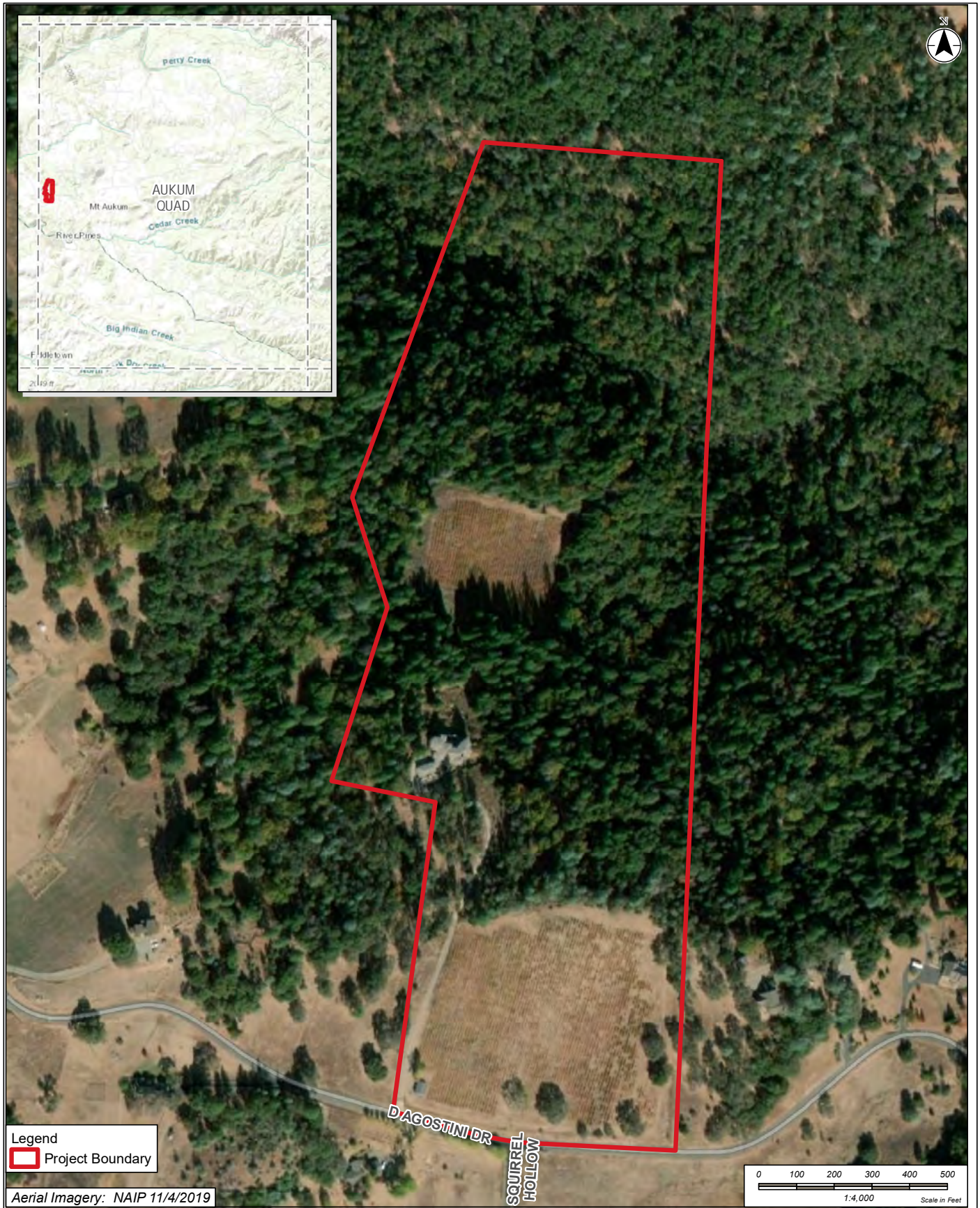


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Parcel No.: 046-710-017

**Figure 1. Vicinity Map**





Parcel No.: 046-710-017

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**Figure 2. Project Location Map**

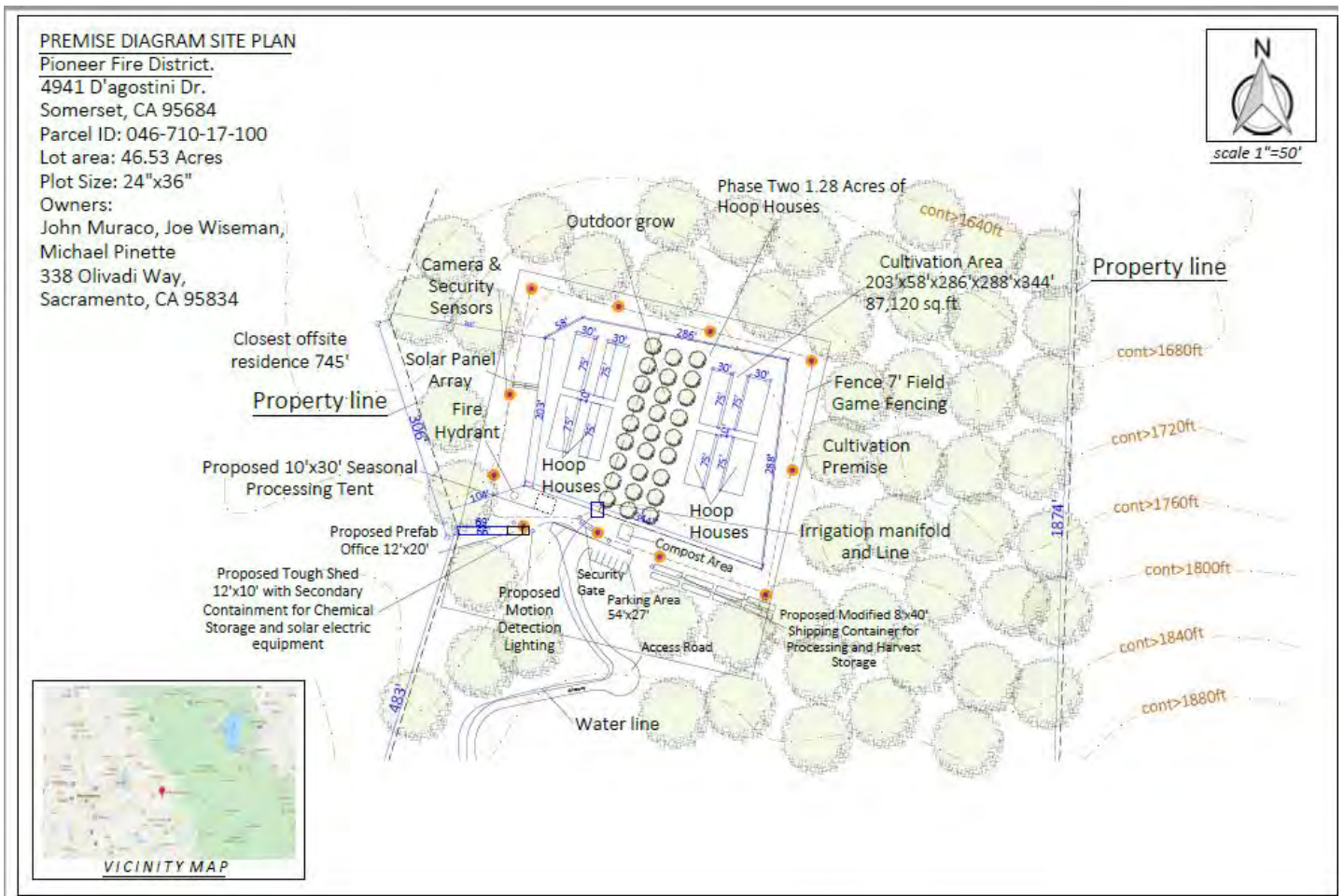
## **Appendix B**

### **Project Site Plan and Habitat Maps**

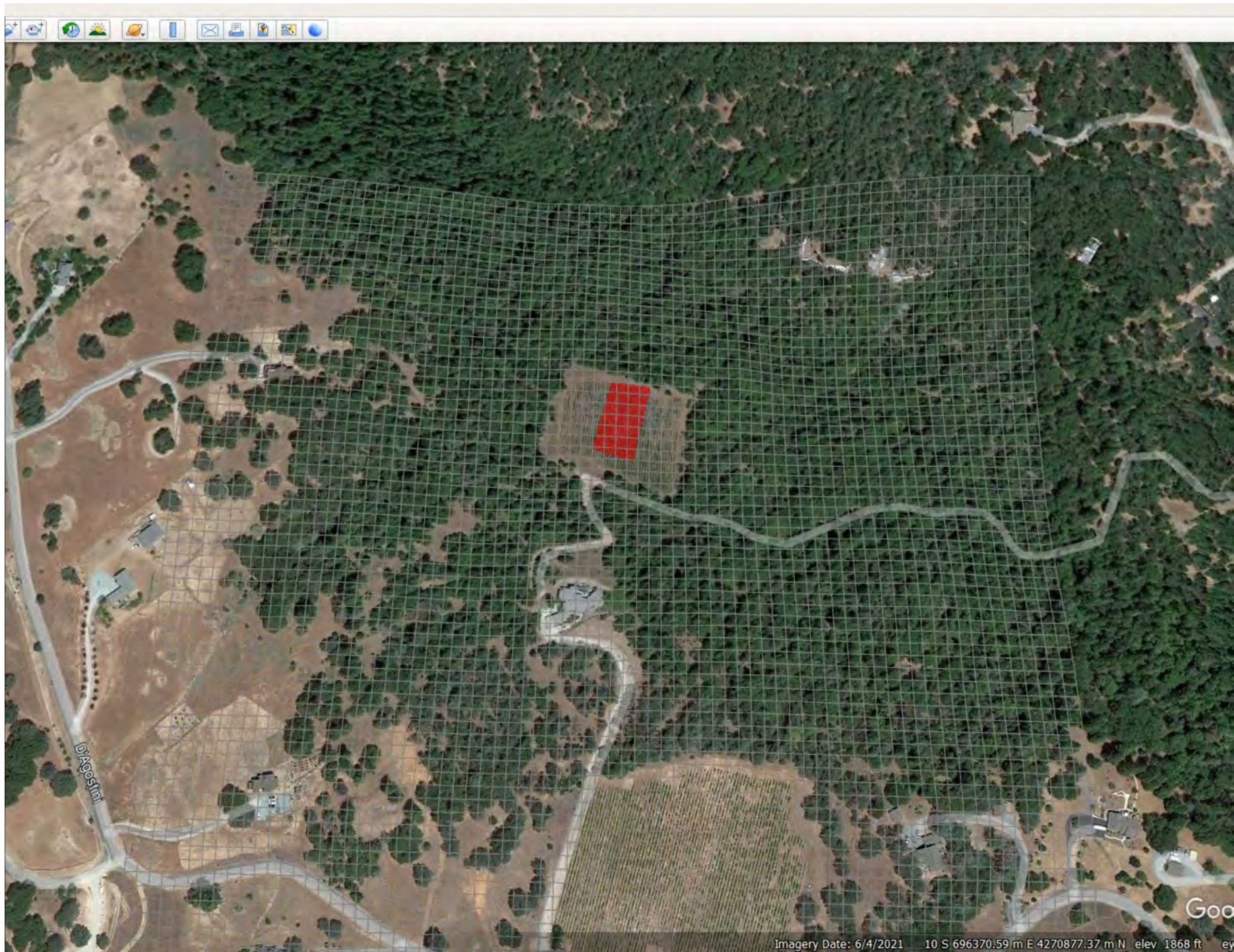
#### **Cultivation Impact Map in Red**



# Site Map












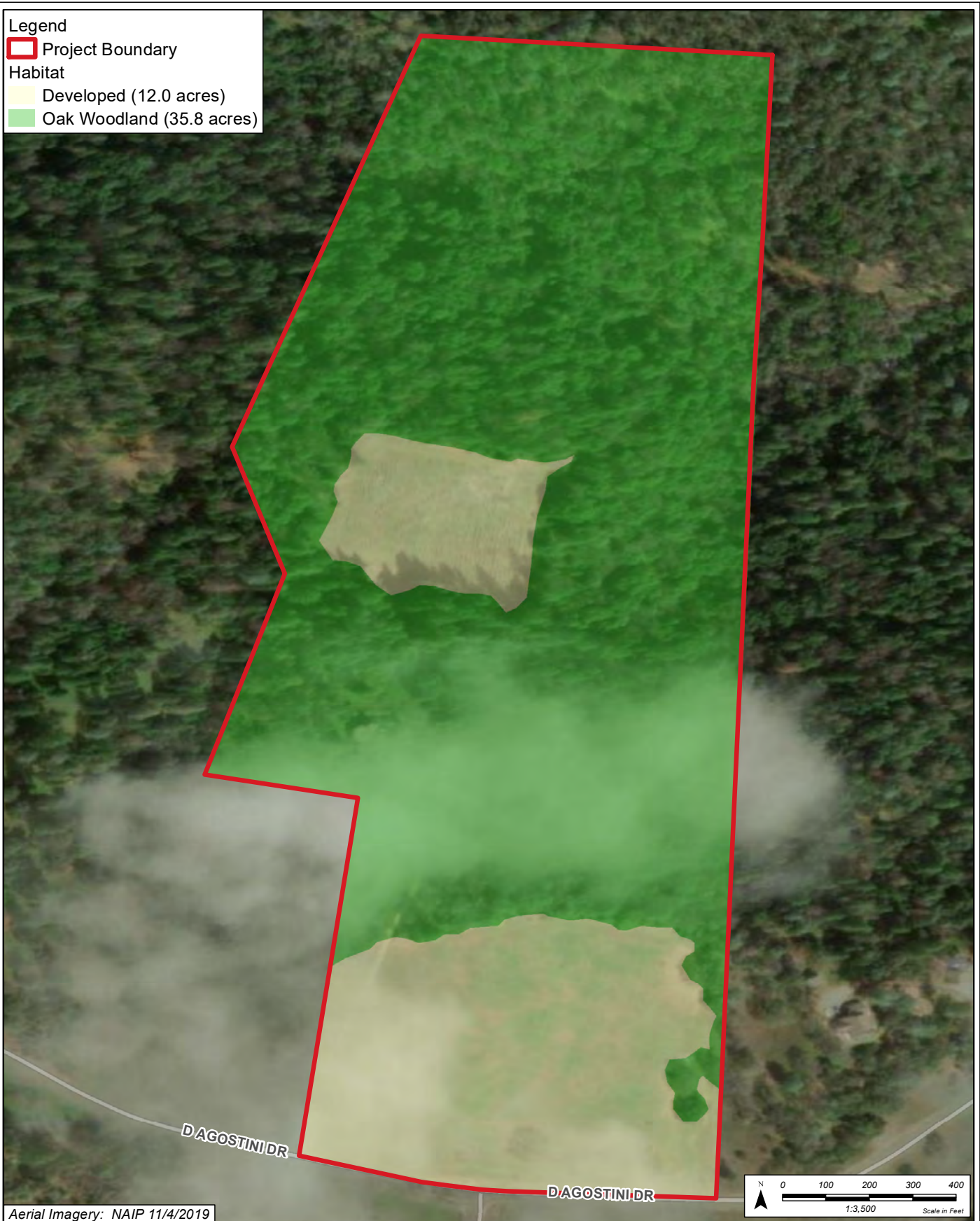
Legend

 Project Boundary

Habitat

 Developed (12.0 acres)

 Oak Woodland (35.8 acres)



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Nevada City, CA

Parcel No.: 046-710-017

Figure. Habitat Map

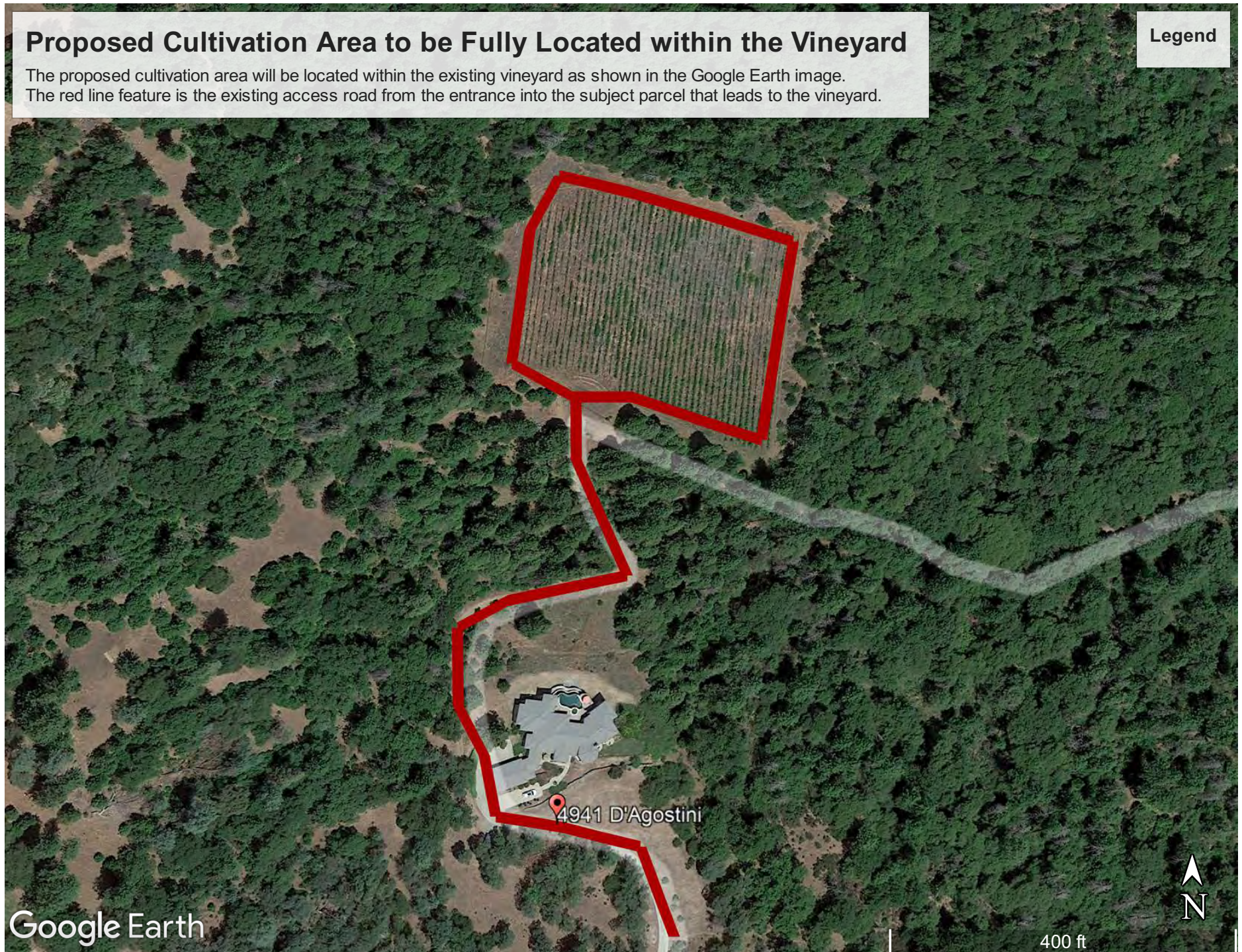


## Proposed Cultivation Area to be Fully Located within the Vineyard

The proposed cultivation area will be located within the existing vineyard as shown in the Google Earth image.

The red line feature is the existing access road from the entrance into the subject parcel that leads to the vineyard.

