

September 10, 2013

Hillary Gitelman
Napa County PBES
1195 Third Street
Room 210
Napa, CA 94559

RE: Sinegal Estate Winery Use Permit Assistance
 Project Number 2013080

Dear Ms. Gitelman:

This correspondence is a Phase I Water Availability Analysis for the Sinegal Estates Use Permit Application.

A Water Availability Analysis, in accordance with Napa County policy, is required for the purpose of addressing the potential for a project to adversely impact the ground water supplies of neighbors. The following information is provided to verify that the Public Works criteria are satisfied.

1. SITE PLAN

Refer to the Overall Site Plan in Enclosure A general layout of the project components. These plans also include approximate property boundaries, existing buildings and agriculture, and the proposed winery process wastewater and sanitary sewage systems. A vicinity map is also supplied in Enclosure A to help in locating the site.

2. PROJECT DESCRIPTION

Sinegal Estates is seeking County approval to modify the existing facility. The winery production capacity is currently 13,200 gallons per year. An ultimate production capacity of 60,000 gallons of wine is being requested. The site is on parcel APN 027-120-008 totaling 25.8 acres located at 2125 Inglewood Avenue, in St. Helena, California.

Treated process wastewater will be disposed of using a Membrane Bioreactor (MBR) package treatment system, and sanitary sewage will be managed using a pretreatment subsurface drip system. The water sources include an existing well, City of St. Helena water, and pond water originating from two seasonal creeks. Well water is used within the winery and for irrigation, the

City water source is used within the residence and guest house, and pond water is used within the vineyards for irrigation, frost protection, and heat suppression.

3. PROJECTED WATER CONSUMPTION

The total water requirement has been calculated using projected rates for a facility of this size, and input from the winery and vineyard personnel. The projected water consumption and usage figures are summarized in the Phase I Study worksheet. The analysis shows a total projected water usage approximately 16.3 acre-feet per year, inclusive of winery process/domestic water, landscape, and vineyard and orchard irrigation water demands.

Existing/Baseline Water Demand:

$$\text{Vineyard Water} = 12 \text{ acres} \times \left(0.2 \frac{\text{ac}\cdot\text{ft}}{\text{ac}\cdot\text{yr}} \text{ irrigation} + 0.25 \frac{\text{ac}\cdot\text{ft}}{\text{ac}\cdot\text{yr}} \text{ heat protection} + 0.25 \frac{\text{ac}\cdot\text{ft}}{\text{ac}\cdot\text{yr}} \text{ frost protection} \right) = 8.4 \frac{\text{ac}\cdot\text{ft}}{\text{yr}}$$

$$\text{Olive Orchard Water}^* = 1.2 \text{ acres} \times 4.0 \frac{\text{ac}\cdot\text{ft}}{\text{ac}\cdot\text{yr}} = 4.8 \frac{\text{ac}\cdot\text{ft}}{\text{yr}}$$

$$\text{Total} = 13.2 \text{ ac}\cdot\text{ft}/\text{yr}$$

*The area of the onsite olive orchard is estimated based on Google Earth imagery.

Winery Existing Use (13,200 gallon wine production):

Based on Napa County Phase 1 guidelines, the process water use and domestic & landscaping water use were determined as shown below:

$$\text{Process Water} = 13,200 \text{ gal wine} \times \frac{2.15 \text{ ac}\cdot\text{ft}}{100,000 \text{ gal wine}} = 0.28 \frac{\text{ac}\cdot\text{ft}}{\text{yr}}$$

$$\text{Domestic \& Landscaping Water} = 13,200 \text{ gal wine} \times \frac{0.5 \text{ ac}\cdot\text{ft}}{100,000 \text{ gal wine}} = 0.066 \frac{\text{ac}\cdot\text{ft}}{\text{yr}}$$

The domestic and landscaping portions are estimated as shown below:

$$\text{Estimated Domestic Winery Water}^* = 15 \frac{\text{gal}}{\text{day}} \times 365 \text{ day} \times \frac{1 \text{ ac}\cdot\text{ft}}{325,821 \text{ gal}} = 0.0168 \frac{\text{ac}\cdot\text{ft}}{\text{yr}}$$

$$\text{Landscaping Water Use} = 0.066 \text{ ac}\cdot\text{ft} - 0.0168 \text{ ac}\cdot\text{ft} = 0.049 \frac{\text{ac}\cdot\text{ft}}{\text{yr}}$$

* The domestic winery water use was estimated based on the current use permit allotment of a single employee and no wine tasting at the facility.

