LACO

April 29, 2015

8091.01

Napa County Planning, Building & Environmental Services
1195 3rd Street
Napa, California 94559

Attention: Mr. Jason R. Hade, AICP
Project Planner

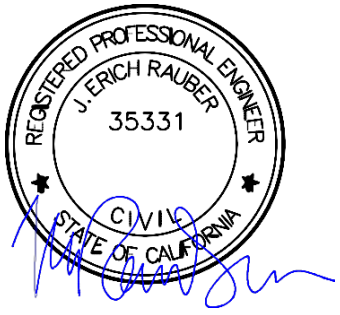
Subject: Updated Water Availability Analysis
Proposed Tench Winery
7631 Silverado Trail, Napa, California
APN 031-070-006
Use Permit No. P15-00001

Dear Mr. Hade:

This letter transmits an updated Water Availability Analysis (WAA) for inclusion in the Use Permit Application for the subject project. LACO previously performed a WAA for the project, and presented the results in a report dated December 3, 2014, which was included in our January 2, 2015 Use Permit Application for the project. LACO's December 3rd WAA report was based on guidance presented in a document entitled, "Use Permit Application", prepared by the Napa County Conservation, Development, and Planning Department. In a January 30, 2015 letter, the Napa County Department of Planning, Building & Environmental Services (PBES) summarized the results of its initial review of the Use Permit Application that included the December 3rd WAA report. The January 30th letter noted that County staff is in the process of updating its WAA guidance. They referred us to a document entitled, "Working Draft of the Water Availability Analysis", dated December 18, 2014, requesting we revise our December 3rd analysis if needed. Accordingly, the following updated WAA is based on the latest draft (March 2, 2015) of the "Working Draft of the Water Availability Analysis" (the March 2nd Working Draft) as requested by PBES.

Please contact us at (707) 525-1222 if you have any questions.

Sincerely,
LACO Associates



J. Erich Rauber, P.E., G.E.
Senior Engineer

JER/NKT:jrb

P:\8000\8091 Tench Winery\8091.01 Use Permit Application\08 Geology\Water Avilability Analysis\Updated WAA - 033015.docx

21 W. 4th Street, Eureka, California 95501 707 443-5054 Fax 707 443-0553
311 S. Main Street, Ukiah, California 95482 707 462-0222 Fax 707 462-0223
3450 Regional Parkway, Suite B2, Santa Rosa, California 95403 707 525-1222

Toll Free 800 515-5054 www.lacoassociates.com

TABLE OF CONTENTS

1.0 INTRODUCTION

This Water Availability Analysis (WAA) has been prepared by LACO Associates, Inc. (LACO) for the proposed Tench Winery in Napa County, California. As shown on the Site Vicinity Map, Figure 1, the approximate 60-acre project site is located at 7631 Silverado Trail, approximately 800 feet south of the Silverado Trail/Oakville Cross Road intersection. LACO previously performed a WAA for the project, and presented the results in a letter report dated December 3, 2014, which was included in our January 2, 2015 Use Permit Application. This updated WAA addresses the review comments on LACO's previous submittal and is based on the latest working draft (March 2, 2015) of Napa County's Water Availability Analysis Guidance Document (the March 2nd Working Draft)

2.0 WATER AVAILABILITY ANALYSIS

This section presents the WAA for the planned Tench Winery. The information provided is based on the procedures presented in the March 2nd Working Draft.

2.1 Contact Information

Property Owner:
Tench Family Vineyards LLC
7631 Silverado Trail
Oakville, CA 94558
Attention: Mr. Remmelt Reigersman
rem@tenchvineyards.com
(646) 660-4200

Person Preparing Application:
J. Erich Rauber, P.E., G.E.
LACO Associates, Inc.
3450 Regional Parkway, Suite B-2
Santa Rosa, CA 95403
raubere@lacoassociates.com
(707) 525-1222

2.2 Site Map

A Site Map showing the project parcel and adjoining parcels, Assessor's Parcel Number (APN), parcel size in acres, location of existing or proposed project well(s) and other water sources, general layout of structures on the subject parcel, location of agricultural development and general location within the county is presented as Figure 2.