Legend

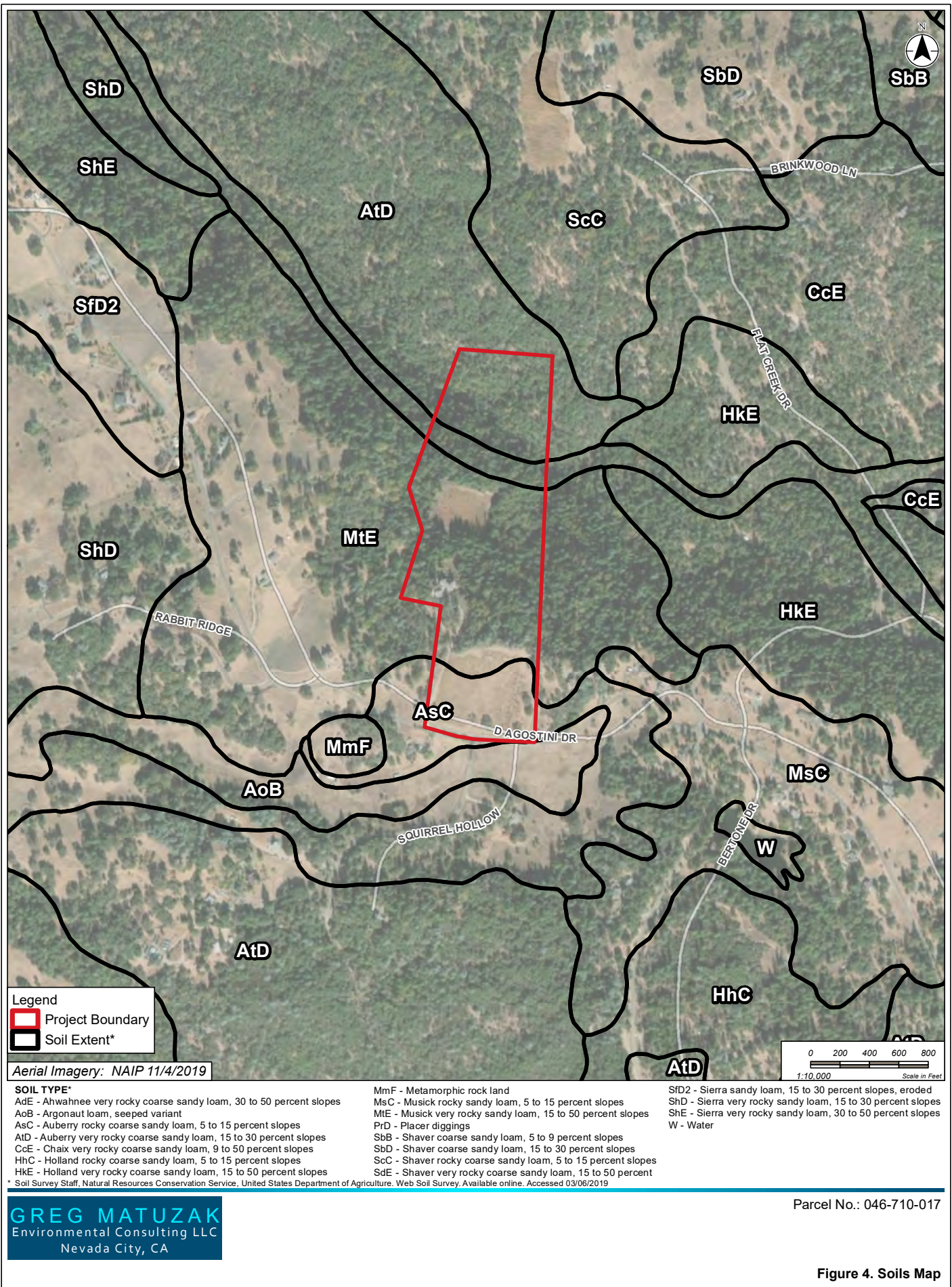


Google Earth



## **Appendix C**

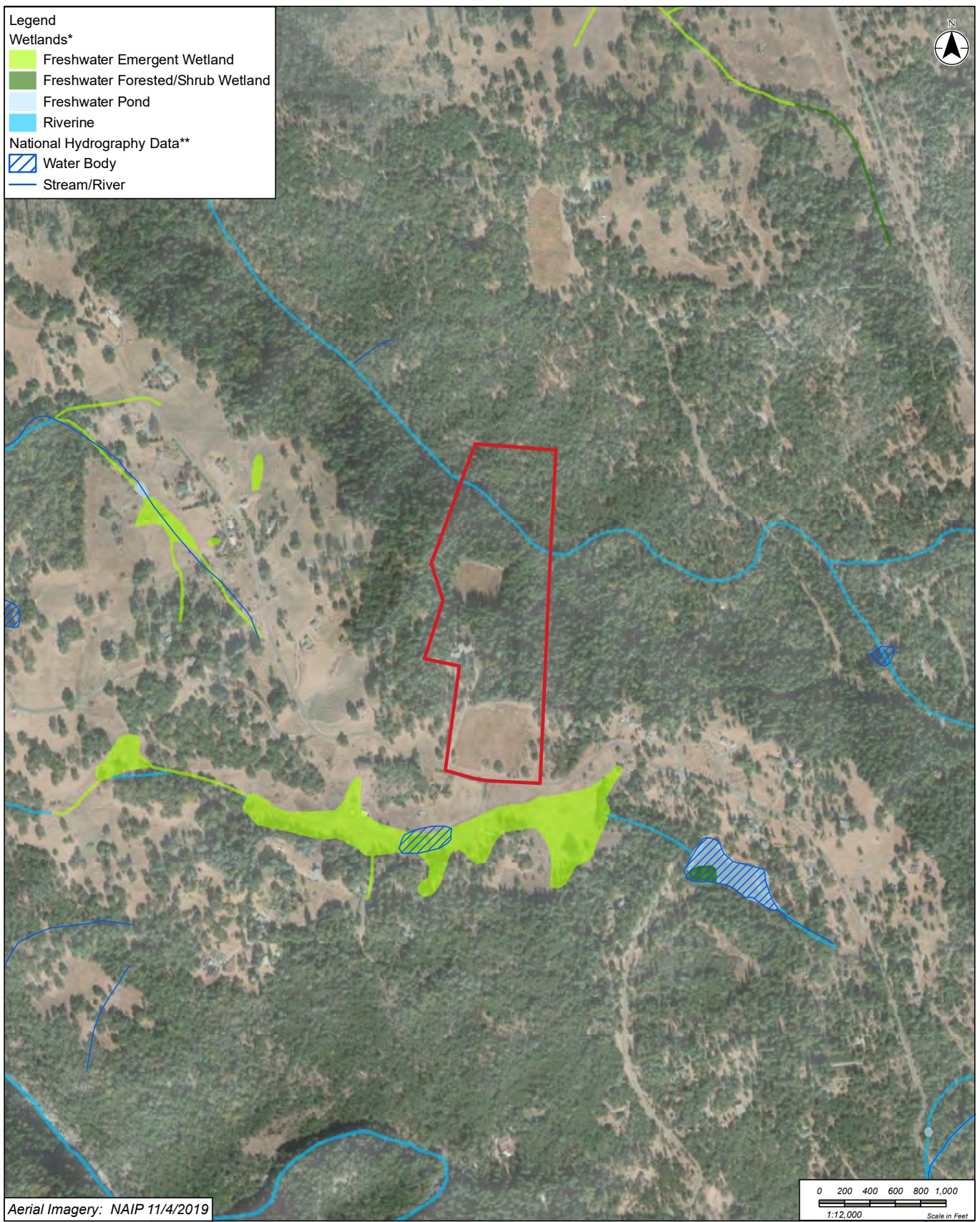
### **USDA Soils Map**



## **Appendix D**

### **National Wetland Inventory (NWI) Map**





**GREG MATUZAK**  
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Nevada City, CA

Parcel No.: 046-710-017

\* Data downloaded from <https://www.fws.gov/wetlands/Data/Data-Download.html> 8/14/2020  
 \*\* National Hydrography Dataset (NHD) downloaded from <http://nhd.usgs.gov> March, 2019  
 Prepared: Melissa Nugent 12/16/2020 E:\2020\_GIS\_Matuzak\20201216\_EIDorado\_046-710-17-100\mxd\Fig5\_NWI-NHD\_EIDorado\_046-710-17-100.mxd


**Figure 5. Wetlands and Water Features Map**



## Blue Line Feature Located >285 Feet from the NE corner of the Vineyard

The proposed cultivation area will be located within the existing vineyard as shown in the Google Earth image. Blue line feature at the toe of slope to the north of the vineyard is a minimum of 285 feet to the north/northeast of the proposed project disturbance. See attached NWI and NHD map to the report that accurately reflects the location of the blue line feature in relation to the project area.

### Legend

 Untitled Path





## **Appendix E**

### **Plants and Wildlife Observed During Site Surveys**

# Plant and Wildlife Species Observed during the Subject Parcel

## Site Surveys in December 2020

Common Name	Scientific Name	Species Status
<b>Plants</b>		
buttercup spp.	<i>Ranunculus</i> spp.	Not FESA, CESA, or CNPS listed
buckbrush	<i>Ceanothus cuneatus</i>	Not FESA, CESA, or CNPS listed
California black oak	<i>Quercus kelloggii</i>	Not FESA, CESA, or CNPS listed
California wild rose	<i>Rosa californica</i>	Not FESA, CESA, or CNPS listed
interior live oak	<i>Quercus wislizeni</i>	Not FESA, CESA, or CNPS listed
common mouse ear chickweed	<i>Cerastium fontanum</i>	Not FESA, CESA, or CNPS listed
common mullein	<i>Verbascum Thapsus</i>	Not FESA, CESA, or CNPS listed
common mustard	<i>Brassica rapa</i>	Not FESA, CESA, or CNPS listed
common periwinkle	<i>Vinca minor</i>	Not FESA, CESA, or CNPS listed
common sheep sorrel	<i>Rumex acetocella</i>	Not FESA, CESA, or CNPS listed
Cyptanth spp.	<i>Cryptantha</i> spp.	Not FESA, CESA, or CNPS listed
dandelion spp.	<i>Agoseris</i> spp.	Not FESA, CESA, or CNPS listed
deer brush	<i>Ceanothus Integerrimus</i>	Not FESA, CESA, or CNPS listed
English plantain	<i>Plantago lanceolate</i>	Not FESA, CESA, or CNPS listed
everlasting pea	<i>Lathyrus latifolius</i>	Not FESA, CESA, or CNPS listed

Common Name	Scientific Name	Species Status
filaree	<i>Erodium cicutarium</i>	Not FESA, CESA, or CNPS listed
honeysuckle spp.	<i>Lonicera</i> spp.	Not FESA, CESA, or CNPS listed
hyssop loosestrife	<i>Lythrum hyssopifolia</i>	Not FESA, CESA, or CNPS listed
incense cedar	<i>Calocedrus decurrens</i>	Not FESA, CESA, or CNPS listed
iris spp.	<i>Iris</i> spp.	Not FESA, CESA, or CNPS listed
poison oak	<i>Toxicodendron diversilobum</i>	Not FESA, CESA, or CNPS listed
ponderosa pine	<i>Pinus ponderosa</i>	Not FESA, CESA, or CNPS listed
ripgut brome	<i>Bromus diandrus</i>	Not FESA, CESA, or CNPS listed
St. John's wort; Klamath weed	<i>Hypericum perforatum</i>	Not FESA, CESA, or CNPS listed
shamrock clover	<i>Trifolium dubium</i>	Not FESA, CESA, or CNPS listed
soft chess	<i>Bromus hordeaceus</i>	Not FESA, CESA, or CNPS listed
stork's bill spp.	<i>Erodium</i> spp.	Not FESA, CESA, or CNPS listed
toyon	<i>Heteromeles arbutifolia</i>	Not FESA, CESA, or CNPS listed
white-leaved manzanita	<i>Arctostaphylos viscida</i> ssp. <i>viscida</i>	Not FESA, CESA, or CNPS listed
wild oats	<i>Avena fatua</i>	Not FESA, CESA, or CNPS listed
wild rye	<i>Elymus glaucus</i>	Not FESA, CESA, or CNPS listed
Yerba santa	<i>Eriodictyon californicum</i>	Not FESA, CESA, or CNPS listed

Common Name	Scientific Name	Species Status
yellow star thistle	<i>Centaurea solstitialis</i>	Not FESA, CESA, or CNPS listed
<b>Birds</b>		
American robin	<i>Turdus migratorius</i>	Not CESA or FESA listed. Migratory (active nests protected)
dark-eyed junco	<i>Junco hyemalis</i>	Not CESA or FESA listed. Migratory (active nests protected)
house finch	<i>Haemorhous mexicanus</i>	Not CESA or FESA listed. Migratory (active nests protected)
mourning dove	<i>Zenaida macroura</i>	Not CESA or FESA listed. Migratory (active nests protected)
northern flicker	<i>Colaptes auratus</i>	Not CESA or FESA listed. Migratory (active nests protected)
western scrub-jay	<i>Aphelocoma californica</i>	Not CESA or FESA listed. Migratory (active nests protected)



## **Appendix F**

### **Photo Log**

## Photos of the Field Surveys of the Project Study Area



Photo 1: Looking at the entrance into the subject parcel. Gravel road enters into parcel off of D'Agostini Drive and passes through the gate in the photo on the paved road.



Photo 2: Southern section of the subject parcel with a vineyard and structure.





Photo 3: Entry into the paved section of the subject parcel, which is dominated by annual grassland species and pine and oak trees. Photo looking south.



Photo 4: Paved access road within the subject parcel.





Photo 5: Paved access road entering into the parking area of the existing residence.



Photo 6: Existing residence within the subject parcel. Photo looking northeast.





Photo 7: Beginning of unpaved access road down to the northern vineyard and the proposed cultivation area.



Photo 8: Beginning of unpaved access road down to the northern vineyard and the proposed cultivation area. Photo looking north.





Photo 9: Lower end of of unpaved access road down to the northern vineyard and the proposed cultivation area. Photo looking south towards residence.



Photo 10: End of the cultivation area access road with the existing vineyard where the proposed cultivation area will be located.





Photo 11: Northern vineyard and the proposed cultivation area.



Photo 12: Entrance into the proposed cultivation area dominated by annual grassland species, including yellow star thistle and vineyards.





Photo 13: Proposed cultivation area within the northern vineyard and surrounding habitat dominated by ponderosa pine and incense cedar. Photo looking southwest.



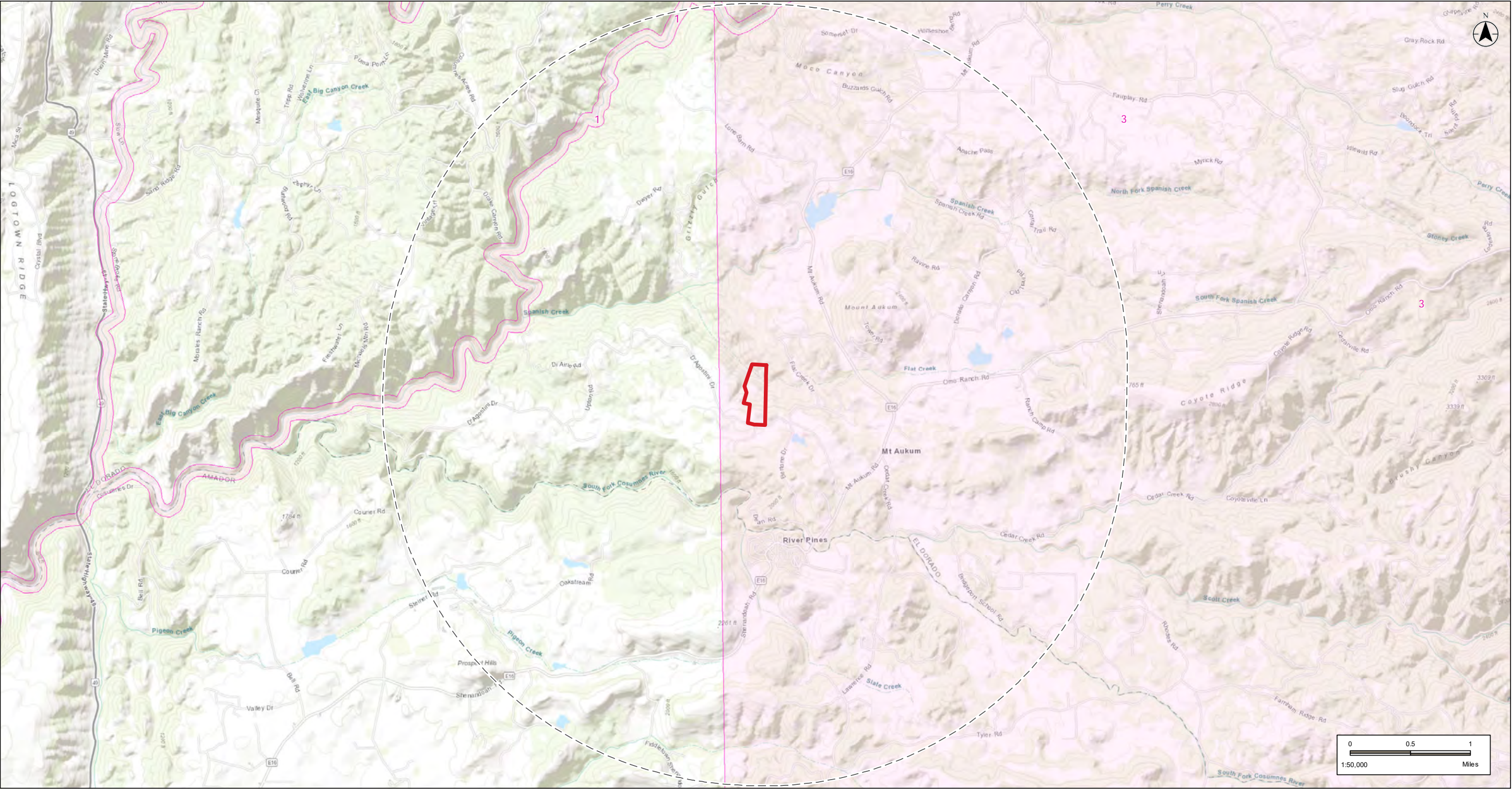
Photo 14: Proposed cultivation area within the northern vineyard and surrounding habitat dominated by ponderosa pine and incense cedar.



## **Appendix G**

### **CNDDB 3-Mile Buffer Figure**





Legend

- Project Location
- 3 mile Buffer on Project
- CNDDDB Plant Occurrence\*
- CNDDDB Wildlife Occurrence\*
- Critical Plant Habitat\*\* (none)
- Critical Wildlife Habitat\*\* (none)

CNDDDB OCCURRENCES\*

**Plant Species**  
None

**Wildlife Species**

- Central Valley Drainage Hardhead/Squawfish Stream
- great gray owl

CRITICAL HABITAT OCCURRENCES\*\*

**Plant Habitat**  
None

**Wildlife Habitat**

None

\* California Natural Diversity Database (CNDDDB) Data: Downloaded August 2020, from the California Department of Fish and Wildlife  
\*\* United States Fish and Wildlife Service (USFWS) Critical Habitat Data: Downloaded August 2020 from: <https://ecos.fws.gov/ecp/report/table/critical-habitat.html>

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Parcel No.: 046-710-017

Figure 3. CNDDDB and Critical Habitat Map



## **Appendix H**

### **CNDDDB Occurrence Report and Quad Searches and USFWS iPac Report**



# Occurrence Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** EOn dx (29426 OR 79180 OR 79181 OR 79182) IS

**Map Index Number:** 78260

**Key Quad:** Aukum (3812056)

**Occurrence Number:** 78

**EO Index:** 79180

**Element Code:** ABNSB12040

**Occurrence Last Updated:** 2014-02-07

**Scientific Name:** *Strix nebulosa*

**Common Name:** great gray owl

**Listing Status:** **Federal:** None

**Rare Plant Rank:**

**\* SENSITIVE \*** **State:** Endangered

**Other Lists:** CDF\_S-Sensitive  
IUCN\_LC-Least Concern  
USFS\_S-Sensitive

**CNDDDB Element Ranks:** **Global:** G5

**State:** S1

**General Habitat:**

RESIDENT OF MIXED CONIFER OR RED FIR FOREST HABITAT, IN OR ON EDGE OF MEADOWS.

**Micro Habitat:**

REQUIRES LARGE DIAMETER SNAGS IN A FOREST WITH HIGH CANOPY CLOSURE, WHICH PROVIDE A COOL SUB-CANOPY MICROCLIMATE.

**Last Date Observed:** 2008-06-06

**Occurrence Type:** Natural/Native occurrence

**Last Survey Date:** 2008-06-06

**Occurrence Rank:** Excellent

**Owner/Manager:**

**Trend:** Unknown

**Presence:** Presumed Extant

**Location:**

\*SENSITIVE\* LOCATION INFORMATION SUPPRESSED.

