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Water Availability Analysis

Ballentine Vineyards Use Permit Major Modification P18-00382 &
Variance P19-00006
Planning Commission Hearing September 2, 2020

Water Availability Analysis

Ballentine Vineyards

2820 St. Helena Hwy North, St. Helena, CA 94574

APN: 022-200-003

October 3, 2018

PREPARED BY:

Madrone Engineering

1485 Main Street, Suite 302

St. Helena, CA 94574

madrone engineering

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I. Introduction & General Overview

A. Introduction

Madrone Engineering has prepared this report to assist the Ballentine Vineyards project with compliance with Napa County Water Availability Analysis requirements. As of May 13, 2015, a water availability analysis is required for any discretionary project that may utilize groundwater or will increase the intensity of groundwater use of any parcel through an existing, improved, or new water supply system (Napa County Code 13.15.010).

B. Project Description

Ballentine Vineyards is requesting a Use Permit Modification to increase wine production from 50,000 gallons to 125,000 gallons per year on an 21.1-acre parcel located at 2820 St. Helena Highway North, St. Helena. The property will be improved as follows: the existing tasting room will be renovated and expanded with addition of a small outdoor tasting area, the existing parking area will be reconstructed and improved, new fire hydrants will be added, and a new cover will be constructed over the existing crush pad.

Based on the proposed marketing plan for the winery, the maximum number of winery staff on-site on any given day is estimated to be fifteen (15) full-time employees. In addition to the employees, the proposed marketing plan allows for up to ninety-five (95) visitors per day in addition to winery special events. Other water use on the parcel includes vineyard irrigation (a portion of the vineyard is irrigated with recycled process wastewater) and an existing 4-bedroom residence.

There is one well available for project use, it is on the parcel, and it is shown on the well exhibit (Appendix B). The winery parcel is zoned AP (Agricultural Preserve), and is on the Napa Valley Floor. Based on Table 1, below, the project will be subject to Tier 1 analysis requirements.

Table 1: Project Screening Criteria Applicability

Tier	Criteria Type	Napa Valley Floor	MST	All Other Areas
1	Water Use	Yes	Yes	Yes
2	Well and Spring Interference	No[1]	No[1]	Yes
3	Groundwater/Surface Water Interaction	No[1]	No[1]	No[1]

1. Further analysis may be required under CEQA if substantial evidence, in the record, indicates a potentially significant impact may occur from the project.

II. Tier 1 Analysis

Tier 1 of the WAA requests the applicant to estimate the proposed water usage for the project, and then compare the estimated parcel usage for the property to the applicable water use criteria. As noted in Table 2A of the WAA guidelines (see below), the water use criteria is subject to the parcel location.

Table 2A: Water Use Criteria

Project parcel location	Water Use Criteria (acre-feet per acre per year)
Napa Valley Floor	1.0
MST Groundwater Deficient Area	0.3 or no net increase, whichever is less [1]
All Other Areas	Parcel Specific [2]

1. Does not apply to the Ministerial Exemption as outlined in the Groundwater Conservation Ordinance
2. Water use criteria for project shall be considered in relation to the average annual recharge available to project property, as calculated by the applicant or their consultant.

A. Water Use Guidelines

Appendix B of the WAA guidelines includes recommendations for determining the estimated water use for specified land uses. A summary of these guidelines, including the values applied in this report, are identified in the table below:

Table 3: Water Use Guidelines per WAA Appendix B

Use	Recommended Water Use Values	Applied Water Use Values	Unit
Residence	0.5 to 0.75	0.75	AF per Year
Winery			
Process Water	0.0215	0.0215	AF per 1,000 gal Wine Produced per Year
Domestic Water	0.005	0.005	AF per 1,000 gal Wine Produced per Year
Employees	15	15	Gallons Per Shift
Tasting Room Visitation	3	3	Gallons Per Visitor
Events and Marketing	15	15	Gallons Per Visitor
Vineyards			
Irrigation Only	0.2 to 0.5	0.35	AF per Acre Planted per Year
Heat Protection	0.25	not used	AF per Acre Planted per Year
Frost Protection	0.25	0.25	AF per Acre Planted per Year
Landscaping	-	4.0	AF per Acre per Year

B. Existing Water Usage

The current water uses on the Ballentine Vineyards property include the following:

