

12501.0 Larkmead Barrel Building
Water Use Clarification
August 11, 2014
Revised:



Christine Secheli, REHS
Napa County Department of Environmental Management
1195 3rd St., Room 101
Napa, Ca 94555

Project: Use Permit Modification for Larkmead Vineyards
1100 Larkmead Lane
Calistoga, CA
AP 020-240-001

Copies	Document Date	Description
1	5/9/2014	Phase One Water Availability Analysis
1	5/9/2014	Wastewater Feasibility Study

Christine,

This letter is provided to address the Phase One Water Availability Analysis and Wastewater Feasibility Study requirements of the Larkmead Vineyards Hospitality and Production Increase Use Permit.

Project Proposal

Larkmead Vineyards has a Use Permit to produce 36,000 gallons of wine per year. The existing site consists of a fermentation building, a barrel hall, two hospitality buildings, an outdoor BBQ, and associated site improvements. Larkmead would like to increase their production to 75,000 gallons of wine per year at the existing site to accommodate the ultimate production from the vineyards already under their ownership. As grape contracts with other wineries expire, Larkmead would like to process them at their winery. At the same time, Larkmead would also like to increase the site tasting room and site event uses. No additional employees will be required.

Phase One Water Availability Analysis

The Phase One Analysis was calculated using the Napa County Water Availability Analysis Attachment A: Estimated Water Use Guidelines (see attached Phase One Water Availability Analysis). Using these guidelines the estimated proposed Vineyard use is 6.5 ac-ft/yr (5,803 gpd) and the proposed Winery use is 1.9875 ac-ft/yr (1,774 gpd). The

12501.0 Larkmead Barrel Building
Water Use Clarification
August 11, 2014
Revised:



estimated average total parcel use using these calculation methods is 8.5375 ac-ft/yr (7,577 gpd).

Waste Water Feasibility Study

The Waste Water Feasibility Study was calculated using estimated peak flows of Winery Process Waste, employees, tasting room visitors and special events (see attached Wastewater Feasibility Study). Winery process waste flow estimates use the Napa County Guidelines for sizing winery waste systems while employee and visitor use estimates are from the Napa County ASTS Guidelines.

The total peak flow estimated in the Waste Water Feasibility Study is 2,845 gpd (3.19 ac-ft/yr.), which includes an estimated peak winery process waste of 1,875 gpd, 195 gpd for employees, 450 gpd peak visitor usage, and 325 gpd special events.

Combining the more conservative winery use quantities from the Waste Water Feasibility Study and the Vineyard Use quantities from the Phase One Water Availability Analysis, it is estimated that the peak proposed parcel use is 9.69 ac-ft/yr.

Conclusions

The proposed increases in Process Waste and Sanitary Sewage flows will result in a net parcel water use of 9.69 ac-ft/yr, which is significantly less than the 17.85 ac-ft/yr allowable allotment.

We trust that this letter sufficiently responds to the items of incompleteness. If you require clarification or have any questions, please feel free to contact us.

Sincerely,

Ben Monroe, P.E.
ALWAYS ENGINEERING, INC.
Project Manager

cc: Cam Baker (Larkmead Vineyards)
Beth Painter (Balanced Planning)

Phase One Water Availability Analysis
May 9, 2014
Revised:
Larkmead Vineyards



May 9, 2014

David Morrison, Deputy Director
Napa County Conservation, Development,
& Planning Department
1195 3rd Street, Room 210
Napa, Ca 94559

Project: Larkmead Vineyards
1100 Larkmead Lane
Calistoga, Ca
APN: 020-240-001
Use Permit Modification
Phase 1 Water Availability Analysis

Dear David,

As required by the Napa County Department of Public Works, this letter provides the Phase 1 Water Availability Analysis as a supplement to the Larkmead Vineyards Use Permit modification request. The following information is provided to meet this requirement. Larkmead Vineyards is proposing to increase annual wine production capacity to 75,000 gallons, increase the number of parking spaces and associated septic system improvements.

SITE PLAN

A Use Permit Site Plan has been provided and is attached. This site plan provides the existing and proposed site conditions. The site consists of an existing production and hospitality buildings, barrel hall, parking and landscape areas, and existing infrastructure. Also provided on the site plan is a portion of the USGS quad map indicating location of the project parcel.