**Detailed Location:**

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

**Ecological:**

PINE & OAK SAVANNAH. RIPARIAN. PAST HISTORY OF FOREST MANAGEMENT. NEST TREE IS ON A BLACK OAK SNAG. OCCURRENCE SUPPRESSED DUE TO CONCERNS OF DISTURBANCE FROM AN INDIVIDUAL WHO BRINGS BIRDING GROUPS TO THE NEST SITES.

**Threats:**

**General:**

**PLSS:** **Accuracy:** 80 meters

**Area (acres):** 0

**UTM:** **Latitude/Longitude:**

**Elevation (feet):** 2,540

**County Summary:**

**Quad Summary:**

El Dorado

Aukum (3812056)

**Sources:**

ROB08F0007 ROBERTS, K. (SIERRA PACIFIC INDUSTRIES) - FIELD SURVEY FORM FOR STRIX NEBULOSA 2008-06-06

ROB14U0001 ROBERTS, K. (SIERRA PACIFIC INDUSTRIES) - E-MAIL REGARDING GREAT GRAY OWL OCCURRENCES IN CNDDDB 2014-01-27





**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



<b>Map Index Number:</b>	78261	<b>EO Index:</b>	79181
<b>Key Quad:</b>	Aukum (3812056)	<b>Element Code:</b>	ABNSB12040
<b>Occurrence Number:</b>	79	<b>Occurrence Last Updated:</b>	2014-02-07

<b>Scientific Name:</b>	<i>Strix nebulosa</i>	<b>Common Name:</b>	great gray owl
<b>Listing Status:</b>	<b>Federal:</b> None	<b>Rare Plant Rank:</b>	
<b>* SENSITIVE *</b>	<b>State:</b> Endangered	<b>Other Lists:</b>	CDF_S-Sensitive IUCN_LC-Least Concern USFS_S-Sensitive
<b>CNDDDB Element Ranks:</b>	<b>Global:</b> G5		
	<b>State:</b> S1		

**General Habitat:**

RESIDENT OF MIXED CONIFER OR RED FIR FOREST HABITAT, IN OR ON EDGE OF MEADOWS.

**Micro Habitat:**

REQUIRES LARGE DIAMETER SNAGS IN A FOREST WITH HIGH CANOPY CLOSURE, WHICH PROVIDE A COOL SUB-CANOPY MICROCLIMATE.

<b>Last Date Observed:</b>	2007-06-06	<b>Occurrence Type:</b>	Natural/Native occurrence
<b>Last Survey Date:</b>	2007-06-06	<b>Occurrence Rank:</b>	Excellent
<b>Owner/Manager:</b>		<b>Trend:</b>	Unknown
<b>Presence:</b>	Presumed Extant		

**Location:**

\*SENSITIVE\* LOCATION INFORMATION SUPPRESSED.

**Detailed Location:**

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

**Ecological:**

RIPARIAN OAK SAVANNAH. NEST WAS IN A BROKEN BRANCH ON A VALLEY OAK TREE. SITE IS PROTECTED. OCCURRENCE SUPPRESSED DUE TO CONCERNS OF DISTURBANCE FROM AN INDIVIDUAL WHO BRINGS BIRDING GROUPS TO THE NEST SITES.

**Threats:**

**General:**

<b>PLSS:</b>	<b>Accuracy:</b>	80 meters	<b>Area (acres):</b>	0
<b>UTM:</b>	<b>Latitude/Longitude:</b>		<b>Elevation (feet):</b>	2,780

**County Summary:**

El Dorado

**Quad Summary:**

Aukum (3812056)

**Sources:**

ROB07F0004	ROBERTS, K. (SIERRA PACIFIC INDUSTRIES) - FIELD SURVEY FORM FOR STRIX NEBULOSA 2007-06-06
ROB14U0001	ROBERTS, K. (SIERRA PACIFIC INDUSTRIES) - E-MAIL REGARDING GREAT GRAY OWL OCCURRENCES IN CNDDDB 2014-01-27



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



<b>Map Index Number:</b>	78262	<b>EO Index:</b>	79182
<b>Key Quad:</b>	Aukum (3812056)	<b>Element Code:</b>	ABNSB12040
<b>Occurrence Number:</b>	80	<b>Occurrence Last Updated:</b>	2014-02-07

<b>Scientific Name:</b>	<i>Strix nebulosa</i>			<b>Common Name:</b>	great gray owl
<b>Listing Status:</b>	<b>Federal:</b>	None	<b>Rare Plant Rank:</b>		
<b>* SENSITIVE *</b>	<b>State:</b>	Endangered	<b>Other Lists:</b>	CDF_S-Sensitive IUCN_LC-Least Concern USFS_S-Sensitive	
<b>CNDDDB Element Ranks:</b>	<b>Global:</b>	G5			
	<b>State:</b>	S1			

**General Habitat:**

RESIDENT OF MIXED CONIFER OR RED FIR FOREST HABITAT, IN OR ON EDGE OF MEADOWS.

**Micro Habitat:**

REQUIRES LARGE DIAMETER SNAGS IN A FOREST WITH HIGH CANOPY CLOSURE, WHICH PROVIDE A COOL SUB-CANOPY MICROCLIMATE.

<b>Last Date Observed:</b>	2006-06-06	<b>Occurrence Type:</b>	Natural/Native occurrence
<b>Last Survey Date:</b>	2006-06-06	<b>Occurrence Rank:</b>	Excellent
<b>Owner/Manager:</b>		<b>Trend:</b>	Unknown
<b>Presence:</b>	Presumed Extant		

**Location:**

\*SENSITIVE\* LOCATION INFORMATION SUPPRESSED.

**Detailed Location:**

PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

**Ecological:**

SIERRA MIXED CONIFER WITH LAVACAP/MEADOW 0.3 MI SOUTH. NEST WAS IN A BLACK OAK SNAG. SITE IS PROTECTED. OCCURRENCE SUPPRESSED DUE TO CONCERNS OF DISTURBANCE FROM AN INDIVIDUAL WHO BRINGS BIRDING GROUPS TO THE NEST SITES.

**Threats:**

**General:**

<b>PLSS:</b>	<b>Accuracy:</b>	80 meters	<b>Area (acres):</b>	0
<b>UTM:</b>	<b>Latitude/Longitude:</b>		<b>Elevation (feet):</b>	2,800

**County Summary:**

El Dorado

**Quad Summary:**

Aukum (3812056)

**Sources:**

ROB06F0017	ROBERTS, K. (SIERRA PACIFIC INDUSTRIES) - FIELD SURVEY FORM FOR STRIX NEBULOSA 2006-06-06
ROB14U0001	ROBERTS, K. (SIERRA PACIFIC INDUSTRIES) - E-MAIL REGARDING GREAT GRAY OWL OCCURRENCES IN CNDDDB 2014-01-27



**Occurrence Report**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



<b>Map Index Number:</b> 35355	<b>EO Index:</b> 29426
<b>Key Quad:</b> Fiddletown (3812057)	<b>Element Code:</b> CARA2443CA
<b>Occurrence Number:</b> 3	<b>Occurrence Last Updated:</b> 1996-09-24

<b>Scientific Name:</b> <i>Central Valley Drainage Hardhead/Squawfish Stream</i>	<b>Common Name:</b> Central Valley Drainage Hardhead/Squawfish Stream
<b>Listing Status:</b>	<b>Rare Plant Rank:</b>
<b>Federal:</b> None	<b>Other Lists:</b>
<b>State:</b> None	
<b>CNDDB Element Ranks:</b>	
<b>Global:</b> GNR	
<b>State:</b> SNR	

<b>General Habitat:</b> <input type="checkbox"/>	<b>Micro Habitat:</b> <input type="checkbox"/>
---	---

<b>Last Date Observed:</b> 1979-09-07	<b>Occurrence Type:</b> Natural/Native occurrence
<b>Last Survey Date:</b> 1979-09-07	<b>Occurrence Rank:</b> Fair
<b>Owner/Manager:</b> PVT	<b>Trend:</b> Decreasing
<b>Presence:</b> Presumed Extant	

**Location:**

COSUMNES RIVER, NORTH OF PLYMOUTH.

**Detailed Location:**

FROM LATROBE ROAD UPSTREAM TO FORK OF COSUMNES. INCLUDES LOWER REACHES OF NORTH AND MIDDLE FORK COSUMNES UP TO COUNTY ROAD E-16.

**Ecological:**

SQUAWFISH AND SACRAMENTO SUCKERS PRESENT THROUGHOUT REACH; ONLY REPORT OF HARDHEAD IS 1 MILE BELOW HWY 49.

**Threats:**

PREDATION BY EXOTIC FISH SUCH AS SMALLMOUTH BASS. WATER DIVERSIONS AND CATTLE GRAZING DECREASING AVAILABLE FISH HABITAT.

**General:**

LITTLE INFORMATION ON AQUATIC ORGANISMS AVAILABLE FOR LOWER COSUMNES AS IT FLOWS THROUGH PRIVATE LANDS. NO MAJOR DAMS EXIST IN COSUMNES DRAINAGE, SO RIVER IS POTENTIALLY RESTORABLE.

<b>PLSS:</b> T09N, R10E, Sec. 35 (M)	<b>Accuracy:</b> non-specific area	<b>Area (acres):</b> 2,604
<b>UTM:</b> Zone-10 N4273382 E687736	<b>Latitude/Longitude:</b> 38.58909 / -120.84447	<b>Elevation (feet):</b> 800

**County Summary:**

Amador, El Dorado

**Quad Summary:**

Aukum (3812056), Fiddletown (3812057), Latrobe (3812058), Camino (3812066), Placerville (3812067)

**Sources:**

BLM79F0002	BUREAU OF LAND MANAGEMENT - FIELD SURVEY FORM FOR FRENCH CREEK, TRIBUTARY TO COSUMNES RIVER, EL DORADO COUNTY 1979-09-07
BLM80F0001	BUREAU OF LAND MANAGEMENT - FIELD SURVEY FORM FOR MARTINEZ CREEK, TRIBUTARY TO NF COSUMNES RIVER, EL DORADO COUNTY 1980-06-10
DFG60U0001	CORDONE, A. - DEPARTMENT OF FISH AND GAME STREAM SURVEY MEMO 1960-05-10
MOY91R0001	MOYLE, P. & C. SWIFT - CATALOGUE OF POTENTIAL AQUATIC DIVERSITY AREAS 1991-09-XX

Element_Type	Scientific_Name	Common_Name	Element_Code	Federal_Status	State_Status	CDFW_Status	CA_Rare_Plant_Rank	Quad_Code	Quad_Name	Data_Status	Taxon
Animals - Amphibians	Rana boylei pop. 5	foothill yellow-legged frog - south Sierra DPS	AAABH01055	Proposed Endangered	Endangered	-	-	3812056	AUKUM	Mapped	Animals - Amphibia Ranidae boylei pop.
Animals - Birds	Accipiter gentilis	northern goshawk	ABNKC12060	None	None	SSC	-	3812056	AUKUM	Unprocessed	Animals - Accipitric Accipiter
Animals - Birds	Strix nebulosa	great gray owl	ABNSB12040	None	Endangered	-	-	3812056	AUKUM	Mapped and Unprocessed	Animals - Strigidae nebulosa
Animals - Birds	Strix occidentalis occidentalis	California Spotted Owl	ABNSB12013	None	None	SSC	-	3812056	AUKUM	Mapped	Animals - Strigidae occidentalis
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812056	AUKUM	Unprocessed	Animals - Emydidae marmorata
Community - Aquatic	Central Valley Drainage Hardhead/Squawfish Stream	Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	-	-	3812056	AUKUM	Mapped	Communit - Central Valley Drainage Hardhead/Squawfish Stream
Plants - Vascular	Chlorogalum grandiflorum	Red Hills soaproot	PMLIL0G020	None	None	-	1B.2	3812056	AUKUM	Mapped and Unprocessed	Plants - Agavaceae Chlorogalum grandiflorum
Plants - Vascular	Claytonia parviflora ssp. grandiflora	streambank spring beauty	PDPOR030D1	None	None	-	4.2	3812056	AUKUM	Unprocessed	Plants - Montiaceae Claytonia parviflora ssp. grandiflora
Plants - Vascular	Clarkia biloba ssp. brandegeae	Brandegee's clarkia	PDONA05053	None	None	-	4.2	3812056	AUKUM	Unprocessed	Plants - Onagraceae Clarkia biloba ssp. brandegeae
Plants - Vascular	Clarkia virgata	Sierra clarkia	PDONA05160	None	None	-	4.3	3812056	AUKUM	Unprocessed	Plants - Onagraceae Clarkia virgata
Plants - Vascular	Eriogonum tripodum	tripod buckwheat	PDPGN085Y0	None	None	-	4.2	3812056	AUKUM	Unprocessed	Plants - Polygonaceae Eriogonum tripodum



Element_Type	Scientific_Name	Common_Name	Element_Code	Federal_Status	State_Status	CDFW_Status	CA_Rare_Plant_Rank	Quad_Code	Quad_Name	Data_Status	Taxo
Animals - Amphibians	Rana boylei pop. 5	foothill yellow-legged frog - south Sierra DPS	AAABH01055	Proposed Endangered	Endangered	-	-	3812067	PLACERVILLE	Mapped	Animal Amphibian Rana boylei p
Animals - Amphibians	Rana boylei pop. 5	foothill yellow-legged frog - south Sierra DPS	AAABH01055	Proposed Endangered	Endangered	-	-	3812066	CAMINO	Mapped	Animal Amphibian Rana boylei p
Animals - Amphibians	Rana boylei pop. 5	foothill yellow-legged frog - south Sierra DPS	AAABH01055	Proposed Endangered	Endangered	-	-	3812065	SLY PARK	Mapped and Unprocessed	Animal Amphibian Rana boylei p
Animals - Amphibians	Rana boylei pop. 5	foothill yellow-legged frog - south Sierra DPS	AAABH01055	Proposed Endangered	Endangered	-	-	3812057	FIDDLETOWN	Mapped	Animal Amphibian Rana boylei p
Animals - Amphibians	Rana boylei pop. 5	foothill yellow-legged frog - south Sierra DPS	AAABH01055	Proposed Endangered	Endangered	-	-	3812056	AUKUM	Mapped	Animal Amphibian Rana boylei p
Animals - Amphibians	Rana boylei pop. 5	foothill yellow-legged frog - south Sierra DPS	AAABH01055	Proposed Endangered	Endangered	-	-	3812055	OMO RANCH	Mapped	Animal Amphibian Rana boylei p
Animals - Amphibians	Rana boylei pop. 5	foothill yellow-legged frog - south Sierra DPS	AAABH01055	Proposed Endangered	Endangered	-	-	3812047	AMADOR CITY	Mapped	Animal Amphibian Rana boylei p
Animals - Amphibians	Rana boylei pop. 5	foothill yellow-legged frog - south Sierra DPS	AAABH01055	Proposed Endangered	Endangered	-	-	3812046	PINE GROVE	Mapped	Animal Amphibian Rana boylei p
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3812057	FIDDLETOWN	Mapped	Animal Amphibian Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3812065	SLY PARK	Mapped and Unprocessed	Animal Amphibian Rana draytonii
Animals - Arachnids	Banksia grubbsi	Grubbs cave harvestman	ILARA14060	None	None	-	-	3812045	WEST POINT	Mapped and Unprocessed	Animal - Phalangid Banksia
Animals - Birds	Accipiter cooperii	Coopers hawk	ABNKC12040	None	None	WL	-	3812067	PLACERVILLE	Unprocessed	Animal Accipiter Cooperii
Animals - Birds	Accipiter gentilis	northern goshawk	ABNKC12060	None	None	SSC	-	3812056	AUKUM	Unprocessed	Animal Accipiter Gentilis
Animals - Birds	Accipiter gentilis	northern goshawk	ABNKC12060	None	None	SSC	-	3812055	OMO RANCH	Mapped and Unprocessed	Animal Accipiter Gentilis
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP   WL	-	3812067	PLACERVILLE	Unprocessed	Animal Accipiter Chrysaetos

Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812067	PLACERVILLE	Mapped and Unprocessed	Animal Ardeid: alba
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812067	PLACERVILLE	Unprocessed	Animal Ardeid: herodias
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812066	CAMINO	Mapped	Animal Hirund Riparia
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812067	PLACERVILLE	Mapped	Animal Hirund Riparia
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Threatened	SSC	-	3812047	AMADOR CITY	Mapped	Animal Icterid: tricolor
Animals - Birds	Strix nebulosa	great gray owl	ABNSB12040	None	Endangered	-	-	3812055	OMO RANCH	Mapped and Unprocessed	Animal Strigid: nebulosa
Animals - Birds	Strix nebulosa	great gray owl	ABNSB12040	None	Endangered	-	-	3812046	PINE GROVE	Unprocessed	Animal Strigid: nebulosa
Animals - Birds	Strix nebulosa	great gray owl	ABNSB12040	None	Endangered	-	-	3812045	WEST POINT	Unprocessed	Animal Strigid: nebulosa
Animals - Birds	Strix nebulosa	great gray owl	ABNSB12040	None	Endangered	-	-	3812056	AUKUM	Mapped and Unprocessed	Animal Strigid: nebulosa
Animals - Birds	Strix occidentalis occidentalis	California Spotted Owl	ABNSB12013	None	None	SSC	-	3812045	WEST POINT	Mapped	Animal Strigid: occidentalis
Animals - Birds	Strix occidentalis occidentalis	California Spotted Owl	ABNSB12013	None	None	SSC	-	3812046	PINE GROVE	Mapped	Animal Strigid: occidentalis
Animals - Birds	Strix occidentalis occidentalis	California Spotted Owl	ABNSB12013	None	None	SSC	-	3812055	OMO RANCH	Mapped	Animal Strigid: occidentalis
Animals - Birds	Strix occidentalis occidentalis	California Spotted Owl	ABNSB12013	None	None	SSC	-	3812056	AUKUM	Mapped	Animal Strigid: occidentalis
Animals - Birds	Strix occidentalis occidentalis	California Spotted Owl	ABNSB12013	None	None	SSC	-	3812065	SLY PARK	Mapped	Animal Strigid: occidentalis
Animals - Crustaceans	Stygobromus gradyi	Gradys Cave amphipod	ICMAL05460	None	None	-	-	3812046	PINE GROVE	Mapped	Animal Crustacea: Stygobromus gradyi
Animals - Crustaceans	Stygobromus grahami	Grahams Cave amphipod	ICMAL05920	None	None	-	-	3812046	PINE GROVE	Mapped	Animal Crustacea: Stygobromus grahami

Animals - Crustaceans	Stygobromus grahami	Grahams Cave amphipod	ICMAL05920	None	None	-	-	3812045	WEST POINT	Mapped	Animal Crustaceans Stygobromus grahami
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812067	PLACERVILLE	Unprocessed	Animal Salmon Oncorhynchus mykiss 11
Animals - Insects	Bombus pensylvanicus	American bumble bee	IIHYM24260	None	None	-	-	3812067	PLACERVILLE	Mapped and Unprocessed	Animal Apidae pensylvanicus
Animals - Insects	Bombus pensylvanicus	American bumble bee	IIHYM24260	None	None	-	-	3812045	WEST POINT	Unprocessed	Animal Apidae pensylvanicus
Animals - Insects	Bombus pensylvanicus	American bumble bee	IIHYM24260	None	None	-	-	3812057	FIDDLETOWN	Unprocessed	Animal Apidae pensylvanicus
Animals - Insects	Bombus pensylvanicus	American bumble bee	IIHYM24260	None	None	-	-	3812047	AMADOR CITY	Mapped and Unprocessed	Animal Apidae pensylvanicus
Animals - Insects	Chrysis tularensis	Tulare cuckoo wasp	IIHYM72010	None	None	-	-	3812047	AMADOR CITY	Mapped	Animal Chrysididae Chrysis tularensis
Animals - Insects	Atractelmis wawona	Wawona riffle beetle	IICOL58010	None	None	-	-	3812065	SLY PARK	Unprocessed	Animal Elmidae Atractelmis wawona
Animals - Insects	Cosumnoperla hypocrena	Cosumnes stripetail	IIPLE23020	None	None	-	-	3812065	SLY PARK	Mapped	Animal Perlodidae Cosumnoperla hypocrena
Animals - Insects	Cosumnoperla hypocrena	Cosumnes stripetail	IIPLE23020	None	None	-	-	3812066	CAMINO	Mapped	Animal Perlodidae Cosumnoperla hypocrena
Animals - Insects	Cosumnoperla hypocrena	Cosumnes stripetail	IIPLE23020	None	None	-	-	3812067	PLACERVILLE	Mapped	Animal Perlodidae Cosumnoperla hypocrena
Animals - Insects	Cosumnoperla hypocrena	Cosumnes stripetail	IIPLE23020	None	None	-	-	3812057	FIDDLETOWN	Mapped	Animal Perlodidae Cosumnoperla hypocrena
Animals - Mammals	Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-	-	3812046	PINE GROVE	Mapped and Unprocessed	Animal - Erethizon dorsatum
Animals - Mammals	Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-	-	3812045	WEST POINT	Mapped and Unprocessed	Animal - Erethizon dorsatum
Animals - Mammals	Erethizon dorsatum	North American porcupine	AMAFJ01010	None	None	-	-	3812067	PLACERVILLE	Mapped	Animal - Erethizon dorsatum
Animals - Mammals	Pekania pennanti	Fisher	AMAJF01020	None	None	SSC	-	3812067	PLACERVILLE	Mapped	Animal - Mustelidae Pekania pennanti

