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Water Availability Analysis



WATER AVAILABILITY ANALYSIS

LAURA MICHAEL WINES
2250 LAKE COUNTY HWY
CALISTOGA, CA 94515

APN 017-230-009

PROPERTY OWNER:

Laura & Michael Swanton
2250 Lake County Hwy
Calistoga, CA 94515

Project# 4114031.0
May 19, 2016



I. Executive Summary

Laura Michael Wines proposes to modify an existing winery with 5,000 gallons wine production each year. Below is a summary of the existing and proposed water use. Detailed calculations can be found on the next page. Based on the location of the subject parcel in Napa Valley, a Groundwater recharge rate of 1.0 af/yr/acre for valley floor was adopted for the 3.23 acre parcel to give a total groundwater recharge of 3.23 af/yr for the project parcel. The increase in water usage for the proposed improvements comes from the one part-time employee and the new winery visitors. Visitors of the winery marketing events will be served by rented portable toilets that will be off-hauled at the end of the event.

Usage Type	Existing Usage [af/yr]	Proposed Usage [af/yr]
Residence	0.75	0.75
Vineyard Irrigation	0.75	0.75
Winery		
Process Water	0.08	0.08
Landscaping	0.03	0.03
Domestic Water	0.04	0.09
Totals (Acre-ft per Year)	1.64	1.69
Estimated Ground Water Recharge (Acre-ft per Year)	3.23	3.23

The proposed water use for Laura Michael Wines project will result in an increase of 0.05 af/yr. The resultant proposed water use of 1.69 af/yr is less than the estimated groundwater recharge rate of 3.23 af/yr.



II. Water Use Calculation

Existing Vineyard and Residence Water Demand

Residence – (0.75 af/yr/residence x	1	residence) =	0.75	af/yr
Vineyard – Irrigation only – (0.5 af/ac-yr x	1.5	acres vineyard) =	0.75	af/yr
Process Water – (5 gal water / 1 gallon wine x	5,000	gal wine/year) =	0.08	af/yr
Landscape – (0.5 af / 100,000 gallon wine x	5,000	gal wine/year) =	0.03	af/yr
		Total =	1.60	af/yr

Proposed Vineyard, Residence and Winery Water Demand

Residence – (0.75 af/yr/residence x	1	residence) =	0.75	af/yr
Vineyard – Irrigation only – (0.5 af/ac-yr x	1.5	acres vineyard) =	0.75	af/yr
Process Water – (5 gal water / 1 gallon wine x	5,000	gal wine/year) =	0.08	af/yr
Landscape – (0.5 af / 100,000 gallon wine x	5,000	gal wine/year) =	0.03	af/yr
		Total =	1.60	af/yr

Existing Winery Domestic Water Demand

FT Employees – (15 gal/person/day x 312 days/yr x	2	employees/day) =	0.03	af/yr
PT Employees – (15 gal/person/day x 208 days/yr x	1	employees/day) =	0.01	af/yr
		Total =	0.04	af/yr

Proposed Winery Domestic Water Demand

FT Employees – (15 gal/person/day x 312 days/yr x	2	employees/day) =	0.03	af/yr
PT Employees – (15 gal/person/day x 208 days/yr x	1	employees/day) =	0.01	af/yr
Weekday Visitors – (3 gal/person/day x 260 days/yr x	12	visitors/day) =	0.03	af/yr
Weekend Visitors – (3 gal/person/day x 104 days/yr x	12	visitors/day) =	0.01	af/yr
Marketing Events (Off-Site Catered) – (30 visitors @ 10 gpd x	6	days/yr) =	0.01	af/yr
Marketing Events (Off-Site Catered) – (75 visitors @ 10 gpd x	1	days/yr) =	0.00	af/yr
		Total =	0.09	af/yr

LAURA MICHAEL WINES TOTAL VINEYARD AREA

NAPA

CALIFORNIA

SCALE: 1" = 100'



TOTAL VINEYARD AREA = 1.5AC



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MAR 17, 2016 4114031.0 EXH_Vineyard Area



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Donald G. Ridenhour, P.E.
Director

WATER AVAILABILITY ANALYSIS - PHASE ONE 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 assessor's 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 underline 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

Assessor's Parcel Number(s)	Parcel Size (A)	Parcel Location Factor (B)	Allowable Water Allotment (A) X (B)
017-230-009	3.23	1.0	3.23