The total winery water use was determined as shown below:

$$\text{Winery Water} = \text{Process Water} + \text{Domestic Winery Water}$$

$$= 0.28 \text{ ac} \cdot \text{ft} + 0.0168 \text{ ac} \cdot \text{ft} = 0.30 \frac{\text{ac} \cdot \text{ft}}{\text{yr}}$$

Winery Proposed (60,000 gallon wine production):

Based on Napa County Phase 1 guidelines, the process water use and domestic & landscaping water use were determined as shown below:

$$\text{Process Water} = 60,000 \text{ gal wine} \times \frac{2.15 \text{ ac} \cdot \text{ft}}{100,000 \text{ gal wine}} = 1.29 \frac{\text{ac} \cdot \text{ft}}{\text{yr}}$$

$$\text{Landscaping Water}^* = 60,000 \text{ gal wine} \times \frac{0.5 \text{ ac} \cdot \text{ft}}{100,000 \text{ gal wine}} = 0.30 \frac{\text{ac} \cdot \text{ft}}{\text{yr}}$$

$$\text{Domestic Winery Water}^* \approx 408 \frac{\text{gal}}{\text{day}} \times 365 \text{ day} \times \frac{1 \text{ ac} \cdot \text{ft}}{325,821 \text{ gal}} = 0.457 \text{ ac} \cdot \text{ft}$$

*We utilized the Napa County guidelines for the domestic and landscaping water usage (0.5 ac-ft of water per 100,000 gallons of wine produced) totaling 0.30 ac-ft of water demand per year (average of 268 gallons per day). Since estimated domestic water use (0.457 ac-ft/yr) is larger than the flows determined based on Phase I guidelines, the domestic water and landscaping flows determined based on the Phase I guidelines were conservatively assumed to account only for landscaping (0.3 ac-ft/yr). The domestic winery water use was estimated by averaging the Peak Tasting Day without event (108 gpd) and Peak Tasting Day with event flows (708 gpd). The average domestic winery water use flows were conservatively assumed to occur over 365 days per year.

The total winery water use was determined as shown below:

$$\text{Winery Water} = \text{Process Water} + \text{Domestic Winery Water}$$

$$= 1.29 \text{ ac} \cdot \text{ft} + 0.457 \text{ ac} \cdot \text{ft} = 1.75 \frac{\text{ac} \cdot \text{ft}}{\text{yr}}$$

Residential Demand:

Based on Napa County guidelines, the primary and secondary residences were conservatively assumed to require the suggested flows of 0.75 acre-ft per year and 0.30 acre-ft per year, respectively.

4. PEAK USAGE

Vineyard Irrigation will typically begin in June when onsite soils begin to dry and continue until October, with the peak irrigation period between July and August. All vineyard irrigation water will be supplied by the onsite well and pond water recharged by two seasonal creeks. The tertiary treated wastewater will also be used for vineyard irrigation.

Peak demand for process water in the winery will occur during the harvest, typically in September. These demands will be on the order of 2 to 3 times the average process water demand.

The water demand for domestic uses in the winery will be relatively steady throughout the year, with the exception of the intermittent events.

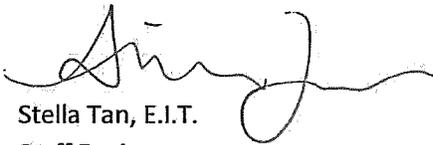
5. WATER SOURCE AND DELIVERY FACILITY

Water for processes and domestic uses at the winery will be supplied by the existing well, which is located as shown on the attached Site Plan. Irrigation water will be supplied by the well in addition to the pond.