Table 4: Existing Property Uses

Use	Value	Unit
Residence(s)	1	Main Residence
Winery		
Wine Produced	50	Thousand Gallons per Year
Employees (Full + Part Time)	5 FT	Employee Shifts per Day
Employees (Full + Part Time)	1300	Employee Shifts per Year*
Visitors	10	Visitors per Week
Visitors	510	Visitors per Year**
Event Visitors per Year	120	Visitors per Year
Landscaping	0.05	Acres
Vineyards		
Acres Planted	15	Acres (irrigated by well)
Heat Protection	N/A	
Frost Protection	15	Acres (from pond)

* 5-day work weeks for Full-Time, 45 total days for Part-Time (harvest)

** Conservatively estimated at 51 weeks visitation per year

Based on Table 4, the existing water usage of the parcel is estimated as follows:

Table 5: Existing Water Usage

Residence	0.75	AF per Year
Winery		
Process Water	1.075	AF per Year
Domestic Water + Landscaping	0.25	AF per Year
Employees	0.060	AF per Year
Visitors	0.005	AF per Year
Event Visitors per Year	0.001	AF per Year
Landscaping	0.200	AF per Year
Vineyards		
Irrigation Only	5.250	AF per Year
Heat Protection	0.000	AF per Year
Frost Protection	3.750	AF per Year
Total Water Usage	**11.341**	**AF per Year**

C. Proposed Water Usage

The proposed water uses under this Use Permit Modification for the Ballentine Vineyards property include the following:

Table 6: Proposed Property Uses

Use	Value	Unit
Residence	0.75	Main Residence
Winery		
Wine Produced	125	Thousand Gallons per Year
Employees (Full + Part Time)	15 FT	Employee Shifts per Day
Employees (Full + Part Time)	3900	Employee Shifts per Year*
Visitors	63	Visitors Per Day (avg)
Visitors	22995	Visitors Per Year**
Event Visitors	3120	Visitors Per Year
Landscaping	0.075	Acres
Vineyards		
Acres Planted	15	Acres (irrigated by well)
Heat Protection	N/A	
Frost Protection	15	Acres (from pond)

* 5-day work weeks for Full-Time, 45 total days for Part-Time (harvest)

** Estimated at 40/day Mon-Thu, 95/day Fri-Sun

The purpose of the Use Permit Modification is to increase wine production from 50,000 gallons to 125,000 gallons per year. No additional vineyard will be planted.

Based on Table 6, the proposed water usage of the parcel is estimated as follows:

Table 7: Proposed Water Usage

Residence	0.75	AF per Year
Winery		
Process Water	2.688	AF per Year
Domestic Water + Landscaping	0.625	AF per Year
Employees	0.180	AF per Year
Visitors	0.212	AF per Year
Event Visitors per Year	0.029	AF per Year
Landscaping	0.300	AF per Year
Vineyards		
Irrigation Only	5.250	AF per Year
Heat Protection	0.000	AF per Year
Frost Protection	3.750	AF per Year
Total Water Usage	**13.784**	**AF per Year**

See Table 8, below, for a summary of the change in water use from the existing condition to the proposed Use Permit condition.

Table 8: Proposed Increase in Water Usage

Existing Water Usage	11.341	AF per Year
Proposed Water Usage	13.784	AF per Year
Water Usage Increase	**2.443**	**AF per Year**

The increase in production and visitation has the potential to increase the water usage by ~2.443 acre-feet per year relative to existing usage. However, with a parcel size of 21.1 acres, and a water use criterion of 1.0 acre-feet per year per acre, the total allowable water usage could be as high as 21.1 acre-feet per year. The total proposed usage of 13.784 acre-feet per year is significantly less than allowable water usage for the parcel.

D. Water Supply Capacity

Currently, there is only one well (Well #01) on the parcel. Historically, the yield on the well has exceeded 200 gpm. As part of this project, a new well (Well #02) with a 50' sanitary seal will be drilled and connected to all winery uses. Well #02 is expected to have a similar yield to Well #01.

The proposed winery water use of 13.784 acre-feet per year equates to an average of ~12,300 gallons per day. At a constant rate of 9 gpm (only ~5% of expected Well #02 capacity),

approximately 12,960 gallons of water would be available each day. Therefore, project water use is expected to be well within the physical capabilities of the proposed Well #02.

III. Tier 2 Analysis

As required by the WAA guidelines, the project must be evaluated for the potential for well and/or spring interference, if the project is outside the Napa Valley Floor. However, both the existing well (#01) and the proposed project well (#02) will be on the Napa Valley Floor, therefore no evaluation of well/spring interference is proposed.

