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Water Availability Analysis

WATER AVAILABILITY ANALYSIS

Revised June 23, 2016

Paul Hobbs – Nathan Coombs Winery

2184 Imola Avenue
Napa, CA
APN 046-351-001 & 016

INTRODUCTION & BACKGROUND INFORMATION

The purpose of this report is to supplement the Paul Hobbs – Nathan Coombs Winery Land Use Permit application. At ultimate, Phase II production, the Paul Hobbs – Nathan Coombs Winery located at 2184 Imola Avenue in Napa, CA is proposed produce 25,000 cases of wine and to include 7 full-time employees on an average day and 9 full time employees on a harvest day. They are also anticipating 15 visitors by appointment on an average day with an increase to 30 visitors by appointment on a peak day. Additionally requested are 4 marketing events annually (2 events of 50 guests and 2 events of 100 guests). Steve Martin Associates, Inc. (SMA) has prepared this Water Availability Analysis for the purpose of assessing the water availability for the proposed use.

Paul Hobbs owns two contiguous parcels (046-351-001 & 016). There are three existing wells on parcel 16, labeled 1, 2, and 3 on the Use Permit site plan. The subject property does fall within a Groundwater Deficient Area. A Groundwater Permit was applied for 2001, followed by a Ministerial Groundwater Permit in 2005. A final decision was never reached on the 2001 permit, and as such, the 2005 Groundwater Permit governs. The 2005 permit allowed for a fair share allotment of 23.39 acre-feet per year of groundwater extraction for the property. This WAA will show no net increase in water usage, and

Currently, well #1 and well #3 serve the irrigation needs of the vineyard. Well #2 is currently inactive and serves as a “back-up well”.

WATER QUALITY

The winery drinking water is proposed to be supplied by well #3 (Well Driller’s Report No. 291416), as it was constructed with a 50’ annular seal and a 2’ x 2’ concrete pad and is expected to comply with the surface water treatment rule. The well permit and well completion report are on file at Napa County. Additionally, raw water sample analytical results conformed to the most current NELAC standards and total coliform and fecal coliform were both absent from the sample.

EXISTING & PROPOSED ANNUAL WATER DEMAND (BOTH PARCELS)

Existing Domestic Water Use

1 Full time vineyard employees x 0 gal = 0 gpd x 365 days/year = 0 g/yr = **0 AF/year**
(no sink, toilet, or wastewater system facilities on site – only portable toilet)

Proposed Domestic Water Use (Maximum, Phase II)

AVERAGE DAY:

7 full-time employees x 15 gpcd	=	105
15 tasting visitors x 3 gpcd	=	<u>45</u>
Total	=	150 gpd

AVERAGE WEEKEND DAY:

7 full-time employees x 15 gpcd	=	105
30 tasting visitors x 3 gpcd	=	<u>90</u>
Total	=	195 gpd

AVERAGE WEEKEND DAY (W/ 50 PERSON EVENT):

7 full-time employees x 15 gpcd	=	105
0 tasting visitors x 3 gpcd	=	0
50 event guests w/out meals x 3 gpcd	=	<u>150</u>
Total	=	255 gpd

AVERAGE WEEKEND DAY (W/ 100 PERSON EVENT):

7 full-time employees x 15 gpcd	=	105
0 tasting visitors x 3 gpcd	=	0
100 event guests w/out meals x 3 gpcd	=	<u>300</u>
Total	=	405 gpd

HARVEST WEEK DAY:

9 full-time employees x 15 gpcd	=	135
15 tasting visitors x 3 gpcd	=	<u>45</u>
Total	=	180 gpd

HARVEST WEEKEND DAY:

9 full-time employees x 15 gpcd	=	135
30 tasting visitors x 3 gpcd	=	<u>90</u>
Total	=	225 gpd

HARVEST WEEKEND DAY (W/ 50 PERSON EVENT):

9 full-time employees x 15 gpcd	=	135
0 tasting visitors x 3 gpcd	=	0
50 event guests w/out meals x 3 gpcd	=	<u>150</u>
Total	=	285 gpd