Animals - Mammals	Pekania pennanti	Fisher	AMAJF01020	None	None	SSC	-	3812066	CAMINO	Mapped	Animal - Mustelidae Pekania
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812067	PLACERVILLE	Unprocessed	Animal - Mustelidae Taxidea
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812065	SLY PARK	Unprocessed	Animal - Mustelidae Taxidea
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812045	WEST POINT	Unprocessed	Animal - Mustelidae Taxidea
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812045	WEST POINT	Unprocessed	Animal - Vespertilionidae Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812046	PINE GROVE	Mapped and Unprocessed	Animal - Vespertilionidae Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812047	AMADOR CITY	Unprocessed	Animal - Vespertilionidae Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812055	OMO RANCH	Unprocessed	Animal - Vespertilionidae Corynorhinus townsendii
Animals - Mammals	Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-	-	3812045	WEST POINT	Mapped	Animal - Vespertilionidae Lasionycteris noctivagans
Animals - Mammals	Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-	-	3812065	SLY PARK	Mapped	Animal - Vespertilionidae Lasionycteris noctivagans
Animals - Mammals	Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-	-	3812066	CAMINO	Mapped	Animal - Vespertilionidae Lasionycteris noctivagans
Animals - Mammals	Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-	-	3812067	PLACERVILLE	Mapped	Animal - Vespertilionidae Lasionycteris noctivagans
Animals - Mammals	Myotis thysanodes	fringed myotis	AMACC01090	None	None	-	-	3812065	SLY PARK	Mapped	Animal - Vespertilionidae Myotis
Animals - Mammals	Myotis volans	long-legged myotis	AMACC01110	None	None	-	-	3812065	SLY PARK	Mapped	Animal - Vespertilionidae Myotis
Animals - Mammals	Myotis volans	long-legged myotis	AMACC01110	None	None	-	-	3812055	OMO RANCH	Mapped	Animal - Vespertilionidae Myotis
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812055	OMO RANCH	Unprocessed	Animal - Emydidae Emys marmorata



Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812047	AMADOR CITY	Mapped and Unprocessed	Animal Emydi marmc
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812045	WEST POINT	Unprocessed	Animal Emydi marmc
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812046	PINE GROVE	Mapped	Animal Emydi marmc
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812065	SLY PARK	Mapped and Unprocessed	Animal Emydi marmc
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812057	FIDDLETOWN	Mapped and Unprocessed	Animal Emydi marmc
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812056	AUKUM	Unprocessed	Animal Emydi marmc
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812066	CAMINO	Mapped and Unprocessed	Animal Emydi marmc
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812067	PLACERVILLE	Mapped and Unprocessed	Animal Emydi marmc
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3812067	PLACERVILLE	Unprocessed	Animal Phrync Phrync blainvil
Community - Aquatic	Central Valley Drainage Hardhead/Squawfish Stream	Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	-	-	3812067	PLACERVILLE	Mapped	Comm - Centr Draina Hardh Stream
Community - Aquatic	Central Valley Drainage Hardhead/Squawfish Stream	Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	-	-	3812066	CAMINO	Mapped	Comm - Centr Draina Hardh Stream
Community - Aquatic	Central Valley Drainage Hardhead/Squawfish Stream	Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	-	-	3812056	AUKUM	Mapped	Comm - Centr Draina Hardh Stream
Community - Aquatic	Central Valley Drainage Hardhead/Squawfish Stream	Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	-	-	3812057	FIDDLETOWN	Mapped	Comm - Centr Draina Hardh Stream
Community - Aquatic	Central Valley Drainage Resident Rainbow Trout Stream	Central Valley Drainage Resident Rainbow Trout Stream	CARA2421CA	None	None	-	-	3812065	SLY PARK	Mapped	Comm - Centr Draina Rainbc Stream
Community - Aquatic	Central Valley Drainage Resident Rainbow Trout Stream	Central Valley Drainage Resident Rainbow Trout Stream	CARA2421CA	None	None	-	-	3812066	CAMINO	Mapped	Comm - Centr Draina

											Rainbc Stream
Community - Aquatic	Central Valley Drainage Resident Rainbow Trout Stream	Central Valley Drainage Resident Rainbow Trout Stream	CARA2421CA	None	None	-	-	3812055	OMO RANCH	Mapped	Comm - Centr Draina Rainbc Stream
Community - Aquatic	Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	CARA2130CA	None	None	-	-	3812055	OMO RANCH	Mapped	Comm - Sacra Joaqui Foothil Ephem
Community - Aquatic	Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	CARA2130CA	None	None	-	-	3812066	CAMINO	Mapped	Comm - Sacra Joaqui Foothil Ephem
Community - Aquatic	Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	CARA2130CA	None	None	-	-	3812065	SLY PARK	Mapped	Comm - Sacra Joaqui Foothil Ephem
Plants - Vascular	Chlorogalum grandiflorum	Red Hills soaproot	PMLIL0G020	None	None	-	1B.2	3812056	AUKUM	Mapped and Unprocessed	Plants Agava Chloro grandif
Plants - Vascular	Chlorogalum grandiflorum	Red Hills soaproot	PMLIL0G020	None	None	-	1B.2	3812055	OMO RANCH	Mapped and Unprocessed	Plants Agava Chloro grandif
Plants - Vascular	Chlorogalum grandiflorum	Red Hills soaproot	PMLIL0G020	None	None	-	1B.2	3812046	PINE GROVE	Mapped	Plants Agava Chloro grandif
Plants - Vascular	Chlorogalum grandiflorum	Red Hills soaproot	PMLIL0G020	None	None	-	1B.2	3812045	WEST POINT	Mapped	Plants Agava Chloro grandif
Plants - Vascular	Allium sanbornii var. sanbornii	Sanborns onion	PMLIL02212	None	None	-	4.2	3812055	OMO RANCH	Unprocessed	Plants Alliace sanbor sanbor
Plants - Vascular	Eryngium pinnatisectum	Tuolumne button-celery	PDAPI0Z0P0	None	None	-	1B.2	3812047	AMADOR CITY	Mapped	Plants Apiace pinnati
Plants - Vascular	Eryngium pinnatisectum	Tuolumne button-celery	PDAPI0Z0P0	None	None	-	1B.2	3812046	PINE GROVE	Mapped	Plants Apiace pinnati
Plants - Vascular	Balsamorhiza macrolepis	big-scale balsamroot	PDAST11061	None	None	-	1B.2	3812047	AMADOR CITY	Mapped	Plants Astera Balsan macrol
Plants - Vascular	Jensia yosemitana	Yosemite tarplant	PDAST650J0	None	None	-	3.2	3812065	SLY PARK	Unprocessed	Plants Astera yosem
Plants - Vascular	Jensia yosemitana	Yosemite tarplant	PDAST650J0	None	None	-	3.2	3812066	CAMINO	Unprocessed	Plants Astera

											yosem
Plants - Vascular	Packera layneae	Laynes ragwort	PDAST8H1V0	Threatened	Rare	-	1B.2	3812067	PLACERVILLE	Mapped	Plants Aster Packer
Plants - Vascular	Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-	2B.3	3812067	PLACERVILLE	Mapped	Plants Caprif Viburn
Plants - Vascular	Stellaria obtusa	obtuse starwort	PDCAR0X0U0	None	None	-	4.3	3812055	OMO RANCH	Unprocessed	Plants Caryop Stellari
Plants - Vascular	Hesperocyparis bakeri	Baker cypress	PGCUP04020	None	None	-	4.2	3812067	PLACERVILLE	Unprocessed	Plants Cupres Hespe bakeri
Plants - Vascular	Arctostaphylos nissenana	Nissenan manzanita	PDERI040V0	None	None	-	1B.2	3812067	PLACERVILLE	Mapped and Unprocessed	Plants Ericace Arctost nissen
Plants - Vascular	Arctostaphylos nissenana	Nissenan manzanita	PDERI040V0	None	None	-	1B.2	3812066	CAMINO	Mapped	Plants Ericace Arctost nissen
Plants - Vascular	Lathyrus sulphureus var. argillaceus	dubious pea	PDFAB25101	None	None	-	3	3812045	WEST POINT	Unprocessed	Plants Fabace sulphu argillac
Plants - Vascular	Juncus digitatus	finger rush	PMJUN013E0	None	None	-	1B.1	3812065	SLY PARK	Unprocessed	Plants Juncac digitat
Plants - Vascular	Monardella candicans	Sierra monardella	PDLAM18050	None	None	-	4.3	3812067	PLACERVILLE	Unprocessed	Plants Lamiac Monar candic
Plants - Vascular	Calochortus clavatus var. avius	Pleasant Valley mariposa-lily	PMLIL0D095	None	None	-	1B.2	3812065	SLY PARK	Mapped and Unprocessed	Plants Liliace Caloch var. av
Plants - Vascular	Calochortus clavatus var. avius	Pleasant Valley mariposa-lily	PMLIL0D095	None	None	-	1B.2	3812066	CAMINO	Mapped	Plants Liliace Caloch var. av
Plants - Vascular	Calochortus clavatus var. avius	Pleasant Valley mariposa-lily	PMLIL0D095	None	None	-	1B.2	3812055	OMO RANCH	Mapped and Unprocessed	Plants Liliace Caloch var. av
Plants - Vascular	Lilium humboldtii ssp. humboldtii	Humboldt lily	PMLIL1A071	None	None	-	4.2	3812046	PINE GROVE	Unprocessed	Plants Liliace humbo humbo
Plants - Vascular	Lilium humboldtii ssp. humboldtii	Humboldt lily	PMLIL1A071	None	None	-	4.2	3812066	CAMINO	Unprocessed	Plants Liliace humbo humbo
Plants - Vascular	Claytonia parviflora ssp. grandiflora	streambank spring beauty	PDPOR030D1	None	None	-	4.2	3812066	CAMINO	Unprocessed	Plants Montia Clayton ssp. gr

Plants - Vascular	Claytonia parviflora ssp. grandiflora	streambank spring beauty	PDPOR030D1	None	None	-	4.2	3812065	SLY PARK	Unprocessed	Plants Montia Clayto ssp. gr
Plants - Vascular	Claytonia parviflora ssp. grandiflora	streambank spring beauty	PDPOR030D1	None	None	-	4.2	3812067	PLACERVILLE	Unprocessed	Plants Montia Clayto ssp. gr
Plants - Vascular	Claytonia parviflora ssp. grandiflora	streambank spring beauty	PDPOR030D1	None	None	-	4.2	3812046	PINE GROVE	Unprocessed	Plants Montia Clayto ssp. gr
Plants - Vascular	Claytonia parviflora ssp. grandiflora	streambank spring beauty	PDPOR030D1	None	None	-	4.2	3812056	AUKUM	Unprocessed	Plants Montia Clayto ssp. gr
Plants - Vascular	Claytonia parviflora ssp. grandiflora	streambank spring beauty	PDPOR030D1	None	None	-	4.2	3812057	FIDDLETOWN	Unprocessed	Plants Montia Clayto ssp. gr
Plants - Vascular	Camissonia lacustris	grassland suncup	PDONA030W0	None	None	-	1B.2	3812066	CAMINO	Mapped	Plants Onagr: Camis:
Plants - Vascular	Clarkia biloba ssp. brandegeae	Brandegees clarkia	PDONA05053	None	None	-	4.2	3812066	CAMINO	Mapped	Plants Onagr: Clarkia brande
Plants - Vascular	Clarkia biloba ssp. brandegeae	Brandegees clarkia	PDONA05053	None	None	-	4.2	3812056	AUKUM	Unprocessed	Plants Onagr: Clarkia brande
Plants - Vascular	Clarkia biloba ssp. brandegeae	Brandegees clarkia	PDONA05053	None	None	-	4.2	3812067	PLACERVILLE	Mapped and Unprocessed	Plants Onagr: Clarkia brande
Plants - Vascular	Clarkia biloba ssp. brandegeae	Brandegees clarkia	PDONA05053	None	None	-	4.2	3812057	FIDDLETOWN	Mapped and Unprocessed	Plants Onagr: Clarkia brande
Plants - Vascular	Clarkia virgata	Sierra clarkia	PDONA05160	None	None	-	4.3	3812055	OMO RANCH	Unprocessed	Plants Onagr: Clarkia
Plants - Vascular	Clarkia virgata	Sierra clarkia	PDONA05160	None	None	-	4.3	3812047	AMADOR CITY	Unprocessed	Plants Onagr: Clarkia
Plants - Vascular	Clarkia virgata	Sierra clarkia	PDONA05160	None	None	-	4.3	3812046	PINE GROVE	Unprocessed	Plants Onagr: Clarkia
Plants - Vascular	Clarkia virgata	Sierra clarkia	PDONA05160	None	None	-	4.3	3812045	WEST POINT	Unprocessed	Plants Onagr: Clarkia
Plants - Vascular	Clarkia virgata	Sierra clarkia	PDONA05160	None	None	-	4.3	3812056	AUKUM	Unprocessed	Plants Onagr: Clarkia
Plants - Vascular	Clarkia virgata	Sierra clarkia	PDONA05160	None	None	-	4.3	3812066	CAMINO	Unprocessed	Plants Onagr: Clarkia



Plants - Vascular	Clarkia virgata	Sierra clarkia	PDONA05160	None	None	-	4.3	3812065	SLY PARK	Unprocessed	Plants Onagr Clarkia
Plants - Vascular	Diplacus pulchellus	yellow-lip pansy monkeyflower	PDSCR1B280	None	None	-	1B.2	3812055	OMO RANCH	Mapped	Plants Phrym. Diplac
Plants - Vascular	Erythranthe marmorata	Stanislaus monkeyflower	PDPHR01130	None	None	-	1B.1	3812045	WEST POINT	Mapped	Plants Phrym. Erythra marmc
Plants - Vascular	Erythranthe marmorata	Stanislaus monkeyflower	PDPHR01130	None	None	-	1B.1	3812046	PINE GROVE	Mapped	Plants Phrym. Erythra marmc
Plants - Vascular	Sphenopholis obtusata	prairie wedge grass	PMPOA5T030	None	None	-	2B.2	3812046	PINE GROVE	Mapped	Plants Poace: Sphen obtusa
Plants - Vascular	Sphenopholis obtusata	prairie wedge grass	PMPOA5T030	None	None	-	2B.2	3812047	AMADOR CITY	Mapped	Plants Poace: Sphen obtusa
Plants - Vascular	Navarretia prolifera ssp. lutea	yellow bur navarretia	PDPLM0C0N1	None	None	-	4.3	3812065	SLY PARK	Unprocessed	Plants Polem Navarr ssp. lu
Plants - Vascular	Navarretia prolifera ssp. lutea	yellow bur navarretia	PDPLM0C0N1	None	None	-	4.3	3812066	CAMINO	Unprocessed	Plants Polem Navarr ssp. lu
Plants - Vascular	Eriogonum tripodum	tripod buckwheat	PDPGN085Y0	None	None	-	4.2	3812056	AUKUM	Unprocessed	Plants Polygo Eriogo
Plants - Vascular	Eriogonum tripodum	tripod buckwheat	PDPGN085Y0	None	None	-	4.2	3812067	PLACERVILLE	Unprocessed	Plants Polygo Eriogo
Plants - Vascular	Eriogonum tripodum	tripod buckwheat	PDPGN085Y0	None	None	-	4.2	3812057	FIDDLETOWN	Unprocessed	Plants Polygo Eriogo
Plants - Vascular	Horkelia parryi	Parrys horkelia	PDROS0W0C0	None	None	-	1B.2	3812055	OMO RANCH	Mapped	Plants Rosaci parryi
Plants - Vascular	Horkelia parryi	Parrys horkelia	PDROS0W0C0	None	None	-	1B.2	3812067	PLACERVILLE	Mapped	Plants Rosaci parryi
Plants - Vascular	Horkelia parryi	Parrys horkelia	PDROS0W0C0	None	None	-	1B.2	3812066	CAMINO	Mapped and Unprocessed	Plants Rosaci parryi
Plants - Vascular	Bolandra californica	Sierra bolandra	PDSAX03010	None	None	-	4.3	3812066	CAMINO	Unprocessed	Plants Saxifra Bolanc
Plants - Vascular	Jepsonia heterandra	foothill jepsonia	PDSAX0J010	None	None	-	4.3	3812057	FIDDLETOWN	Unprocessed	Plants Saxifra Jepsor
Plants - Vascular	Jepsonia heterandra	foothill jepsonia	PDSAX0J010	None	None	-	4.3	3812047	AMADOR CITY	Unprocessed	Plants Saxifra




CNPS Rare Plant Inventory

Search Results

5 matches found. Click on scientific name for details

Search Criteria: Quad is one of [3812056]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE		DATE ADDED	PHOTO
									PLANT RANK	CA ENDEMIC		
<a href="#">Chlorogalum grandiflorum</a>	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G3	S3	1B.2	Yes	1974-01-01	No Photo Available
<a href="#">Clarkia biloba ssp. brandegeae</a>	Brandegee's clarkia	Onagraceae	annual herb	(Mar)May-Jul	None	None	G4G5T4	S4	4.2	Yes	2001-01-01	No Photo Available
<a href="#">Clarkia virgata</a>	Sierra clarkia	Onagraceae	annual herb	May-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available
<a href="#">Claytonia parviflora ssp. grandiflora</a>	streambank spring beauty	Montiaceae	annual herb	Feb-May	None	None	G5T3	S3	4.2	Yes	2006-09-29	No Photo Available
<a href="#">Eriogonum tripodum</a>	tripod buckwheat	Polygonaceae	perennial deciduous shrub	May-Jul	None	None	G4	S4	4.2	Yes	1974-01-01	 ©2008 Steven Perry

Showing 1 to 5 of 5 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website <https://www.rareplants.cnps.org> [accessed 18 September 2023].