IV. Conclusion

This report demonstrates that the proposed project is in compliance with current County Code related to groundwater usage per the Napa County Water Availability Analysis guidelines.

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APPENDICES

APPENDIX A: VICINITY MAP
APPENDIX B: WELL EXHIBIT

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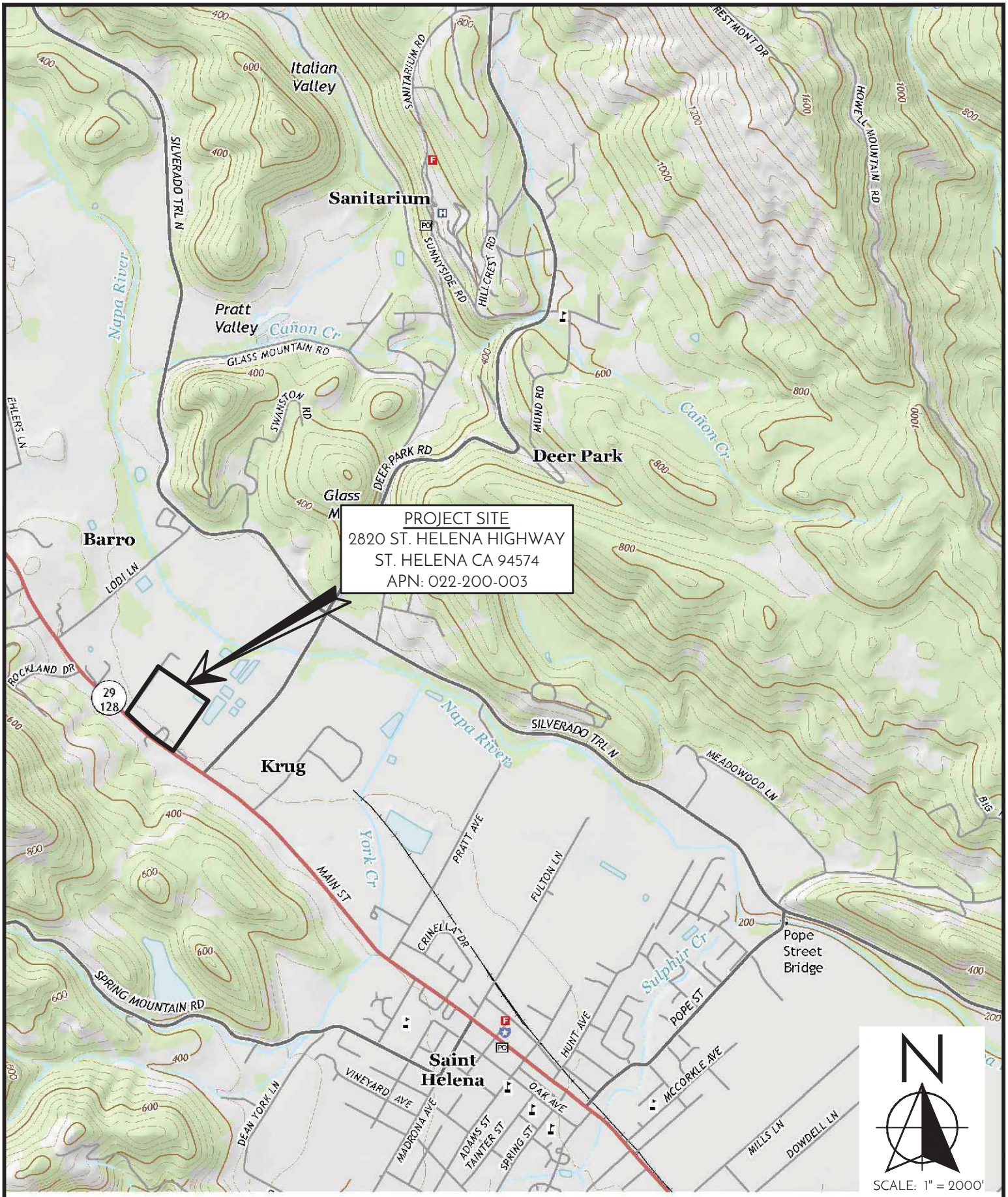
APPENDIX A
VICINITY MAP