PROJECT DESCRIPTION

Larkmead Vineyards, located at 1100 Larkmead Lane in Calistoga, Napa County, California (APN 020-240-001) is applying for a use permit is proposing to increase annual wine production capacity to 75,000 gallons and increase onsite visitation. With the project it is not proposed to increase the number of employees.

ALLOWABLE WATER ALLOTMENT

Parcel acreage	=	17.85 acres
Parcel Location Factor	=	1.0 ac-ft/ac-yr (Mountain Area)
Allowable Water Allotment	=	17.85 ac-ft/yr

Based on Step #2 of the Water Availability Study, the allowable water allotment for the site is 17.85 ac-ft/yr which represents no increase from the existing property.

WATER CONSUMPTION

Presented below are the calculations used to complete the Phase One Study with the assumed Napa County values.

Existing Vineyard Use

13.2 acres x 0.5 ac-ft/ac-yr (irrigation)	=	6.6 ac-ft/yr
Total Existing Vineyard Use	=	6.6 ac-ft/yr

Proposed Vineyard Use

13.1 acres x 0.5 ac-ft/ac-yr (irrigation)	=	6.55 ac-ft/yr
Total Proposed Vineyard Use	=	6.55 ac-ft/yr

The total amount of proposed vineyard water use is estimated to be 6.55 ac-ft/yr using the Napa County Public Works values. Frost and heat protection do not occur onsite.

Existing and Proposed Winery Process Use

$$75,000 \text{ gallons wine/yr} \times 2.15 \text{ ac-ft}/100,000 \text{ gallons wine} = 1.6125 \text{ ac-ft/yr}$$

Existing and Proposed Winery Domestic and Landscape Use

$$75,000 \text{ gallons wine/yr} \times 0.5 \text{ ac-ft}/100,000 \text{ gallons wine} = 0.375 \text{ ac-ft/yr}$$

Total Winery Use

Process Use	=	1.6125 ac-ft/yr
Domestic and Landscape Use	=	0.375 ac-ft/yr
Total Winery Use	=	1.9875 ac-ft/yr

Phase One Water Availability Analysis
May 9, 2014
Revised:
Larkmead Vineyards



The total winery water use is estimated to be 1.9875 ac-ft/yr using the Napa County Public Works assumed values.

Total Water Use

The total estimated water consumption from the project is estimated to be 8.5375 ac-ft/yr which is equivalent to 2,781,957 gallons per year.

EXISTING WATER SYSTEM

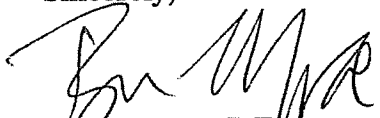
The existing potable water system consists of the potable onsite well, water storage tanks, pressure tanks, and water treatment. There are other onsite wells which are used for vineyard irrigation only.

SUMMARY AND CONCLUSIONS

As presented above, the overall proposed water use for the Larkmead Vineyards winery is expected to be 8.5375 ac-ft/yr. This amount is below the parcel's allowable water allotment of 17.85 ac-ft/yr. Therefore, the Phase 1 study should be sufficient to satisfy the requirements of the Public Works Department.

If there are questions regarding that presented, please feel free to contact me.

Sincerely,



Ben Monroe, P.E.
Always Engineering, Inc.



cc: Dan Petroski (Larkmead Vineyards)
Beth Painter (Balanced Planning)



A Tradition of Stewardship
A Commitment to Service

Department of Public Works

1195 Third Street, Suite 201
Napa, CA 94559-3092
www.co.napa.ca.us/publicworks

Main: (707) 253-4351
Fax: (707) 253-4627

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)
020-240-001	17.85	1.0	17.85

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:		PROPOSED USE:	
Residential	<u>0</u> af/yr	Residential	<u>0</u> af/yr
Farm Labor Dwelling	<u>0</u> af/yr	Farm Labor Dwelling	<u>0</u> af/yr
Winery	<u>0.954</u> af/yr	Winery	<u>1.9875</u> af/yr
Commercial	<u>0</u> af/yr	Commercial	<u>0</u> f/yr
Vineyard*	<u>6.6</u> af/yr	Vineyard*	<u>6.55</u> af/yr
Other Agriculture	<u>0</u> af/yr	Other Agriculture	<u>0</u> af/yr
Landscaping	<u>0</u> af/yr	Landscaping	<u>0</u> af/yr
Other Usage (List Separately):		Other Usage (List Separately):	
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr

TOTAL: 7.554 af/yr
2,461,482 gallons**

TOTAL: 8.5375 af/yr TOTAL:
TOTAL: 2,781,957 gallons**

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 if other water sources such as city water or reservoirs, the timing of the development, etc. Use additional sheets if necessary.