HARVEST WEEKEND DAY (W/ 100 PERSON EVENT):

9 full-time employees x 15 gpcd	=	135
0 tasting visitors x 3 gpcd	=	0
100 event guests w/out meals x 3 gpcd	=	<u>300</u>
Total	=	435 gpd

Phase II MDD SW flow	=	<u>435 gpd SW</u>
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	Projected Use	# Days Per Year	TOTAL (gallons)	TOTAL (acre-feet)
Ave. Week Day (no events)	150 gpd	195	29,250	
Ave. Weekend Day (no events)	195 gpd	78	15,210	
Ave. Weekend Day (50 ppl event)	255 gpd	1	255	
Ave. Weekend Day (100 ppl event)	405 gpd	1	405	
Harvest Week Day (no events)	180 gpd	66	11,880	
Harvest Weekend (no events)	225 gpd	22	4,950	
Harvest Weekend Day (50 ppl event)	285 gpd	1	285	
Harvest Weekend Day (100 ppl event)	435 gpd	1	435	
ANNUAL TOTALS		365	62,670	0.19 AF

Existing Landscape Irrigation:

There is no existing landscaping on site and therefore existing landscape irrigation = **0 AF/year**

Proposed Landscape Irrigation:

The total projected area for landscape irrigation around the proposed winery buildings has been calculated at approximately 3,000 sf. Note that this area will most likely be irrigated by a combination of sprinklers and drip irrigation. However, sprinklers are utilized in the following calculation to be conservative.

$$\begin{aligned}
 &3,000 \text{ sf landscape area} \quad \times \quad 0.40 \text{ (rotary sprinklers)/100 sf} \quad = \quad 12 \text{ gpm} \\
 &12 \text{ gpm} \quad \times \quad 10 \text{ minutes per day} \quad = \quad 120 \text{ gpd} \\
 &120 \text{ gpd} \times 243 \text{ non-rain days} = 29,160 \text{ gallons} = \mathbf{0.09 \text{ AF/year}}
 \end{aligned}$$

Existing Vineyard Irrigation:

Historically, 66.8 acres of vineyard has been irrigated from the irrigation reservoir. Since no groundwater is used for frost protection, an average application rate of 0.349 has been used to determine historic/existing water use:

$$67 \text{ acres} \times 0.349 \text{ AF/acre/year} = \mathbf{23.39 \text{ AF/year}}$$

Proposed Vineyard Irrigation:

Well meter and irrigation pump meter readings for both 2014 and 2015 were analyzed to determine the actual water usage from groundwater. Due to some removal of vines for replanting, in 2014, 63 acres of vineyard utilized 19.2 AF/year of groundwater. That equates to an application rate of 0.305 AF/year. In 2015, 64 acres of vineyard utilized 21.07 AF/year. That equates to an application rate of 0.329 AF/year. The average of those two application rates is 0.317 AF/year (use 0.32 AF/year). After final replant, and removal of 0.5 acres of vineyard for the winery development, the total vineyard area to be irrigated will be (66.8 acres – 0.5 acres) 66.3 acres.

$$66.3 \text{ acres} \times 0.32 \text{ AF/acre/year} = \mathbf{21.22 \text{ AF/year}}$$

Existing Process Water (PW) Use:

There is no winery on site and therefore existing PW Use = **0 AF/year**

Process Water (PW) Use:

60,000 gallons wine (Phase II) x 2.15 AF/100,000 gal wine = 1.29 AF/year

Total Existing Ground Water Use:

0 AF Domestic + 0 AF Landscape + 23.39 AF Vineyard + 0 AF Winery PW = **23.39 AF**

Total Projected Ground Water Use:

0.19 AF Domestic + 0.09 AF Landscape + 21.22 AF Vineyard + 1.29 AF Winery PW = **22.79 AF**

APN's (both parcels)	Parcel Size (A)	Parcel Location Factor (B)	Allowable Water Allotment (A) X (B)
046-351-016 & 001	90.03 Acres	0.3 AF/Year (Groundwater Deficient Area)	27.0 AF/Year However, 2005 Ground Water Permit only allows for 23.39 AF/Year