BALLENTINE VINEYARDS
VICINITY MAP

madrone engineering
1485 MAIN ST., SUITE 302
ST. HELENA, CA 94574
(707) 302-6280

DATE:	08/13/2018
SCALE:	1"=2000'
JOB #	17.047
APN:	022-200-003

SHEET 1 OF 3

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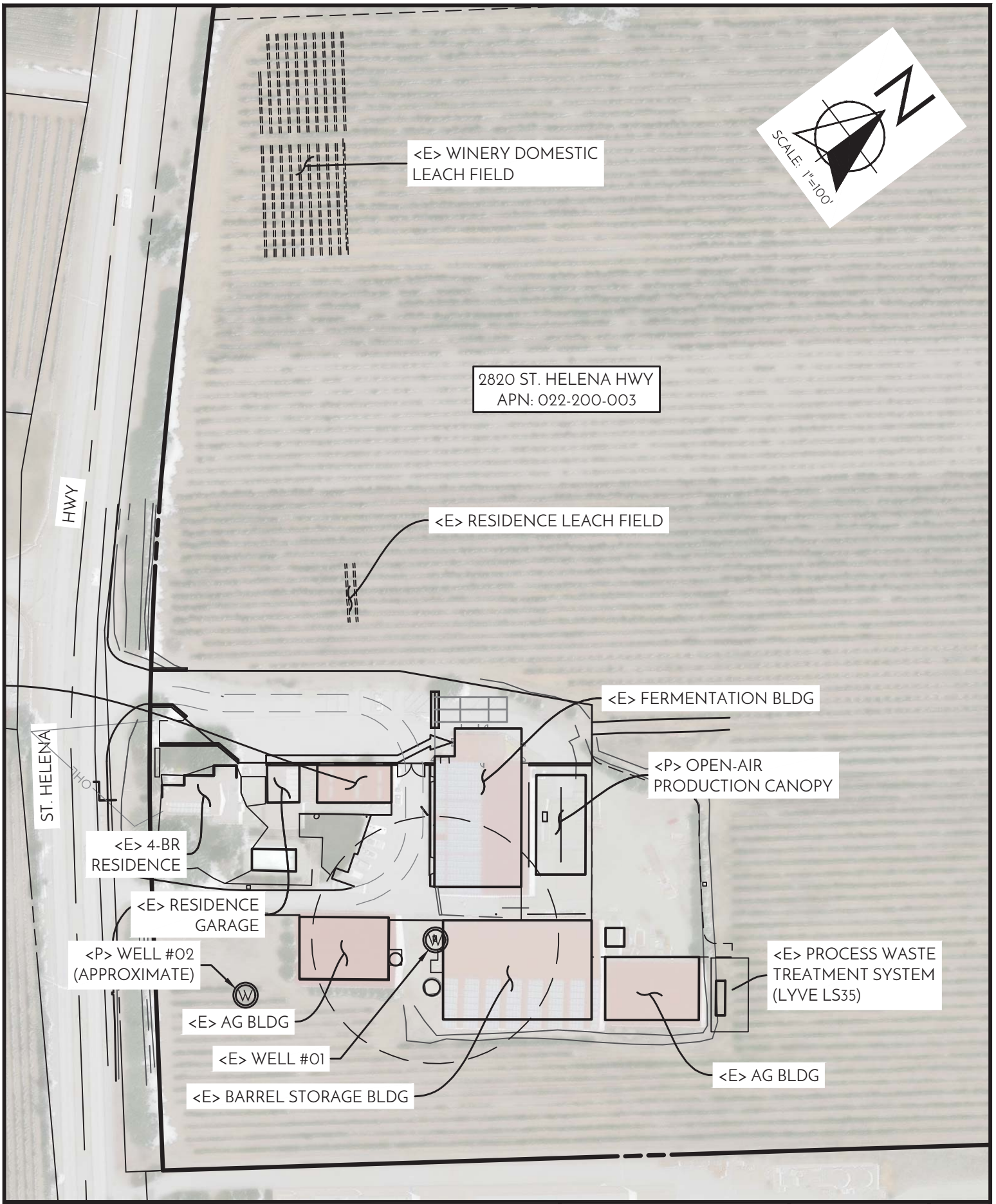
APPENDIX B
WELL EXHIBIT



BALLENTINE VINEYARDS
SITE MAP (WELLS)

madrone engineering
1485 MAIN ST., SUITE 302
ST. HELENA, CA 94574
(707) 302-6280

DATE:	10/03/18
SCALE:	1"=100'
JOB #	17.047
APN:	022-200-003

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