6. SUMMARY

The proposed annual water demand for the Sinegal Estate Parcel is projected to be 16.3 acre-feet, which is below the allowable water allotment of 30 acre-feet.

Sincerely,



Stella Tan, E.I.T.
Staff Engineer

Enclosure A: Vicinity Map

Site Plan

Enclosure B: Water Availability Analysis, Phase I Study

ENCLOSURE A

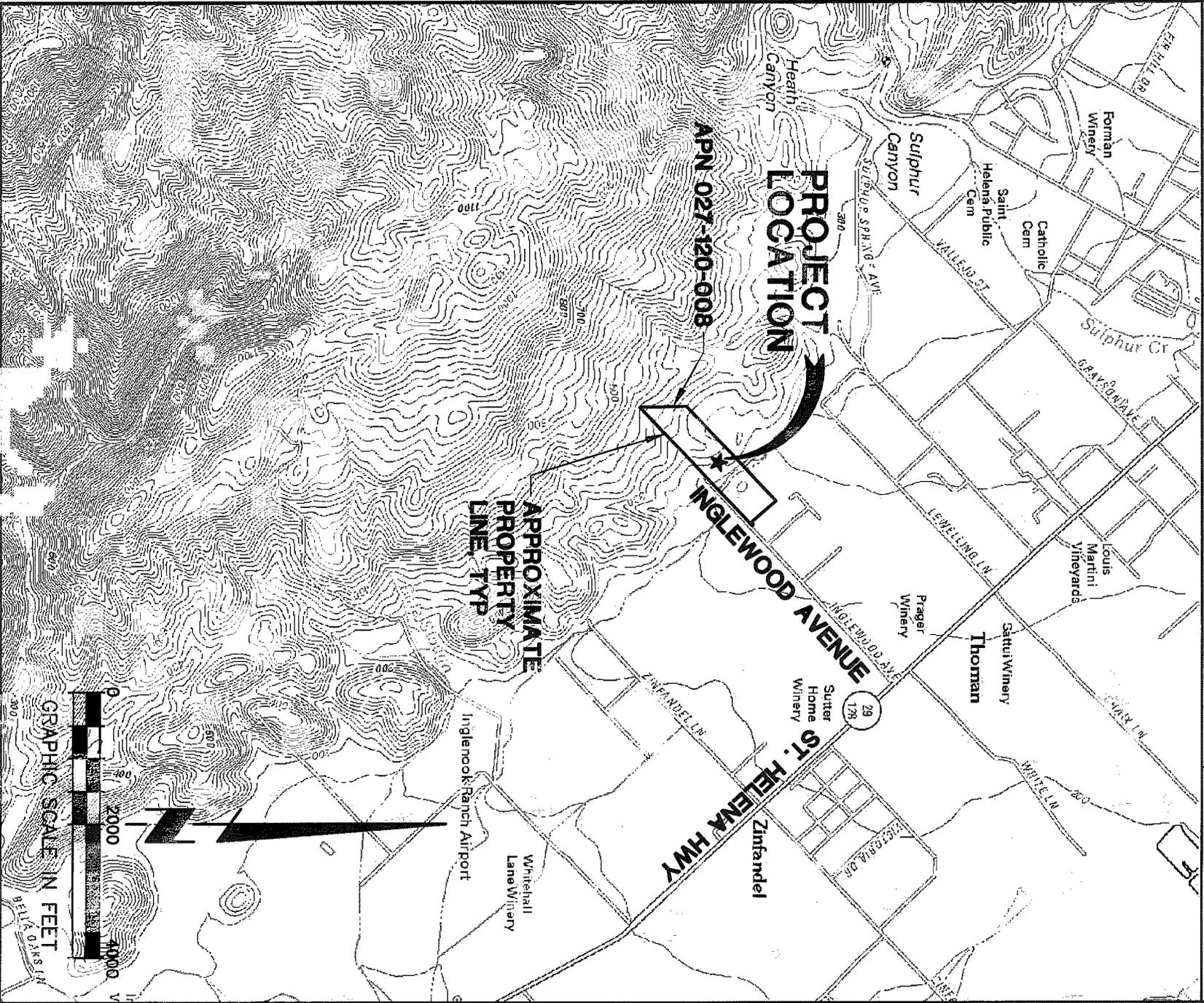
VICINITY MAP

SITE PLAN

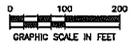