EXISTING USE*:

Domestic 0 af/yr
 Landscape Irrigation 0 af/yr
 Vineyard Irrigation 23.39 af/yr
 Winery Process Wastewater 0 af/yr

PROPOSED USE (From Calculations above):

Domestic 0.19 af/yr
 Landscape Irrigation 0.09 af/yr
 Vineyard Irrigation 21.22 af/yr
 Winery Process Wastewater 1.29 af/yr

TOTAL: 23.39 af/yr

TOTAL: 22.79 af/yr

Is the proposed use less than the existing usage Yes No Equal

CONCLUSION

This Water Availability Analysis has shown that the projected water use is less than the existing water use for the proposed new winery. Based on the findings of this report, it is clear that the proposed expansion of visitors, employees, and events will not affect or deplete the groundwater supplies, nor interfere with groundwater recharge.

Signature: 
 Tamara Martin, REHS

Date: 6-23-16 Phone: 707-824-0266

**NAPA COUNTY DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
MINISTERIAL GROUNDWATER PERMIT
APPLICATION NO. E05-0477**

In the matter of:)
)
Application of Kreuse Creek Premium Vineyards for the) MINISTERIAL PERMIT
issuance of a Groundwater Permit to provide water to that) (NCC 13.15.030)
parcel located in the unincorporated area of the County of)
Napa at 2184 Imola Ave., Napa, CA (APN 46-351-16))

The Director of the Department of Environmental Management has approved Ministerial Groundwater Permit Application Number E05-0477 based upon the following findings and conditions:

FINDINGS:

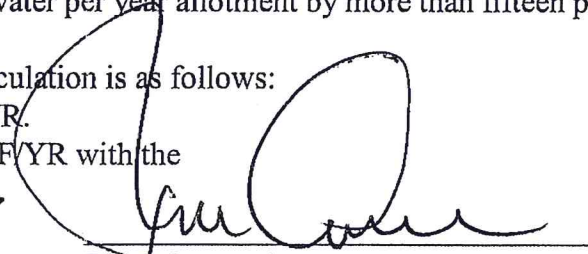
1. On June 17, 2005 Kreuse Creek Premium Vineyard, LP (“the Applicants”) completed an application to the Napa County Department of Environmental Management (“the Department”) for a ministerial groundwater permit for the parcel of land bearing Napa County Assessor’s Parcel Number 46-351-16 and located at 2184 Imola Avenue, Napa, California.
2. The groundwater permit (“permit”) is for the agricultural land re-development of 8.0 acres of vineyard on a 77.96 acre parcel.
3. In accordance with the Napa County Groundwater Conservation Ordinance, Napa County Code Chapter 13.15 (“Ordinance”), the Department has conducted a review of the Applicants’ application for a ministerial groundwater permit (the “record”).
4. The Director finds that the application is in compliance with the requirements of the Ordinance and hereby issues a ministerial permit with the following requirements:
 - a. The permittee shall install a meter on all wells or water supply and distribution systems serving the parcel to measure all groundwater used on the parcel. The configuration of the installation shall conform to a drawing prepared by the permittee and shall conform to the technical standards set forth by the Director of Public Works.
 - b. On or near the first day of each month the permittee shall read the water meter and provide this data to the Director of Public Works during the first week of April and October of each year. The permittee shall also grant to the Director of Public Works, the right to access and verify the operation and readings of the meters and well levels at any reasonable time during regular working hours.
 - c. The permittee shall be limited to an average of 0.30 acre-feet of water per acre per year. This limitation shall be calculated as the average water used over a three-year period with no yearly use exceeding the acre foot of water per year allotment by more than fifteen percent.

For APN 46-351-16, the fair share calculation is as follows:

$77.96 \text{ AC} \times 0.3 \text{ AF/AC} = 23.39 \text{ AF/YR.}$

The peak shall be no more than 26.9AF/YR with the

Date: *June 30, 2005*



Trent Cave, Director
Department of Environmental Management

Cc: Annamaria Martinez, Public Works