CNPS Rare Plant Inventory

Search Results




27 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [3812045:3812046:3812056:3812055:3812066:3812065:3812057:3812067:3812047]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	CA RARE		CA ENDEMIC	DATE ADDED	PHOTO
								STATE RANK	PLANT RANK			
<a href="#">Allium sanbornii</a> var. <a href="#">sanbornii</a>	Sanborn's onion	Alliaceae	perennial bulbiferous herb	May-Sep	None	None	G4T4?	S3S4	4.2		1994-01-01	 ©2018 Steven Perry
<a href="#">Arctostaphylos nissenana</a>	Nissenan manzanita	Ericaceae	perennial evergreen shrub	Feb-Mar	None	None	G1	S1	1B.2	Yes	1974-01-01	No Photo Available
<a href="#">Balsamorhiza macrolepis</a>	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 ©1998 Dean Wm. Taylor
<a href="#">Bolandra californica</a>	Sierra bolandra	Saxifragaceae	perennial herb	Jun-Jul	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
<a href="#">Calochortus clavatus</a> var. <a href="#">avicus</a>	Pleasant Valley mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	G4T2	S2	1B.2	Yes	1980-01-01	No Photo Available
<a href="#">Camissonia lacustris</a>	grassland suncup	Onagraceae	annual herb	Mar-Jun	None	None	G2	S2	1B.2		2022-09-19	 © 2021 Ryan O'Dell
<a href="#">Chlorogalum grandiflorum</a>	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G3	S3	1B.2	Yes	1974-01-01	No Photo Available
<a href="#">Clarkia biloba</a> ssp. <a href="#">brandegeae</a>	Brandeggee's clarkia	Onagraceae	annual herb	(Mar)May-Jul	None	None	G4G5T4	S4	4.2	Yes	2001-01-01	No Photo Available
<a href="#">Clarkia virgata</a>	Sierra clarkia	Onagraceae	annual herb	May-Aug	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available
<a href="#">Claytonia parviflora</a> ssp. <a href="#">grandiflora</a>	streambank spring beauty	Montiaceae	annual herb	Feb-May	None	None	G5T3	S3	4.2	Yes	2006-09-29	No Photo Available

<u><i>Diplacus pulchellus</i></u>	yellow-lip pansy monkeyflower	Phrymaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2018 Sierra Pacific Industries
<u><i>Engellaria obtusa</i></u>	obtuse starwort	Caryophyllaceae	perennial rhizomatous herb	May-Sep(Oct)	None	None	G5	S4	4.3		1988-01-01	 ©2014 Kirsten Bovee
<u><i>Eriogonum tripodum</i></u>	tripod buckwheat	Polygonaceae	perennial deciduous shrub	May-Jul	None	None	G4	S4	4.2	Yes	1974-01-01	 ©2008 Steven Perry
<u><i>Eryngium pinnatisectum</i></u>	Tuolumne button-celery	Apiaceae	annual/perennial herb	May-Aug	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2007 Robert E. Preston, Ph.D.
<u><i>Erythranthe marmorata</i></u>	Stanislaus monkeyflower	Phrymaceae	annual herb	Mar-May	None	None	G2?	S2?	1B.1	Yes	1974-01-01	No Photo Available
<u><i>Hesperocyparis bakeri</i></u>	Baker cypress	Cupressaceae	perennial evergreen tree		None	None	G3	S3	4.2		1974-01-01	 © 2021 Scot Loring
<u><i>Horkelia parryi</i></u>	Parry's horkelia	Rosaceae	perennial herb	Apr-Sep	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2009 Barry Breckling
<u><i>Jensia yosemitana</i></u>	Yosemite tarplant	Asteraceae	annual herb	(Apr)May-Jul	None	None	G3	S3	3.2	Yes	1994-01-01	No Photo Available
<u><i>Jepsonia heterandra</i></u>	foothill jepsonia	Saxifragaceae	perennial herb	Aug-Dec	None	None	G3	S3	4.3	Yes	1994-01-01	 © 2014 Belinda Lo
<u><i>Juncus digitatus</i></u>	finger rush	Juncaceae	annual herb	(Apr)May-Jun	None	None	G1	S1	1B.1	Yes	2009-01-02	 Image by Wendy Boes



<u><a href="#">Lathyrus sulphureus</a></u> var. <u><a href="#">argillaceus</a></u>	dubious pea	Fabaceae	perennial herb	Apr-May	None	None	G5T1T2Q	S1S2	3	Yes	1994-01-01	No Photo Available
<u><a href="#">Lilium humboldtii</a></u> ssp. <u><a href="#">humboldtii</a></u>	Humboldt lily	Liliaceae	perennial bulbiferous herb	May-Jul(Aug)	None	None	G4T3	S3	4.2	Yes	1994-01-01	 © 2008 Sierra Pacific Industries
<u><a href="#">Monardella candicans</a></u>	Sierra monardella	Lamiaceae	annual herb	Apr-Jul	None	None	G4	S4	4.3	Yes	1994-01-01	 © 2011 Jean Pawek
<u><a href="#">Navarretia prolifera</a></u> ssp. <u><a href="#">lutea</a></u>	yellow bur navarretia	Polemoniaceae	annual herb	May-Jul	None	None	G4T3	S3	4.3	Yes	1974-01-01	No Photo Available
<u><a href="#">Packera layneae</a></u>	Layne's ragwort	Asteraceae	perennial herb	Apr-Aug	FT	CR	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
<u><a href="#">Sphenopholis obtusata</a></u>	prairie wedge grass	Poaceae	perennial herb	Apr-Jul	None	None	G5	S2	2B.2		1974-01-01	No Photo Available
<u><a href="#">Viburnum ellipticum</a></u>	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3?	2B.3		1974-01-01	 © 2006 Tom Engstrom

Showing 1 to 27 of 27 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website <https://www.rareplants.cnps.org> [accessed 18 September 2023].

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

El Dorado County, California



## Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Amphibians

NAME	STATUS
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California Red-legged Frog *Rana draytonii*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/2891>

## Fishes

NAME

STATUS

Delta Smelt *Hypomesus transpacificus*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/321>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ



[below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
<b>California Thrasher</b> <i>Toxostoma redivivum</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
<b>Common Yellowthroat</b> <i>Geothlypis trichas sinuosa</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/2084">https://ecos.fws.gov/ecp/species/2084</a>	Breeds May 20 to Jul 31
<b>Lawrence's Goldfinch</b> <i>Carduelis lawrencei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9464">https://ecos.fws.gov/ecp/species/9464</a>	Breeds Mar 20 to Sep 20
<b>Lewis's Woodpecker</b> <i>Melanerpes lewis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a>	Breeds Apr 20 to Sep 30

<p><b>Nuttall's Woodpecker</b> <i>Picoides nuttallii</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p><a href="https://ecos.fws.gov/ecp/species/9410">https://ecos.fws.gov/ecp/species/9410</a></p>	Breeds Apr 1 to Jul 20
<p><b>Oak Titmouse</b> <i>Baeolophus inornatus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/9656">https://ecos.fws.gov/ecp/species/9656</a></p>	Breeds Mar 15 to Jul 15
<p><b>Rufous Hummingbird</b> <i>Selasphorus rufus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/8002">https://ecos.fws.gov/ecp/species/8002</a></p>	Breeds elsewhere
<p><b>Song Sparrow</b> <i>Melospiza melodia</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Feb 20 to Sep 5
<p><b>Spotted Towhee</b> <i>Pipilo maculatus clementae</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p><a href="https://ecos.fws.gov/ecp/species/4243">https://ecos.fws.gov/ecp/species/4243</a></p>	Breeds Apr 15 to Jul 20
<p><b>Wrentit</b> <i>Chamaea fasciata</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Mar 15 to Aug 10
<p><b>Yellow-billed Magpie</b> <i>Pica nuttalli</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p><a href="https://ecos.fws.gov/ecp/species/9726">https://ecos.fws.gov/ecp/species/9726</a></p>	Breeds Apr 1 to Jul 31

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

**Breeding Season (■)**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort (|)**

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

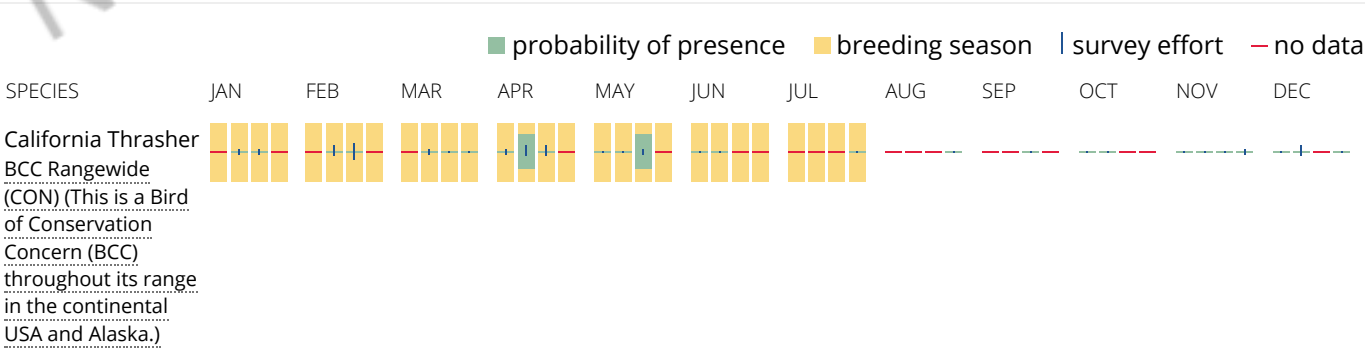
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**No Data (—)**

A week is marked as having no data if there were no survey events for that week.

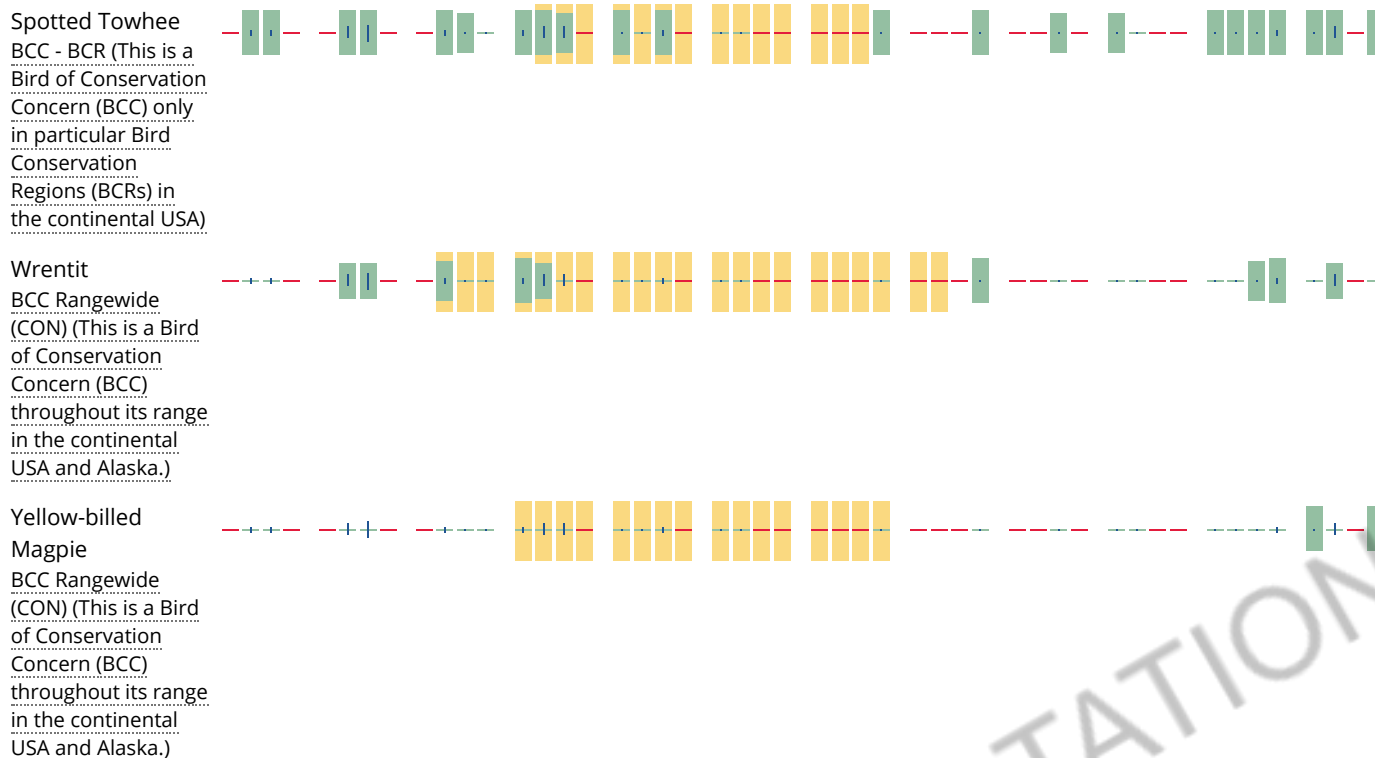
**Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.









Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE  
[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

#### **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 tubercid 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.



## Appendix H

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### Cultural Resources Study

# Cultural Resources Study

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Assessor's Parcel Number 046-710-17-100,  
4941 D'Agostini Drive, Somerset  
El Dorado County, CA 95684

November 2020



Prepared for:

Michael Pinette, John Muraco Jr. and Christina Muraco,  
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Pebble Beach, CA 93953

## TABLE OF CONTENTS

Introduction.....	1
The Project and Project Site.....	1
Subject Property .....	1
Environmental Setting .....	1
Prehistoric Overview .....	1
Ethnographic Context.....	2
Historic Context .....	3
Known Archaeological and Historical Sites .....	5
Prior Cultural Resource Surveys.....	5
Tribal Consultation.....	5
National/State Register Files.....	5
Historic Map and Aerial Photograph Review .....	5
Archaeological and Historical Sensitivity .....	5
Pedestrian Survey.....	5
Conclusion and Recommendations.....	6
References.....	7

## FIGURES

- Figure 1: Project Location Map
- Figure 2: Proposed Project Design Plan
- Figure 3: Aerial Photograph, 1946
- Figure 4: Aerial Photograph, 1993
- Figure 5: Aerial Photograph, 2020
- Figure 6: General Land Office Survey Plat Map, 1869

## ATTACHMENTS

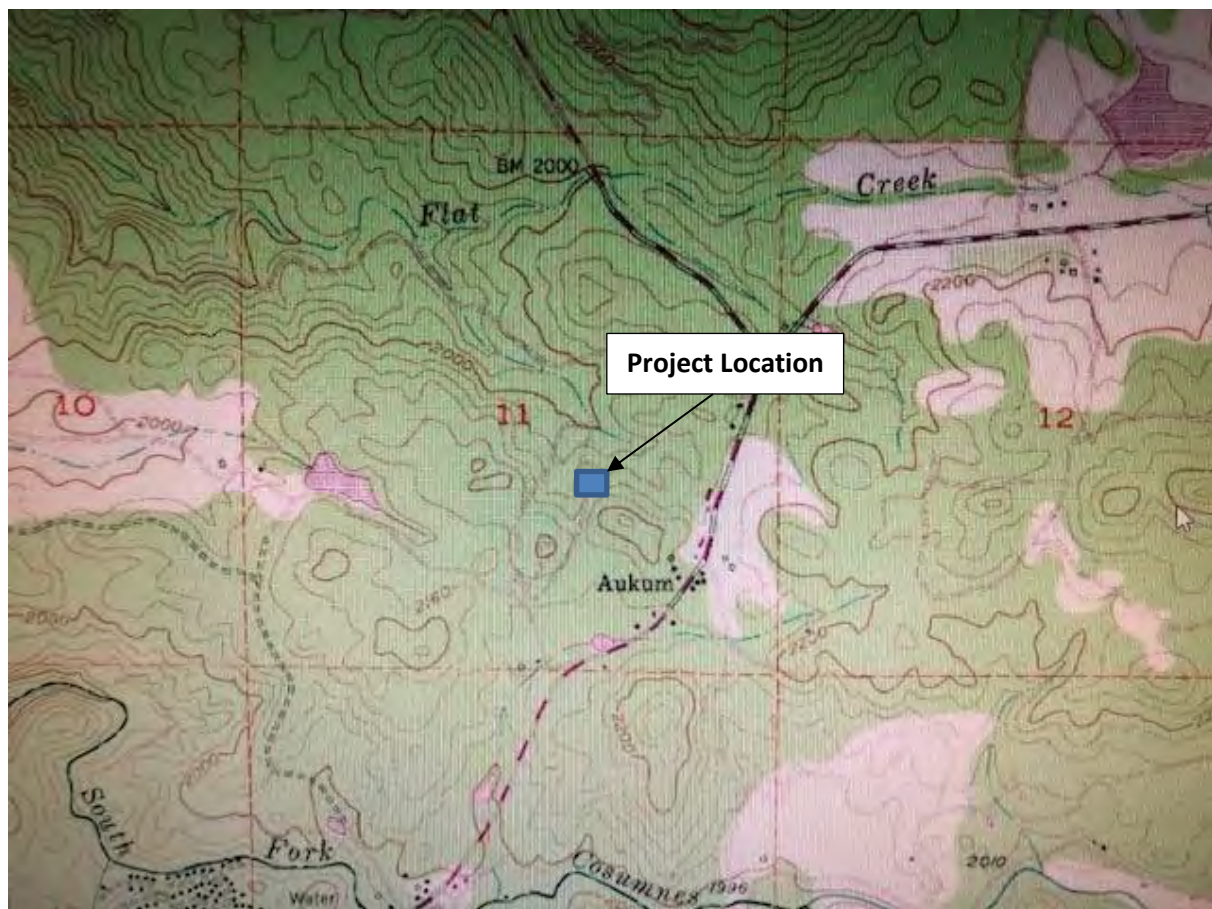
NCIC Record Search

## Abstract

The project is being conducted under the provisions of the California Environmental Quality Act (CEQA) and the California Register of Historic Resources (CRHR) under Public Resources Code Section 5024.1. The proposed project involves establishing a cannabis farm on a portion of an approximate 46.53-acre parcel, identified as Assessor's Parcel Number (APN) 046-710-017-100, located at 4941 D'Agostini Drive, Somerset, El Dorado County, California. The project area is delineated on the United States Geological Survey (USGS) 7.5' *Aukum, California* topographic quadrangle map in Section 11 of Township 8 North, Range 11 East (Figure 1).

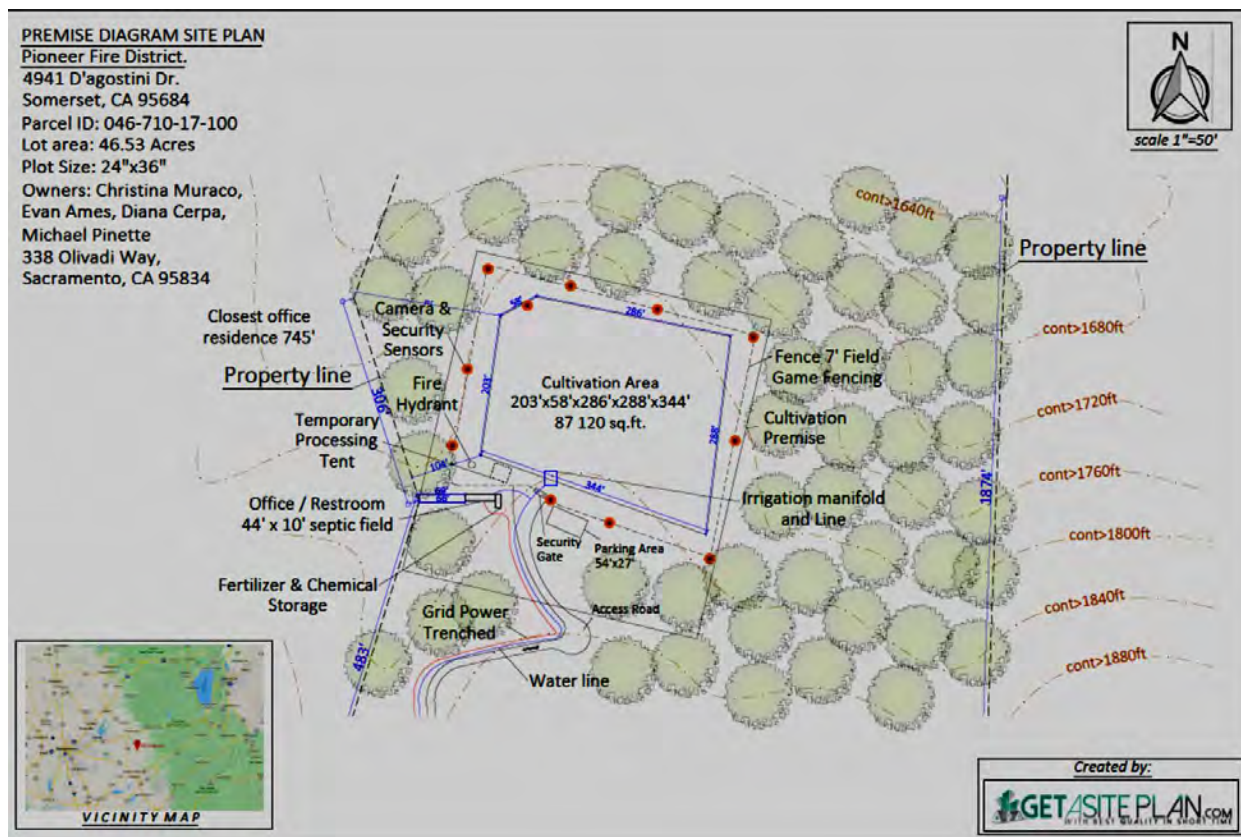


The proposed cannabis farm is to be located in an existing vineyard with mature vines. The vineyard is sited on a small bench above Flat Creek on the north and D'Agostini Road on the south. Access is via a paved road, thence down a relatively steep grade on a dirt road to the project site (Figures 1-2). The proposed cannabis farm will follow the ordinance in accordance with the county of El Dorado governing cannabis cultivation. The area of potential effect (APE) consists of an approximate zone of a 1/4 mile radius around the project site.