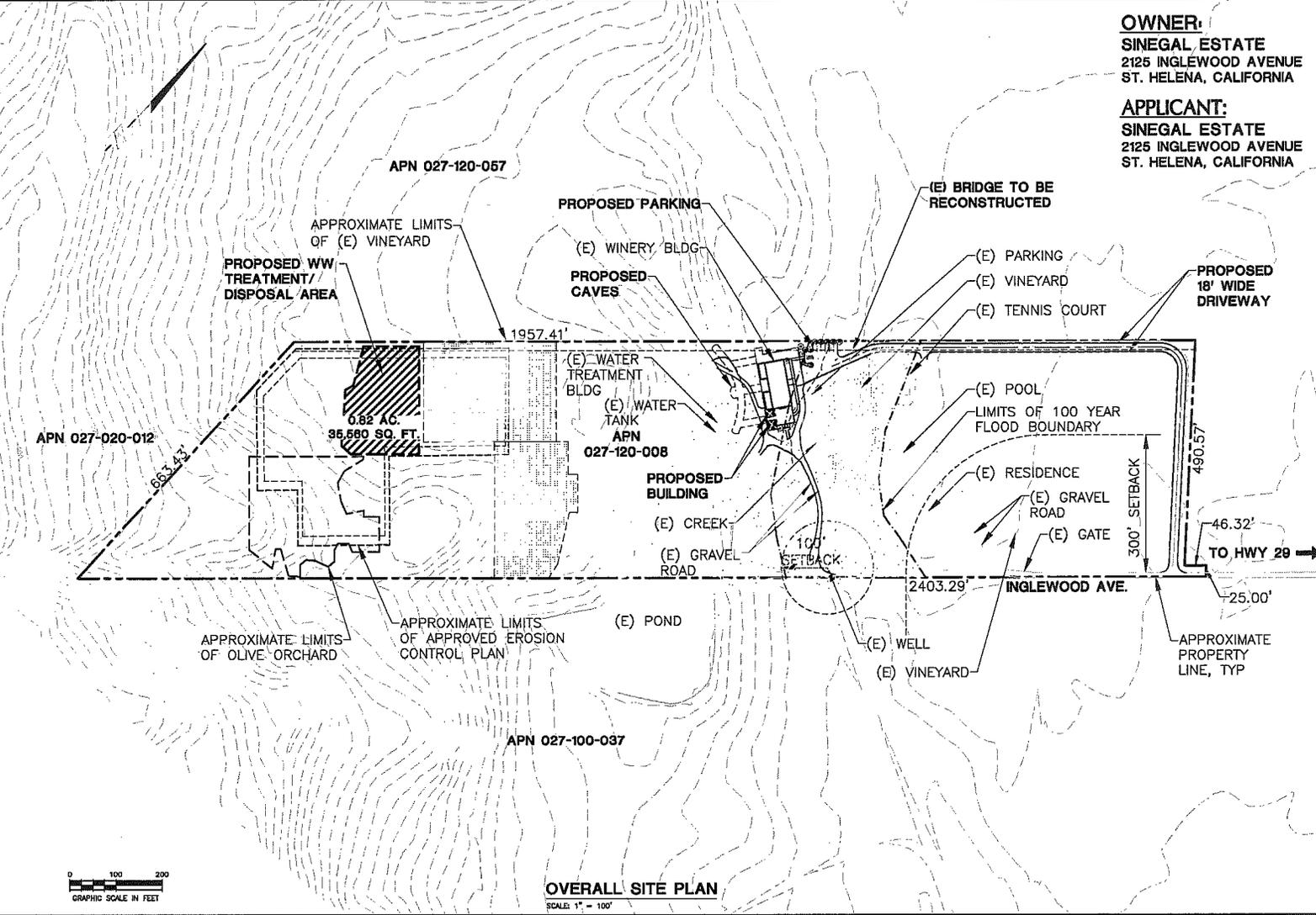
SUMMIT

SINEGAL ESTATE
2125 INGLEWOOD AVENUE
ST. HELENA, CALIFORNIA
APN 027-120-008
VICINITY MAP

PROJECT NO. 2013080
DATE 06-12-2013
SHT NO. 1 OF 1
BY TAF CHK MS



THIS DOCUMENT, AND THE IDEAS AND DESIGN INCORPORATED THEREIN, IS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF SUMMIT ENGINEERING, INC. AND IS NOT TO BE COPIED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF SUMMIT ENGINEERING, INC.