See attached report by Always Engineering, Inc.

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: [Handwritten Signature] Date: 5/8/14 Phone: 707-318-7099

38°35.000' N

38°35.000' N

38°34.000' N

38°34.000' N

38°33.000' N

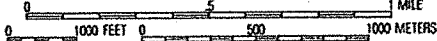
38°33.000' N

38°32.000' N

38°32.000' N

PROJECT SITE
1100 LARKMEAD LANE,
CALISTOGA, CA

NEAREST
NEIGHBORING
WELL



12501.0 Larkmead Production
Increase
Water System Feasibility
May 9, 2014
Revised:



May 9, 2014

Christine Secheli
Assistant Director
Napa County
Department of Environmental Management
1195 3rd Street, Room 101
Napa, Ca 94559

Project: Larkmead Vineyards
Use Permit Modification
Water System Feasibility
APN 020-240-001

Dear Ms. Secheli,

As required by the Napa County Department of Conservation Planning, and Development, this letter provides information regarding Public Water System Feasibility as a supplement to the Larkmead Vineyards Use Permit request. The following information is provided to meet this requirement.

Larkmead Vineyards, located at 1100 Larkmead Lane in Calistoga, Napa County, California (APN 020-240-001) is applying for a use permit to expand the existing winery by increasing hospitality as well as increasing annual production to 75,000 gallons and associated site upgrades.

The site has an existing Public Water System Permit (CA2800044) which is operated by the owner. The existing system has already been expanded to meet the needed potable water supply connection points within the recently built hospitality building and barrel hall. The proposed operation of the water system will remain as a Transient Non-Community System, as the total population served for over 6 months is 16 people. Peak (weekend) tasting visitation is proposed to be 150 visitors per day with an average of 100 visitors during the week.

The increase in estimated water use is as follows:

Winery Process Water

Peak = 1,875 gpd
Annual = 1.6125 Ac-ft (525,435 gal)

Sanitary Sewage

Peak = 970 gpd
Average = 335 gpd
Annual = 0.375 Ac-ft (122,194 gal)

12501.0 Larkmead Production
Increase
Water System Feasibility
May 9, 2014
Revised:



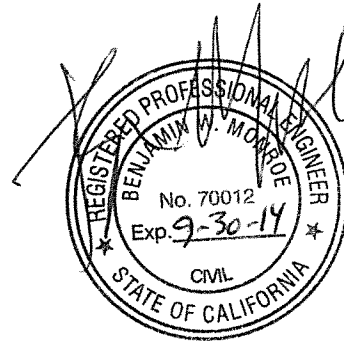
Although provided by the same well, process water is not treated and therefore is not part of the potable treatment supply system. The treatment system is sized for 1 gpm and can produce 1,440 gallons of potable water per day. Therefore, the treatment system will have to operate for 16.2 hours to provide sufficient volume for the peak potable demand. However, there is an existing 1,000 gallon potable water storage tank for storage of treated water. This tank is sufficient to provide a full peak day's capacity. Because wine events will not occur on consecutive days, the storage tank will be able to refill the following day. As site use increases, Larkmead Vineyards may decide to double the treatment capacity of the existing arsenic removal system. The existing site well flow rate is 120 gallons per minute, which is capable producing the peak daily demand of 2,845 gpd in a period of 23.7 minutes.

The proposed increase in use of the site is not expected to affect the ability for the existing public water system to meet the demands of the site.

Please feel free to contact me with questions or comments.

Sincerely,

Ben Monroe, P.E.
Always Engineering, Inc.



cc: Dan Petroski (Larkmead Vineyards)
Beth Painter (Balanced Planning)