**Figure 1: Project Location Map  
(Aukum, CA USGS Topographic Map, 1952)**

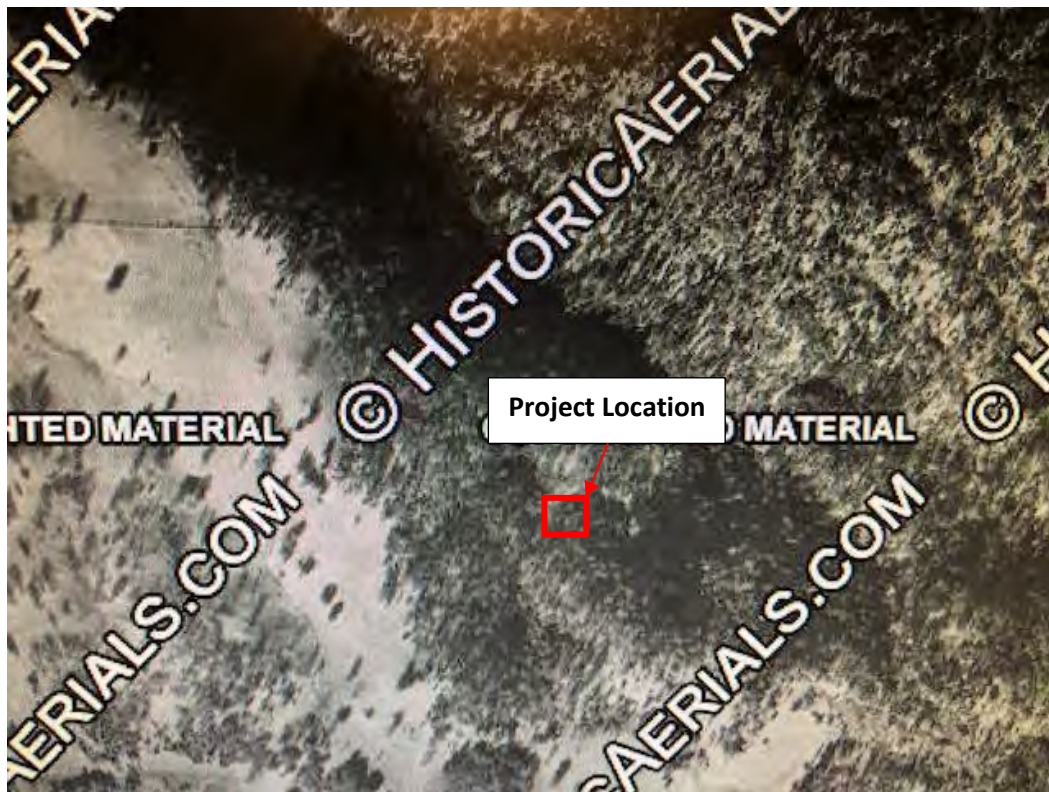




**Figure 2: Proposed Project Design Plan**

On January 28, 2020, Rod Miller requested a record search be conducted of the subject parcel at the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS). Data from the NCIC noted that no prehistoric archaeological and no historical archaeological resources were identified within the project area. One cultural resource study encompassed a portion of the project parcel. Within 1/4 mile radius of the project area, there was one prehistoric archaeological and one historical archaeological resource recorded. Additionally, one cultural resources study covered a portion of the broader search area. According to the site files at the NCIC, there were no National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), National Historic Landmark (NHL), or California Historic Landmark (CHL) listed sites within the proposed project area.

Review of historic maps and aerial images indicate that the subject parcel remained undeveloped until the past few decades when a single-family residential home was built and several areas within the parcel were cultivated for wine grapes (Figures 3-5).



**Figure 3: Aerial Photograph, 1946** (The photograph clearly depicts the open landscape along present-day D'Agostini Drive, once part of sprawling ranch used to graze livestock. Flat Creek, heavily timbered, is seen on the right-center of the photograph. Red box indicates project location (NETRonline Historic Aerials Website 2020).



**Figure 4: Aerial Photograph, 1993** (Google Earth).





**Figure 5: Aerial Photograph, 2020 (Google Earth).**

On November 6, 2020, Dana E. Supernowicz, M.A., RPA of Historic Resource Associates, conducted a pedestrian survey within the project footprint. The project is located on a small bench above Flat Creek, which lies to the north. Steep slopes delineate the subject parcel to the south and to the north, dropping down to Flat Creek.

The project site has been cultivated and planted in wine grapes. No significant prehistoric or historical archaeological sites, features, or artifacts were identified in or near the project footprint. Therefore, no further archaeological study is recommended. If the project footprint is altered, further archaeological investigation may be warranted to determine if it has the potential to affect the any cultural resources.



## Introduction

This project is being conducted under the provisions of the California Environmental Quality Act (CEQA) and the California Register of Historical Resources (CRHR) under Public Resources Code Section 5024.1. This cultural resources study was completed by Dana E. Supernowicz, M.A., RPA on November 6, 2020, in accordance with state guidelines (California State Historic Preservation Office). It is intended to provide information that will enable the El Dorado County Planning Department to review the subject project. The Principal Investigator meets and/or exceeds the qualifications described in the Secretary of the Interior's Professional Guidelines (Federal Register 48:190:44738-44739) (United States Department of the Interior 1983). Research was conducted at the North Central Information Center (NCIC), utilizing the California Historical Resources Information System (CHRIS).

## The Project and Project Site

The project site is located north of D'Agostini Drive and approximately 1 mile north of the small community of River Pines. The project site is developed with a residential home and vineyards.

## Subject Property

The Subject Property at 4941 D'Agostini Drive, located within a rural area of El Dorado County, has primarily been used to graze livestock with some limited timber harvesting over the past 150 years. The subject property was developed with a single-family residence and vineyards in the early 2000s.

## Environmental Setting

According to the United States Geological Survey (USGS) 7.5' *Aukum, California* Topographic Quadrangle Map (Figure 1), the project site is located at an elevation of approximately 1640'-1880' above mean sea level (amsl). The topography of the Subject Property is characterized by relative steep slopes with several benches along the north face of D'Agostini Drive south of Flat Creek with oak woodland, and mixed conifers.

The project area is located in the Sierra Nevada foothills, north of River Pines in southern El Dorado County. Because of its elevation the project site would have been conducive to permanent habitation since snows are infrequent, although the north face of the ridge and steep slopes would not have been ideal for habitation sites. Precontact groups in the region in which the project area is located would have subsisted primarily on freshwater fish, deer, acorns, and small game animals harvested from the surrounding water sources and foothills.

## Prehistoric Overview

The earliest inhabitants of the foothill region near River Pines in southern El Dorado County occupied the area from 4000 to 1500 years BP, have been identified as the Martis Tradition (Elston et al. 1977:171). Data collected from Garden Valley indicate an additional temporal





sequence in an area now under Bullards Bar reservoir in Yuba County (Humphreys 1969). Similarities between the Martis artifact assemblages and those of the Mesilla assemblages recovered from the nearby Oroville reservoir have been noted by Markley and Henton (1985) and Kowta (1988). According to Heizer and Elsasser (1953) the Martis phase, named after the Martis Valley, is characterized by the wide-spread use of basalt for stone tools, large, roughly shaped projectile points of the Martis type (Heizer and Elsasser 1953), atlatl weights, manos, millstones, bowl mortars, cylindrical pestles, and many flake scrapers (Moratto 1984:295). Martis is considered a series of phases, which may be of Great Basin origin, but which is distributed from the western Great Basin to the Central Valley. Its distribution roughly coincides with the ethnographic territories of the Maidu and the Washo peoples. Although probably not ancestral to the Washo, Martis may represent Maidu prehistory, including Nisenan (Moratto 1984:302-303).

The artifact assemblages of the Martis Complex typically include stemmed, corner-notched, side-notched and leaf-shaped projectile points, primarily made of basalt. These points were apparently used to tip spears and darts. Scrapers, blades, choppers, gravers and punches or drills include other edge-bearing artifacts. For grinding or milling, the mano and milling slab were widely used during the Martis phase. Both California and Great Basin elements may be observed at Martis sites (Meals 2003:2).

On the western slopes of the Sierra Nevada, the Mesilla Complex (before 3000 BP to 2000 BP) was followed by the Bidwell Complex (2000 BP to 1200 BP). The Bidwell Complex adopted traits from the Central California tradition. The Sweetwater Complex (1200 BP to 400 BP) differed considerably from the former traditions in its increasing reliance on acorn grinding mortar and pestle technology and the use of small corner-notched projectile points. This has been interpreted to indicate the arrival of a Maiduan-speaking population from the south (Kowta 1988:147-152).

Generalizing over the entire west slope of the Northern Sierra Nevada, Moratto (1984) has postulated that by 1000 B.C., the area was settled by groups of people of unknown origins who possessed both Martis and Central Valley traits. During this period, the bow and arrow were introduced, at approximately 600 A.D. - 800 A.D., and the mortar and pestle were more intensively used after 1400 A.D. (Moratto 1984:303). By 1 A.D., permanent villages were established. The greater sedentism, coupled with population growth, encouraged the development of a settlement pattern of secondary villages and seasonal camps (Moratto 1984:303). The primary villages became the political, social, and ceremonial centers for communities by 1500 A.D. (Moratto 1984:303). This pattern closely resembles the settlement system of the Nisenan, the ethnographic group which inhabited the area near the project.

## **Ethnographic Context**

The project area is located in territory generally believed to have been occupied in aboriginal and historic times near the southern territorial boundary of the Southern Maidu or Nisenan and the

northern territorial boundary of the Northern Sierra Miwok (Levy 1978). In the area of the western slope of the Sierra, the territory of the Miwok, like the Nisenan, their neighbors to the north, crossed several plant communities, making available to them a wide variety of plant resources. Numerous mineral resources, including steatite, quartz, quartzite, quartz crystals, chert, greenstone, rhyolite, and slate were available to Miwok living in the foothills. Through trade, minerals, such as obsidian, that were not available locally were obtained. Gold never played a role in commerce and trade among the Miwok or Nisenan, although after the discovery of gold in 1848, both Miwok and Nisenan participated in gold mining.

Animals hunted included deer, rabbits, and other small game. Mule deer (*Odocoileus hemionus*) were hunted in drives, with the use of fire, decoys, snares or deadfalls. Rabbits (*Lepus*) were killed with sticks or blunted arrows, trapped, snared, or rounded up with the use of nets or fire. Fish were poisoned with soaproot (*Chlorogalum pomeridianum*) and turkey mullein or caught by hand in shallow water (Wilson and Towne 1978:389-390). Weirs, nets, harpoons, traps and gorgehooks were also used to catch fish. Grasshoppers, ants, lizards, and frogs were also eaten, and salt was obtained from springs located near Cool (Heizer and Treganza 1972:340).

Tools, including arrow and spear points, knives, and scrapers, were made of basalt, chalcedony, jasper, or obsidian. Preferred basketry materials were willow (*Salix*) and redbud (*Cercis occidentalis*), but the roots of yellow pine (*Pinus ponderosa*) and bracken fern (*Pteridophyta aquilinum*) were also used. Clothing and adornment was not elaborate. Steatite and whole olivella shell bead necklaces were among the items traded from the Patwin and Maidu. Males often wore a breechcloth, and women a skirt of wire grass (Wilson and Towne 1978:391-392). Shortly after the discovery of gold in January 1848, the vicinity was overrun with white miners and by the late nineteenth century, when the placer gold excitement abated, the area was used largely for timber harvesting, small-scale farming and grazing livestock.

## Historic Context

The historic context of the project area is directly linked to the Gold Rush of the 1850s, as well as the economic and agricultural development of El Dorado County, particularly the area surrounding the mining communities of Bridgeport and Fairplay. The history of the project area is directly linked to the Gold Rush of the 1850s, the economic and agricultural development of El Dorado County, and commerce and trade between Carson Valley, Grizzly Flats, Somerset, Fair Play, and other mining camps along the forks of the Cosumnes River.

In January 1848, gold was discovered in Coloma. One year later, thousands of would-be gold seekers arrived in the "diggings." Between 1848 and 1850, Coloma, which was chosen as the county seat, was the center of economic activity in El Dorado County. The first businesses in town were Captain Shannon and Cady's New York store, S.S. Brook's store, and John Little's Emporium. Sutter's Mill continued to whip saw lumber for the growing community, but Marshall found running the mill amidst the excitement of the gold discovery, futile. By the early 1850s the mill discontinued operation. Coloma's demise as the central commercial center in El Dorado

County came in 1854, when the county seat was moved to Placerville. Placerville also became the principal city on the Emigrant Roads leading over the Sierra, and, subsequently, after the discovery of gold and later silver near Virginia City, miners, freighters, teamsters, and others traveled back and forth over the Sierra through Placerville.

Bridgeport was the closest historic community to the project, located about one mile to the southeast along the Cosumnes River near the present-day community of River Pines. The General Land Office Survey Plat Map for 1869 depicts a house, vineyard and orchard about ½ mile to the west. Bridgeport is depicted to the south of the project near the bottom of the map (Figure 6). Intensive gold placer mining occurred along the Cosumnes River and its various branches.

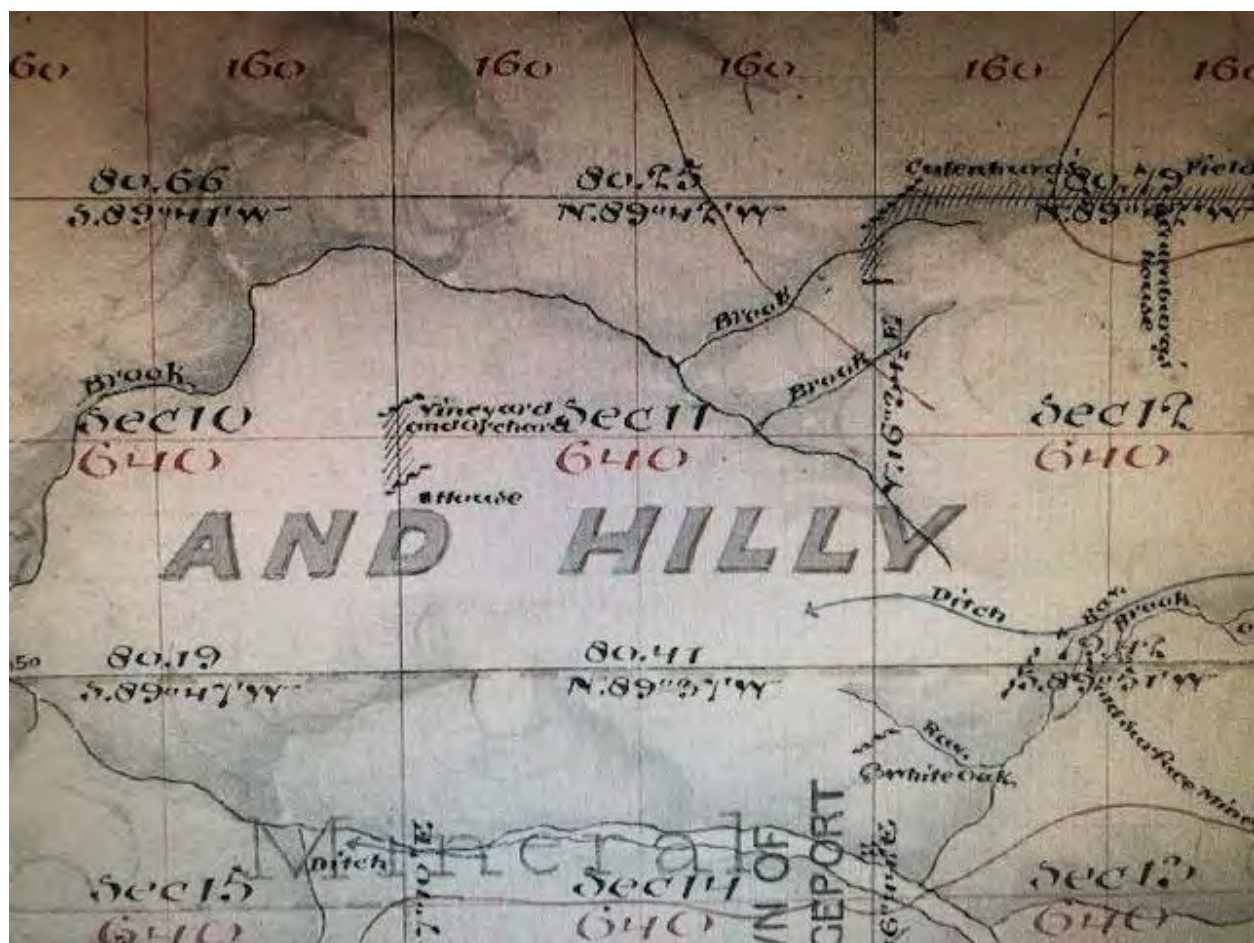


Figure 6: General Land Office Survey Plat Map, 1869.

## Known Archaeological and Historical Sites

Based upon the NCIC record search, there was one prehistoric archaeological resource recorded within ¼ mile radius of the project location. The proposed project area contains no prehistoric archaeological or historical archaeological resources.



## Prior Cultural Resource Surveys

There was one cultural resources study conducted within a ¼ mile radius of the project area. In addition, there was one cultural resources study conducted that encompassed a portion of the project location.



## Tribal Consultation

Historic Resource Associates has notified the Native American Heritage Commission (NAHC) of the impending project and has requested any information related to sacred sites within the subject parcel.



## National/State Register Files

According to the site files at the NCIC, there were no National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), National Historic Landmark (NHL), or California Historic Landmark (CHL) listed sites within the proposed project area.

## Historic Map and Aerial Photograph Review

A review of historic maps and aerial photographs (1869-2018) indicated that the subject property remained undeveloped until the early 2000s (NETRonline Historic Aerials Website 2020).



## Archaeological and Historical Sensitivity

It has been determined that the precontact sensitivity of the project footprint is low, due to the steep north facing slopes, lack of bedrock, and proximate sources of permanent water.



## Pedestrian Survey

A pedestrian survey of the project site was completed by Dana E. Supernowicz, M.A., RPA on November 6, 2020. The surface reconnaissance focused on assessing and photographing the general surface conditions found within the project area. The proposed impact area's archaeological potential was evaluated based on several factors, including proximity to recorded cultural sites, creeks, rivers and wetlands, the presence of early historic development, as well as disturbances, such as grading, fill slopes, and cutting.



Ground surfaces within the project area were observed to have been disturbed by past cultivation of a vineyard. No cultural materials, topographic anomalies, or other features that may indicate historic or precontact use were observed.

### **Conclusion and Recommendations**

No prehistoric or historic cultural resource properties were identified by this survey effort in the project footprint and no further archaeological work is recommended for the project. In the event that a concentration of artifacts or culturally modified soil deposits (including trash pits older than 50 years) should be encountered at any time during ground disturbing activities, all work must stop until a qualified archaeologist views the finds and makes a preliminary evaluation. If warranted, further archaeological work in the discovery area should be performed. Although unlikely, if human remains are encountered, all work must stop in the immediate vicinity of the discovery until the El Dorado County Coroner and a qualified archaeologist evaluate the remains.

Sincerely,

A handwritten signature in cursive script, reading "Dana E. Supernowicz", on a light-colored rectangular piece of paper.