OVERALL SITE PLAN
SCALE: 1" = 100'



SINEGAL ESTATE
2125 INGLEWOOD AVENUE
ST. HELENA, CALIFORNIA
APN 027-120-008

USE PERMIT APPLICATION

OVERALL SITE PLAN

08-18-2013
ISSUE FOR REVIEW

DATE: 08-18-2013
JOB NO: 2013080
SCALE: AS SHOWN
DRAWN: TAF
CHECKED: MS
SHEET:

UP1

ENCLOSURE B

WATER AVAILABILITY ANALYSIS, PHASE I STUDY



COUNTY *of* NAPA

ROBERT J. PETERSON, P.E.
Director of Public Works
County Surveyor-County-Engineer
Road Commissioner

DONALD G. RIDENHOUR, P.E.
Assistant Director of Public Works

WATER AVAILABILITY ANALYSIS

PHASE I STUDY

Introduction: As an applicant for a permit with Napa County, It has been determined that Chapter 13.15 of the Napa County Code is applicable to approval of your permit. One step of the permit process is to adequately evaluate the amount of water your project will use and the potential impact your application might have on the static groundwater levels within your neighborhood. The public works department requires that a Phase 1 Water Availability Analysis (WAA) be included with your application. The purpose of this form is to assist you in the preparation of this analysis. You may present the analysis in an alternative form so long as it substantially includes the information required below. Please include any calculations you may have to support your estimates.

The reason for the WAA is for you, the applicant, to inform us, to the best of your ability, what changes in water use will occur on your property as a result of an approval of your permit application. By examining the attached guidelines and filling in the blanks, you will provide the information we require to evaluate potential impacts to static water levels of neighboring wells.

Step #1:

Provide a map and site plan of your parcel(s). The map should be an 8-1/2"x11" reproduction of a USGS quad sheet (1:24,000 scale) with your parcel outlined on the map. Include on the map the nearest neighboring well. The site plan should be an 8-1/2"x11" site plan of your parcel(s) with the locations of all structures, gardens, vineyards, etc in which well water will be used. If more than one water source is available, indicate the interconnecting piping from the subject well to the areas of use. Attach these two sheets to your application. If multiple parcels are involved, clearly show the parcels from which the fair share calculation will be based and properly identify the assessors parcel numbers for these parcels. Identify all existing or proposed wells.

Step #2: Determine total parcel acreage and water allotment factor. If your project spans multiple parcels, please fill a separate form for each parcel.

Determine the allowable water allotment for your parcels:

Parcel Location Factors

The allowable allotment of water is based on the location of your parcel. There are 3 different location classifications. Valley floor areas include all locations that are within the Napa Valley,

Pope Valley and Carneros Region, except for areas specified as groundwater deficient areas. Groundwater deficient areas are areas that have been determined by the public works department as having a history of problems with groundwater. All other areas are classified as Mountain Areas. Please circle your location classification below (Public Works can assist you in determining your classification if necessary):

Valley Floor 1.0 acre feet per acre per year
 Mountain Areas 0.5 acre feet per acre per year
 MST Groundwater Deficient Area 0.3 acre feet per acre per year

Assessors Parcel Number(s)	Parcel Size (A)	Parcel Location Factor (B)	Allowable Water Allotment (A) X (B)
027-1220-008	30.0 ac	1.0 ac-ft/ac-yr	30.0 ac-ft/yr

Step #3:

Using the guidelines in Attachment A, tabulate the existing and projected future water usage on the parcel(s) in acre-feet per year (af/yr). Transfer the information from the guidelines to the table below.