Dana E. Supernowicz, M.A., RPA  
Historic Resource Associates

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1/28/2020

NCIC File No.: ELD-20-9

Rod Miller  
Earth Groovy Products  
6170 Oak Ridge Circle  
El Dorado, CA 95623

Records Search Results for  
4941 D'agostini Drive, Somerset, CA 95684 (APN: 046-710-17-100)

Rod Miller:

Per your request received by our office on 1/28/2020, a complete records search was conducted by searching California Historic Resources Information System (CHRIS) maps for cultural resource site records and survey reports in El Dorado County within a 1/4-mile radius of the proposed project area.

Review of this information indicates that the proposed project area contains zero (0) prehistoric-period resource(s) and zero (0) historic-period cultural resource(s). Additionally, one (1) cultural resources study report on file at this office covers a portion of the proposed project area.

Outside the proposed project area, but within the 1/4-mile radius, the broader search area contains one (1) prehistoric-period resource(s) and one (1) historic-period cultural resource(s). Additionally, one (1) cultural resources study report on file at this office covers a portion of the broader search area.

In this part of El Dorado County, archaeologists locate prehistoric-period habitation sites on elevated landforms near streams (Moratto 1984:173). This region is known as the ethnographic-period territory of the Plains Miwok. The Plains Miwok inhabited the lower reaches of the Mokelumne and Cosumnes River and both banks of the Sacramento River from Rio Vista to Freeport (Wilson and Towne 1978:398). The proposed project search area is situated in the Sierra Nevada foothills and Flat Creek flows through the parcel. Given the extent of known cultural resources and the environmental setting, there is low potential for locating prehistoric-period cultural resources in the immediate vicinity of the proposed project area.

Within the search area, the 1870 GLO plat of T8N, R11E shows evidence of a nineteenth-century vineyard, orchard, and house in the vicinity. The 1952 Aukum 7.5' USGS topographical map shows evidence of twentieth-century roads and buildings in the vicinity. Given the extent of known cultural resources and patterns of local history, there is low potential for locating historic-period cultural resources in the immediate vicinity of the proposed project area.

### **SENSITIVITY STATEMENT:**

- 1) With respect to cultural resources, it appears that the proposed project area **is not sensitive**.
- 2) Should the lead agency/authority require a cultural resources survey, a list of qualified local consultants can be found at <http://chrisinfo.org>.
- 3) If cultural resources are encountered during the project, avoid altering the materials and their context until a qualified cultural resources professional has evaluated the project area. Project personnel should not collect cultural resources. Prehistoric-period resources include: chert or obsidian flakes, projectile points, and other flaked-stone artifacts; mortars, grinding slicks, pestles, and other groundstone tools; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include: stone or adobe foundations or walls; structures and remains with square nails; mine shafts, tailings, or ditches/flumes; and refuse deposits or bottle dumps, often located in old wells or privies.
- 4) Identified cultural resources should be recorded on DPR 523 (A-J) historic resource recordation forms, available at [http://ohp.parks.ca.gov/?page\\_id=1069](http://ohp.parks.ca.gov/?page_id=1069).
- 5) Review for possible historic-period cultural resources has included only those sources listed in the referenced literature and should not be considered comprehensive. The Office of Historic Preservation has determined that buildings, structures, and objects 45 years or older may be of historical value. If the area of potential effect contains such properties not noted in our research, they should be assessed by an architectural historian before commencement of project activities.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

Thank you for using our services. Please contact North Central Information Center at (916) 278-6217 if you have any questions about this record search. An invoice is enclosed.

Sincerely,

Paul Rendes, Assistant Coordinator  
North Central Information Center

# Appendix I

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## Fire Safe Plan



## John Pickett, RPF #2976

2235 Catalina Dr., South Lake Tahoe, CA 96150  
(775) 220-7675 [jpickettRPF@gmail.com](mailto:jpickettRPF@gmail.com)

RE: Fire Plan for the Parcel 046-710-017-100

### Introduction

Single Source Solutions intends to develop an outside marijuana cultivation site on approximately 2-acres of land near Mt. Aukum, El Dorado County. The development of cultivation enterprises in El Dorado County requires developing a fire safety plan of sufficient detail to demonstrate that worker safety can be assured and that the activity does not pose a risk to adjacent communities or landscapes. A fire plan evaluates existing vegetation, slope, aspect, elevation, weather, and fire history to create an actionable plan that reduces the potential for dangerous fires to threaten the property or region.

This report builds on the Biological Assessment performed by Greg Matuzak and is included by reference in this fire plan.

### Parcel Description

#### ***Vegetation and Wildland Fuel Type***

The subject parcel is 46.5 acres, which is the area of analysis for this fire plan. The forest stand is an overstocked ponderosa pine forest, with decadent canyon live oak and gray pine present along with non-native annual weeds. The parcel is north facing and wind-protected from southwest winds and sheltered from the south and west sun. The dense canyon live oak and annual weeds create a volatile fuel mix that will cause crowning in overstory conifers even during moderate fire weather.

Over the decades, there have been numerous fires in the region, with the Sand Fire burning within ½ mile in 2014. The fuel model that best describes the vegetation on the property is an SH7 – Very High Load, Dry Climate Shrub, in the *Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model. General Technical Report RMRS-GTR-153, Scott and Burgen*.

#### ***Slope and Aspect***

Slope and aspect combine to create the topographical influences of fire on a slope. The project area generally has north-facing slopes, and so the parcel is protected from typical southwest winds that drive fire behavior in the area. However, a fire in the Cosumnes River drainage could readily burn to the parcel in up-canyon winds typical in the area. The parcel is moderately protected from the south and west sun that dries fuels earlier in the season.

The parcel is exposed to significant fire risk from the slopes above the Flat Creek. Flat Creek is a second-order tributary creek to the Cosumnes River. The Cosumnes River has a major influence on winds in the region. The "Delta breeze" can add to the typical upslope diurnal winds. The canyon can be quite gusty during the driest time of the day and will act as a chimney during a wildland fire.

#### ***Elevation***

Elevation has an important influence on fire behavior by influencing the amount and timing of precipitation and determining exposure to prevailing winds or extreme fire behavior. The subject parcel ranges from approximately 1,700 feet to 2,320 feet in elevation. This elevation has hot, dry summers with distinct seasons and moderately cool winter with precipitation falling as rain and averaging 40 inches per year. Rainfall in amounts sufficient to influence fire behavior is rare after May, and fire season begins in earnest as early as June. This leaves a long hot summer with dry fuel.





## John Pickett, RPF #2976

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### **Weather**

Local weather drives fire behavior in the Sierra Nevada. El Dorado County is exposed to dangerous Diablo winds when low pressure off California's coast and high pressure over the Great Basin result in strong, dry winds from the northeast. The subject parcel is exposed to northeast winds several times each fall. The subject parcel is exposed to strong upslope winds during much of the fire season because of the effects of solar radiation and the diurnal wind cycle in the Cosumnes River Canyon. Fires are likely to exhibit moderate spread rates with moderate flame lengths during diurnal wind and fuel-driven fires; fires can exhibit extreme fire behavior during drought. The subject parcel is also exposed to strong southwest winds from approaching low-pressure systems as they drop from the Gulf of Alaska. During these events, winds pick up from the southwest, and before the arrival of moisture, there can be a very low humidity dry slot for up to a day before the arrival of increased humidities and wetting precipitation. During this period, fires can grow explosively.

### **Fire Hazard on the Subject Parcel**

The subject parcel is exposed to considerable hazard from a volatile fuel mix and steep slopes. The SH7 fire model burns with moderate rates of spread but with very high flame lengths. And while this is an active fuel model, it is possible to moderate this hazard by reducing fuels between the best and healthiest conifers, spacing canyon live oak trees, clearing around evacuation routes and roads, and then using methods to reduce the total tonnage of biomass available to burn.

### **Defensible Space Around Homes and Work Areas**

Both homes and work areas are required to have effective defensible space so as not to expose workers or structures to unreasonable fire risk. The home's defensible space, and work area defensible space work together to create a reduced fuel area to the northeast of the home. The defensible space treatments should then be augmented to the west of the field so that a fire cannot run up the river canyon with intensity.

The structures on the property must have effective defensible space given the fire risk on the site. Dr. Jack Cohen of the U.S. Forest Service's Rocky Mountain Research Station made the following statement in his definition of the home ignition zone:

"it is a home's construction and immediate surroundings that will determine a homes probability of ignition, not its site on a fire-prone landscape."

Effective defensible space involves reducing fuels in concentric rings around the structure. The zones of defensible space are:

- **Non-combustible Area** – this area extends from the structure and out to five feet. In this area, no combustible vegetation or ground covers are permitted. Examples of non-flammable vegetation would be well-irrigated flowers or succulent plants. Compost may be used; however, flammable mulches are prohibited, such as pine needles, shredded bark, bark, and woodchips.
- **Lean, Clean, and Green Area** – this area extends from the Non-combustible area out to 30 feet. In this area, single isolated specimens of flammable plants are permitted, and most plants are kept healthy and free of dead material. Combustible mulches may not be used as a widespread ground cover and in a manner that will not carry fire.



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- Wildland Fuel Reduction Area – this area extends from the Lean, Clean, and Green Area out to the wildland. In general, it is recommended that homeowners complete at least 100 feet of defensible space, but that distance may be increased up to 300 feet in areas of particular fire hazard. In the Wildland Fuel Reduction Area, there must not be horizontal and vertical fuel continuity. Isolated patches of native shrubs, trees, and some patches of flammable ground covers are allowed. However, they must not be continuous and capable of creating a clear path for fire to reach the home or work area. Vertical fuel continuity is a condition where surface fuels are present under small or medium-sized trees directly under the larger trees that compose the forest canopy. Ladder fuels enable surface fire to travel into the forest canopy and produce flame lengths far greater than what firefighters can safely engage.

### **Defensible Space and Prescription in Work Areas**

Defensible space around the structures will be critically important because of the likely ember production from fuel below the property. Defensible space is divided into three zones: the wildland fuel zone, the Lean, Clean, and Green Zone, and the Non-combustible zone.

- The wildland fuel zone should effectively extend 200 feet or to the slope break from the structure with the annual mowing of grasses and brush.
- The Lean, Clean, and Green Zone extends from the structure to 30 feet. This zone must be mowed when grasses or brush are greater than 4 inches tall. No flammable vegetation may be present.
- The non-combustible zone extends from the structure to five feet. The subject parcel will be subject to massive ember wash during the next wildland fire. Maintaining a non-combustible zone combined with fire-safe venting and Class A roofing is the primary mitigation for ember ignition. Ember ignition generally occurs when embers strike a wall or fall in wind vertices and accumulate at the bottom of the wall or in an inside corner of the structure. If there is any flammable material in this area, the structure will be at increased risk. This area should likely be graveled in and treated with herbicide so that no vegetation can grow in this area. No leaf litter should be allowed to accumulate.

### **Evacuation Planning**

It is recommended that a written evacuation plan be created for the subject parcel. During fire season and particularly on red flag days, people should monitor local news and look for smoke in the region of the property. A meeting area should be established, and workers shown where to assemble for further evacuation instructions. Workers new to the area should practice evacuating by several different routes. The Fire Marshal can help review a general evacuation plan.

### **Prescription for Fuels Reduction**

The SH7 fuel model is a chaparral fuel model that can exhibit quite extreme fire behavior. Flame lengths can be quite high. In this fuel model, it is imperative to create a 200 to 300-foot buffer around the home and structures to enable firefighters to engage a fire. The SH7 is too volatile for direct attack during extreme fire weather.

The basic prescription for fuels reduction on the property is to create gaps of at least 20-feet between oak crowns or 25-feet of space between conifer boles. Retain the dominant and codominant conifers on the parcel. Then retain mature trees greater than 25-feet from another designated leave tree.



## John Pickett, RPF #2976

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Retain all trees greater than 24 inches DBH for pine and 36 inches DBH for oak. Retain trees in the following order: Ponderosa pine, black oak, blue oak, valley oak, and canyon live oak.

***It is my opinion that the above prescription complies with the El Dorado Oak Management Program and is exempt because it is a fire-safe treatment related to an existing structure.***

The shaded fuel break units will be treated using three different treatment methodologies.

- Mastication – A skid steer-mounted masticator can effectively mow canyon live oak. An example is the Fecon FTX350. The downside is that it will leave significant mulch depths that will be slow to decay.
- Tree shear or hot saw, skid, and chip – In this treatment, a tree shear or hot saw cuts the excess trees creating at least 30-foot crown spacing. The shear bunches the cut material, which is then skidded to a landing for processing. This is an excellent treatment for live oak, with the caveat that chipping and hauling are expensive.
- Tree shear or hot saw, machine grapple pile, and burn - In this treatment, trees, focusing on the canyon live oak, are cut and piled. The piles can be up to 15'x15' but must be at least 10 feet from residual trees. Pile burning can be completed during the winter period.

### **Conclusion**

The project area is in a high fire hazard area with dense canyon live oak and native chaparral composing the primary fuel types. The parcel is a fuel model SH7 capable of supporting high rates of spread with high flame lengths. Effective fuel reduction can be obtained by creating a reduced fuel zone approximately 300-feet wide around the structure and then creating effective defensible space. The parcel is exposed to considerable fire hazard, and currently, the structure on the property is unlikely to survive a wildland fire.

It is recommended that the property owner work with the neighborhood to apply for a landscape scale grant to treat the extreme fuel loading in the canyon below the community. A grant would be quite competitive, particularly if it covers a large portion of the community.

## Appendix J

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### AB 52 Consultation Record





# PLANNING AND BUILDING DEPARTMENT

## PLANNING SERVICES DIVISION

<http://www.edcgov.us/DevServices/>

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**PLACERVILLE OFFICE:**

2850 Fairlane Court, Placerville, CA 95667

**BUILDING**

(530) 621-5315 / (530) 622-1708 Fax

[bldgdept@edcgov.us](mailto:bldgdept@edcgov.us)

**PLANNING**

(530) 621-5355 / (530) 642-0508 Fax

[planning@edcgov.us](mailto:planning@edcgov.us)

**LAKE TAHOE OFFICE:**

924 B Emerald Bay Rd

South Lake Tahoe, CA 96150

(530) 573-3330

(530) 542-9082 Fax

**June 28, 2021**

Colfax-Todds Valley Consolidated Tribe  
Pamela Cubbler, Treasurer  
P.O. Box 4884  
Auburn, CA 95604

CERTIFIED MAIL

RE: Assembly Bill 52 Consultation for **CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION** - a Proposed Project within the County of El Dorado

Dear Ms. Cubbler,

This letter is in response to your request received on March 6, 2018 for formal notification of proposed projects within the Colfax-Todds Valley Consolidated Tribe Geographic Area of Traditional and Cultural Affiliation.

**CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION (John Muraco, Joe Wiseman, Rod Miller/Michael and Joan Pinette).** The proposed project will be located on property, identified by Assessor's Parcel Number 046-710-017, consists of 46.53 acres, and is located on the north side of D'Agostini Drive, **in the Mt. Aukum area.**

**County Planner: Aaron Mount, 530-621-5345**

Project Documentation can be viewed by using the following link:

<https://drive.google.com/drive/folders/17vwVrwbUBvaCDB1TVATdlR7zoaO3dhQK?usp=sharing>

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cc. Clyde Prout, Chairperson

24-0520 E 216 of 247



# PLANNING AND BUILDING DEPARTMENT

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<http://www.edcgov.us/DevServices/>

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**PLACERVILLE OFFICE:**

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[bldgdept@edcgov.us](mailto:bldgdept@edcgov.us)

**PLANNING**

(530) 621-5355 / (530) 642-0508 Fax

[planning@edcgov.us](mailto:planning@edcgov.us)

**LAKE TAHOE OFFICE:**

924 B Emerald Bay Rd

South Lake Tahoe, CA 96150

(530) 573-3330

(530) 542-9082 Fax

June 28, 2021

Ione Band of Miwok Indians  
Sara D. Setshwaelo, Chairperson  
9252 Bush Street, Suite 2  
Plymouth, CA 95669

CERTIFIED MAIL

RE: Assembly Bill 52 Consultation for **CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION** - a Proposed Project within the County of El Dorado

Dear Ms. Setshwaelo,

This letter is in response to your request received on March 7, 2016 for formal notification of proposed projects within the Ione Band of Miwok Indians Geographic Area of Traditional and Cultural Affiliation.

**CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION (John Muraco, Joe Wiseman, Rod Miller/Michael and Joan Pinette).** The proposed project will be located on property, identified by Assessor's Parcel Number 046-710-017, consists of 46.53 acres, and is located on the north side of D'Agostini Drive, **in the Mt. Aukum area.**

**County Planner: Aaron Mount, 530-621-5345**

Project Documentation can be viewed by using the following link:

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**LAKE TAHOE OFFICE:**

924 B Emerald Bay Rd

South Lake Tahoe, CA 96150

(530) 573-3330

(530) 542-9082 Fax

**June 28, 2021**

Nashville Enterprise Miwok-Maidu-Nishinam Tribe  
Mr. Cosme Valdez, Chairperson  
P.O. Box 580986  
Elk Grove, CA 95758

CERTIFIED MAIL

RE: Assembly Bill 52 Consultation for **CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION** - a Proposed Project within the County of El Dorado

Dear Mr. Valdez,

This letter is in response to your request received on July 15, 2016 for formal notification of proposed projects within the Nashville-El Dorado Miwok Geographic Area of Traditional and Cultural Affiliation.

**CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION (John Muraco, Joe Wiseman, Rod Miller/Michael and Joan Pinette).** The proposed project will be located on property, identified by Assessor's Parcel Number 046-710-017, consists of 46.53 acres, and is located on the north side of D'Agostini Drive, **in the Mt. Aukum area.**

**County Planner: Aaron Mount, 530-621-5345**

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**LAKE TAHOE OFFICE:**

924 B Emerald Bay Rd

South Lake Tahoe, CA 96150

(530) 573-3330

(530) 542-9082 Fax

June 28, 2021

Shingle Springs Band of Miwok Indians  
Regina Cuellar, Chairperson  
P.O. Box 1340  
Shingle Springs, CA 95682

CERTIFIED MAIL

RE: Assembly Bill 52 Consultation for **CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION** - a Proposed Project within the County of El Dorado

Dear Ms. Cuellar,

This letter is in response to your request received on July 15, 2016 for formal notification of proposed projects within the Shingle Springs Band of Miwok Indians Geographic Area of Traditional and Cultural Affiliation.

**CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION (John Muraco, Joe Wiseman, Rod Miller/Michael and Joan Pinette).** The proposed project will be located on property, identified by Assessor's Parcel Number 046-710-017, consists of 46.53 acres, and is located on the north side of D'Agostini Drive, in the Mt. Aukum area.

**County Planner: Aaron Mount, 530-621-5345**

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cc. James Sarmento, Executive Director of Cultural Resources

24-0520 E 219 of 247





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**LAKE TAHOE OFFICE:**

924 B Emerald Bay Rd

South Lake Tahoe, CA 96150

(530) 573-3330

(530) 542-9082 Fax

June 28, 2021

Tsi Akim Maidu  
Mr. Don Ryberg, Chairperson  
P.O. Box 510  
Browns Valley, CA 95918

CERTIFIED MAIL

RE: Assembly Bill 52 Consultation for **CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION** - a Proposed Project within the County of El Dorado

Dear Mr. Ryberg,

This letter is in response to your request received on July 15, 2016 for formal notification of proposed projects within the T'si-Akim Maidu Geographic Area of Traditional and Cultural Affiliation.

**CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION (John Muraco, Joe Wiseman, Rod Miller/Michael and Joan Pinette).** The proposed project will be located on property, identified by Assessor's Parcel Number 046-710-017, consists of 46.53 acres, and is located on the north side of D'Agostini Drive, in the Mt. Aukum area.

**County Planner: Aaron Mount, 530-621-5345**

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cc. Grayson Coney, Cultural Director

24-0520 E 220 of 247



# PLANNING AND BUILDING DEPARTMENT

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**LAKE TAHOE OFFICE:**

924 B Emerald Bay Rd

South Lake Tahoe, CA 96150

(530) 573-3330

(530) 542-9082 Fax

**June 28, 2021**

United Auburn Indian Community of the Auburn Rancheria  
Gene Whitehouse, Chairperson  
10720 Indian Hill Road  
Auburn, CA 95603

CERTIFIED MAIL

RE: Assembly Bill 52 Consultation for **CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION** - a Proposed Project within the County of El Dorado

Dear Mr. Whitehouse,

This letter is in response to your request received on February 18, 2020 for formal notification of proposed projects within the United Auburn Indian Community of the Auburn Rancheria's Geographic Area of Traditional and Cultural Affiliation.

**CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION (John Muraco, Joe Wiseman, Rod Miller/Michael and Joan Pinette).** The proposed project will be located on property, identified by Assessor's Parcel Number 046-710-017, consists of 46.53 acres, and is located on the north side of D'Agostini Drive, **in the Mt. Aukum area.**

**County Planner: Aaron Mount, 530-621-5345**

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**LAKE TAHOE OFFICE:**

924 B Emerald Bay Rd

South Lake Tahoe, CA 96150

(530) 573-3330

(530) 542-9082 Fax

June 28, 2021

Washoe Tribe of Nevada and California  
Darrel Cruz, Cultural Resources Department  
919 Highway 395 North  
Gardnerville, NV 89410

CERTIFIED MAIL

RE: Assembly Bill 52 Consultation for **CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION** - a Proposed Project within the County of El Dorado

Dear Mr. Cruz,

This letter is in response to your request received on May 2, 2016 for formal notification of proposed projects within the Washoe Tribe of Nevada and California Geographic Area of Traditional and Cultural Affiliation.

**CCUP21-0004/SINGLE SOURCE SOLUTIONS COMMERCIAL CANNABIS CULTIVATION (John Muraco, Joe Wiseman, Rod Miller/Michael and Joan Pinette).** The proposed project will be located on property, identified by Assessor's Parcel Number 046-710-017, consists of 46.53 acres, and is located on the north side of D'Agostini Drive, in the Mt. Aukum area.

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cc. Serrell Smokey, Chairperson

24-0520 E 222 of 247

# Appendix K

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## Acoustics Analysis





Earth Groovy Products LLC 530-503-9078 Office 530-748-9822 [earthgroovy.com](http://earthgroovy.com)

Technical Memo  
Acoustic Assessment  
Commercial Cannabis Cultivation  
CUP-Application of  
Single Source Solutions Inc.  
4941 D'agostini Dr. Somerset, CA  
APN# 046-710-17-100

Owners John Muraco Jr., Joe Wiseman, and Michael Pinette  
May 24th, 2021

### **Summary and Background**

The applicants seek licenses for two acres of commercial cannabis cultivation in the form of 87,120 sq. ft. outdoor full-term cultivation. The project includes the development of security features, fire safety features, modular office, eight modified shipping containers for harvest storage and processing, and solar power. Phase Two of the project will have 1.28 acres of hoop houses installed on the east side of the cultivation area.

The cannabis activity is located in the middle of a 46.53 acre parcel. Its located in a valley with a 2+ acre clearing within a heavily forested area. The closest neighbor residence is approximately 745' away from the cultivation area.

The project area is an existing vineyard that utilizes a tractor for agricultural activity.

The only new sound source from the project beyond temporary construction vehicles is a backup generator housed within a shed.

### **Generator**

While the property has PG&E electricity, the cannabis premises will use solar power with a backup generator to power the cannabis cultivation.

The generator utilized will be the same or comparable to Model #ESI7000iER-EFI Lifan 7000 watt gasoline generator. According to the manufacturer's specifications, the generator produces 53 decibels 23 feet from the generator. The generator will be housed within a Tuff Shed that holds the batteries and inverter for the solar system. The Tuff Shed will be fitted with

rubber mats and wall and window soundproofing. It is reasonable to estimate that a Tuff Shed fitted with soundproofing will reduce the decibels of the generator operating in the shed by 10 decibels. Hence, the generator will produce 43 decibels. The closest property line is over 86' to the West. The ambient sound level for the property is 31-45 dBs depending on the wind.

Pursuant to the Inverse Square Law for every doubling of distance from the sound source, the sound level reduces by 6 decibels (dB). The generator will not exceed county noise standards (50-60 decibels at the property line depending on the time day in Rural Regions). Generator Sound likely will be detectable at the property line but near the lowest end of the ambient sound level averaging 31.5 dB.

### **Monitoring**

Db generated by the generator or other unknown sources will be monitored for compliance with county noise and worker protection standards. If there is noise exceeding, on average, county, state, or federal standards then the project will take further steps to mitigate noise.

### **Construction Noise**

Contract provisions will be used with construction contractors that will require them to comply with county noise standards while constructing project components.

Prepared by Rod Miller Managing Member Earth Groovy Products LLC

## Appendix L

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### Soil Resource Report



United States  
Department of  
Agriculture

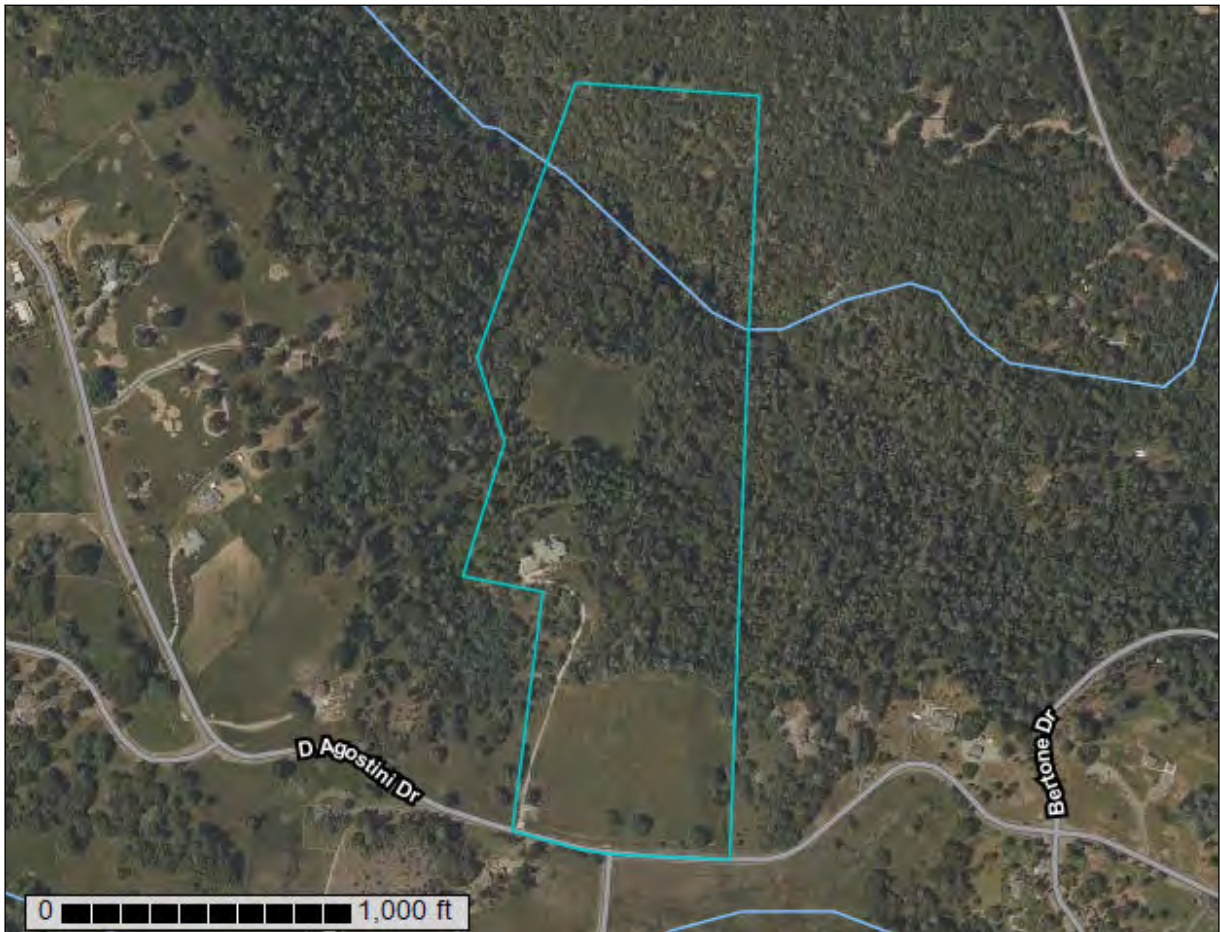
NRCS

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for El Dorado Area, California

SingleSource



June 21, 2022

24-0520 E 227 of 247



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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# Contents

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<b>Preface</b> .....	2
<b>How Soil Surveys Are Made</b> .....	5
<b>Soil Map</b> .....	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
El Dorado Area, California.....	13
AoB—Argonaut loam, seeped variant.....	13
AsC—Auberry rocky coarse sandy loam, 5 to 15 percent slopes.....	14
AtD—Auberry very rocky coarse sandy loam, 15 to 30 percent slopes.....	15
MtE—Musick very rocky sandy loam, 15 to 50 percent slopes.....	17
PrD—Placer diggings.....	18
<b>References</b> .....	20

# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil



## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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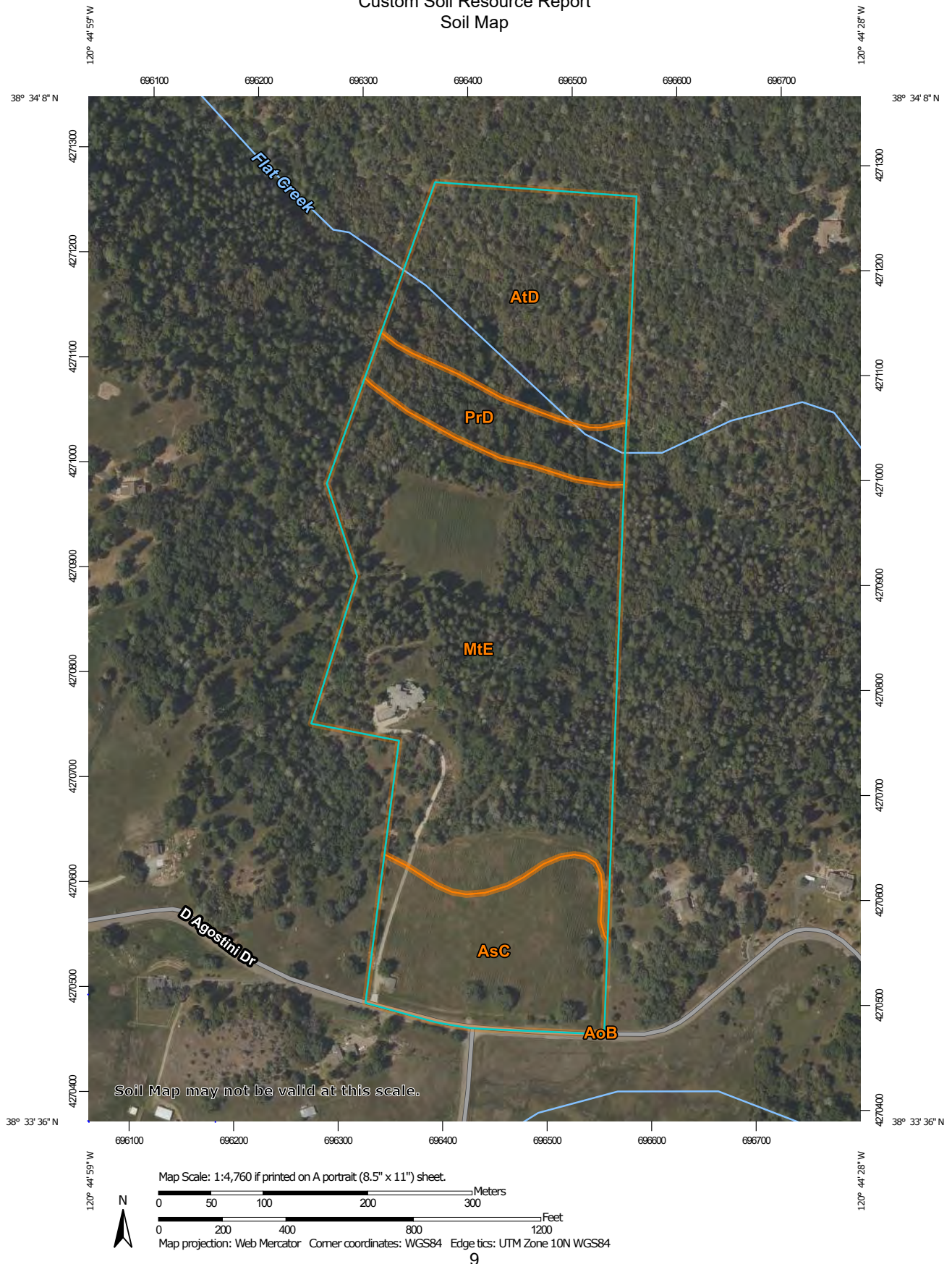
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map






## Custom Soil Resource Report

### MAP LEGEND

#### Area of Interest (AOI)

 Area of Interest (AOI)

#### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

#### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

#### Water Features



Streams and Canals

#### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

#### Background



Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Dorado Area, California  
Survey Area Data: Version 13, Sep 3, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2019—Oct 29, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AoB	Argonaut loam, seeped variant	0.0	0.0%
AsC	Auberry rocky coarse sandy loam, 5 to 15 percent slopes	7.9	16.5%
AtD	Auberry very rocky coarse sandy loam, 15 to 30 percent slopes	10.7	22.5%
MtE	Musick very rocky sandy loam, 15 to 50 percent slopes	25.7	53.9%
PrD	Placer diggings	3.4	7.1%
<b>Totals for Area of Interest</b>		<b>47.7</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

## Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## El Dorado Area, California

### AoB—Argonaut loam, seeped variant

#### Map Unit Setting

*National map unit symbol:* hhyg  
*Elevation:* 1,800 to 4,000 feet  
*Mean annual precipitation:* 40 inches  
*Mean annual air temperature:* 54 degrees F  
*Frost-free period:* 140 to 240 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Argonaut variant and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Argonaut Variant

##### Setting

*Landform:* Ridges  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Gleyed residuum weathered from slate

##### Typical profile

*H1 - 0 to 8 inches:* loam  
*H2 - 8 to 17 inches:* silty clay loam  
*H3 - 17 to 32 inches:* clay  
*H4 - 32 to 36 inches:* weathered bedrock

##### Properties and qualities

*Slope:* 0 to 5 percent  
*Depth to restrictive feature:* 32 to 36 inches to paralithic bedrock  
*Drainage class:* Poorly drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 24 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 5.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 4w  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

#### Minor Components

##### Unnamed

*Percent of map unit:* 11 percent  
*Landform:* Fan remnants

*Hydric soil rating:* No

**Unnamed**

*Percent of map unit:* 2 percent

*Landform:* Drainageways

*Hydric soil rating:* Yes

**Unnamed**

*Percent of map unit:* 2 percent

*Landform:* Drainageways

*Hydric soil rating:* Yes

**AsC—Auberry rocky coarse sandy loam, 5 to 15 percent slopes**

**Map Unit Setting**

*National map unit symbol:* hhyl

*Elevation:* 400 to 3,500 feet

*Mean annual precipitation:* 25 to 35 inches

*Mean annual air temperature:* 59 degrees F

*Frost-free period:* 150 to 260 days

*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Auberry and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Auberry**

**Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave

*Across-slope shape:* Convex

*Parent material:* Residuum weathered from granite and/or residuum weathered from granodiorite

**Typical profile**

*H1 - 0 to 13 inches:* coarse sandy loam

*H2 - 13 to 36 inches:* sandy clay loam

*H3 - 36 to 56 inches:* coarse sandy loam

*H4 - 56 to 60 inches:* weathered bedrock

**Properties and qualities**

*Slope:* 5 to 15 percent

*Depth to restrictive feature:* 56 to 60 inches to paralithic bedrock

*Drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)



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*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Moderate (about 7.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* 4e

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* C

*Ecological site:* F018XI205CA - Thermic Granitic Foothills 27-40 PZ

*Hydric soil rating:* No

### Minor Components

#### Ahwahnee

*Percent of map unit:* 8 percent

*Hydric soil rating:* No

#### Sierra

*Percent of map unit:* 7 percent

*Hydric soil rating:* No

## AtD—Auberry very rocky coarse sandy loam, 15 to 30 percent slopes

### Map Unit Setting

*National map unit symbol:* hhym

*Elevation:* 400 to 3,500 feet

*Mean annual precipitation:* 25 to 35 inches

*Mean annual air temperature:* 59 degrees F

*Frost-free period:* 150 to 260 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Auberry and similar soils:* 75 percent

*Rock outcrop:* 15 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Auberry

#### Setting

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave

*Across-slope shape:* Convex

*Parent material:* Residuum weathered from granite and/or residuum weathered from granodiorite

#### Typical profile

*H1 - 0 to 13 inches:* coarse sandy loam

## Custom Soil Resource Report

*H2 - 13 to 36 inches:* sandy clay loam  
*H3 - 36 to 56 inches:* coarse sandy loam  
*H4 - 56 to 60 inches:* weathered bedrock

### Properties and qualities

*Slope:* 15 to 30 percent  
*Depth to restrictive feature:* 56 to 60 inches to paralithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 7.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* 6e  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* C  
*Ecological site:* F018XI205CA - Thermic Granitic Foothills 27-40 PZ  
*Hydric soil rating:* No

### Description of Rock Outcrop

#### Setting

*Parent material:* Granite and/or granodiorite

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8  
*Hydric soil rating:* No

### Minor Components

#### Ahwahnee

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

#### Boomer

*Percent of map unit:* 3 percent  
*Landform:* Mountain slopes, hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Sierra

*Percent of map unit:* 3 percent  
*Hydric soil rating:* No

## **MtE—Musick very rocky sandy loam, 15 to 50 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* hj0s  
*Elevation:* 2,000 to 5,000 feet  
*Mean annual precipitation:* 35 to 70 inches  
*Mean annual air temperature:* 50 to 57 degrees F  
*Frost-free period:* 140 to 200 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Musick and similar soils:* 75 percent  
*Rock outcrop:* 15 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Musick**

#### **Setting**

*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Shoulder, backslope  
*Landform position (three-dimensional):* Mountainflank, mountaintop  
*Down-slope shape:* Concave  
*Across-slope shape:* Convex  
*Parent material:* Colluvium derived from granite and/or colluvium derived from granodiorite

#### **Typical profile**

*H1 - 0 to 12 inches:* sandy loam  
*H2 - 12 to 18 inches:* sandy clay loam  
*H3 - 18 to 42 inches:* sandy clay loam  
*H4 - 42 to 56 inches:* sandy clay loam  
*H5 - 56 to 60 inches:* sandy loam

#### **Properties and qualities**

*Slope:* 15 to 50 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* High (about 9.1 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* 6e  
*Land capability classification (nonirrigated):* 6e

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*Hydrologic Soil Group: C*

*Ecological site: F022AW007CA - Deep Mesic Mountains >40"ppt*

*Hydric soil rating: No*

### Description of Rock Outcrop

#### Setting

*Parent material: Granite*

#### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 8*

*Hydric soil rating: No*

### Minor Components

#### Holland

*Percent of map unit: 3 percent*

*Landform: Mountain slopes*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Mountainflank*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Hydric soil rating: No*

#### Shaver

*Percent of map unit: 3 percent*

*Landform: Mountain slopes*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Mountainflank*

*Down-slope shape: Concave*

*Hydric soil rating: No*

#### Chaix

*Percent of map unit: 2 percent*

*Hydric soil rating: No*

#### Josephine

*Percent of map unit: 2 percent*

*Hydric soil rating: No*

### PrD—Placer diggings

#### Map Unit Composition

*Placer diggings: 90 percent*

*Minor components: 10 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

## **Description of Placer Diggings**

### **Setting**

*Parent material:* Alluvium derived from mixed sources

### **Typical profile**

*H1 - 0 to 60 inches:* fine sandy loam, cobbles

### **Properties and qualities**

*Slope:* 2 to 15 percent

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)

*Frequency of flooding:* OccasionalNone

*Available water supply, 0 to 60 inches:* Very low (about 1.2 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8

*Ecological site:* R018XD084CA - PLACER DIGGINGS

*Hydric soil rating:* No

## **Minor Components**

### **Unnamed**

*Percent of map unit:* 10 percent

*Landform:* Channels

*Hydric soil rating:* Yes



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