EXISTING USE:

Residential 0.75 af/yr
 Farm Labor Dwelling 0 af/yr
 Winery 0.3 af/yr
 Commercial 0 af/yr
 Vineyard* 8.4 af/yr
 Other Agriculture 4.8 af/yr
 Landscaping 0.3 af/yr
 Other Usage (List Separately):
 Secondary Residence 0.30 af/yr
 Vineyard Office 0 af/yr
 _____ af/yr

PROPOSED USE: **ASSUMED**

Residential 0.75 af/yr
 Farm Labor Dwelling 0 af/yr
 Winery 1.75 af/yr
 Commercial 0 af/yr
 Vineyard* 8.4 af/yr
 Other Agriculture 4.8 af/yr
 Landscaping 0.30 af/yr
 Other Usage (List Separately):
 Secondary Residence 0.30 af/yr
 Vineyard Office 0 af/yr
 _____ af/yr

TOTAL: 14.6 af/yr

TOTAL: 4,756,987 gallons**

TOTAL: 16.3 af/yr

TOTAL: 5,310,882 gallons**

*Water use for vineyards should be no lower than 0.2 AF—unless irrigation records are available that show otherwise.

**To determine your existing and proposed total water use in gallons, multiply the totals (in acre-feet) by 325,821 gal/AF.

Is the proposed use less than the existing usage () Yes (✓) No () Equal

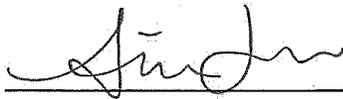
Step #4:

Provide any other information that may be significant to this analysis. For example, any calculations supporting your estimates, well test information including draw down over time, historical water data, visual observations of water levels, well drilling information, changes in neighboring land uses, the usage of other water sources such as city water or reservoirs, the timing of the development, etc. Use additional sheets if necessary.

The winery production level is proposed to increase from 13,200 gallons of wine per year to 60,000 gallons of wine per year. At the future production level, the winery is estimated to use 1.75 af/yr for process water and 0.457 af/yr for domestic uses. Landscaping water use is estimated to be about 0.30 af/yr at the future production level. There are approximately 12 acres of vineyards and 1.2 acres of olive orchard on the property. Please refer to the letter preceding this form for additional water use determination details.

Conclusion: Congratulations! Just sign the form and you are done! Public works staff will now compare your projected future water usage with a threshold of use as determined for your parcel(s) size, location, topography, rainfall, soil types, historical water data for your area, and other hydrogeologic information. They will use the above information to evaluate if your proposed project will have a detrimental effect on groundwater levels and/or neighboring well levels. Should that evaluation result in a determination that your project may adversely impact neighboring water levels, a phase two water analysis may be required. You will be advised of such a decision.

Signature: _____



Date: 09/10/13

Phone: (707)527-0775

Attachment A: Estimated Water Use Guidelines

Typical Water Use Guidelines:

Primary Residence	0.5 to 0.75 acre-feet per year (includes some landscaping)
Secondary Residence	0.20 to 0.30 acre-feet per year
Farm Labor Dwelling	0.06 to 0.10 acre-feet per person per year

Non-Residential Guidelines:

Agricultural:

Vineyards	
Irrigation only	0.2 to 0.5 acre-feet per acre per year
Heat Protection	0.25 acre feet per acre per year
Frost Protection	0.25 acre feet per acre per year
Farm Labor Dwelling	0.06 to 0.10 acre-feet per person per year
Irrigated Pasture	4.0 acre-feet per acre per year
Orchards	4.0 acre-feet per acre per year
Livestock (sheep or cows)	0.01 acre-feet per acre per year

Winery:

Process Water	2.15 acre-feet per 100,000 gal. of wine
Domestic and Landscaping	0.50 acre-feet per 100,000 gal. of wine

Industrial:

Food Processing	31.0 acre-feet per employee per year
Printing/Publishing	0.60 acre-feet per employee per year

Commercial:

Office Space	0.01 acre-feet per employee per year
Warehouse	0.05 acre-feet per employee per year