2.3 Project Narrative

The proposed project consists of constructing a new winery facility on an approximate 60.86-acre parcel (APN 031-070-006-000). Up to 42,840 gallons of wine are anticipated to be produced annually from the facility. The parcel is currently occupied by a single-family residence constructed near the base of a hill bisected by the northerly property line. The residence and undeveloped hillside are surrounded by approximately 42 acres of vineyards which have been in production since the early 1970s. An onsite water

well with a reported yield exceeding 600 gallons per minute (gpm) provides water for vineyard irrigation and will serve as the water source for the new winery. A second, shallow, lower-yield onsite well is presently, and will continue to be, used to provide domestic water and landscape water to the onsite residence.

The projected water consumption and usage figures are summarized in the following sections. The analysis shows a total projected water usage of approximately 32.34 ac-ft/yr (this is inclusive of winery process/domestic water, landscape, vineyard irrigation, and frost protection water demands). If vineyard water use is excluded, the projected water demand for the winery is 1.13 ac-ft/yr.

2.4 Existing Facilities Water Demand

The water demand for existing onsite facilities is based on the sum of vineyard irrigation and existing residential water use.

Vineyard Water Demand = 31.59 ac-ft/yr
Groundwater that is used for vineyard irrigation will be supplied by the irrigation well located approximately 550 feet south of the planned winery complex (Figure 2). The estimated annual water demand is based on water use over the preceding 4 ½ years, including irrigation, frost protection, and heat water use. A driller's log for the irrigation well is available from Napa County. Water use calculations are presented in Appendix 1.

Existing Single Family Residence Water Demand – 0.75 ac-ft/yr
From the *Guidelines for Estimating Residential Water Usage* (March 3rd Working Draft, Appendix B).

2.5 Winery Proposed Water Demand

The projected water demand for the proposed winery is 1.13 ac-ft/yr, the components of which are process water and domestic and landscape water.

Process Water = 0.92 ac-ft/yr
Based on 2.15 acre-ft of water/100,000 gallons of wine produced *(March 3rd Working Draft, Appendix B)* at an annual maximum production capacity of 42,840 gallons of wine

Domestic and Landscape Water = 0.21 ac-ft/yr
Based on 0.5 ac-ft/yr per 100,000 gallons of wine produced *(March 3rd Working Draft, Appendix B)* times 42,840 gallons of wine to be produced annually.

2.6 Peak Usage

Vineyard - Irrigation water used to maintain the vineyard will typically begin in June when onsite soils begin to dry and continue until October, with the peak irrigation period between July and August.

Winery - Peak demand for process water in the winery will occur during the harvest, typically in September and October. These demands will be on the order of 3 to 4 times the yearly average process water demand. The demand for water for domestic uses in the winery will be relatively steady throughout the year, with a modest increase expected during the summer and harvest months due to a seasonal increase in the number of employees.

2.7 Water Source and Delivery

Vineyard water, other than that supplied by rain, will be supplied by the existing onsite irrigation well shown on Figure 2. Water for the winery processes and domestic uses will also be supplied by the existing irrigation well.

3.0 SUMMARY

The proposed annual water demand for the planned Tench Winery is projected to be 1.13 ac-ft/year, representing an increase of approximately 3.5 percent over current water use. Including vineyard water use, the total projected water use is 33.47 ac-ft/yr, which is well below the allowable water allotment of 60.8 acre-ft/yr for the 60.86 acre parcel[1].

As described in the March 3rd Working Draft, the WAA procedure uses a screening process to determine if a proposed project may have an adverse impact on the groundwater basin as a whole, on the water levels of neighboring non-project wells, or on surface waters. The project is within the Napa Valley Floor. The estimated increase in water demand is less than 4 percent, and total demand is well below the allowable allotment. On the basis of the information presented above, we conclude that the project meets Tier 1 water use criteria.

[1] As described on Page 8 of the March 2nd Working Draft, screening criteria for parcels located on the Napa Valley Floor is 1 acre-foot per acre of land per year.

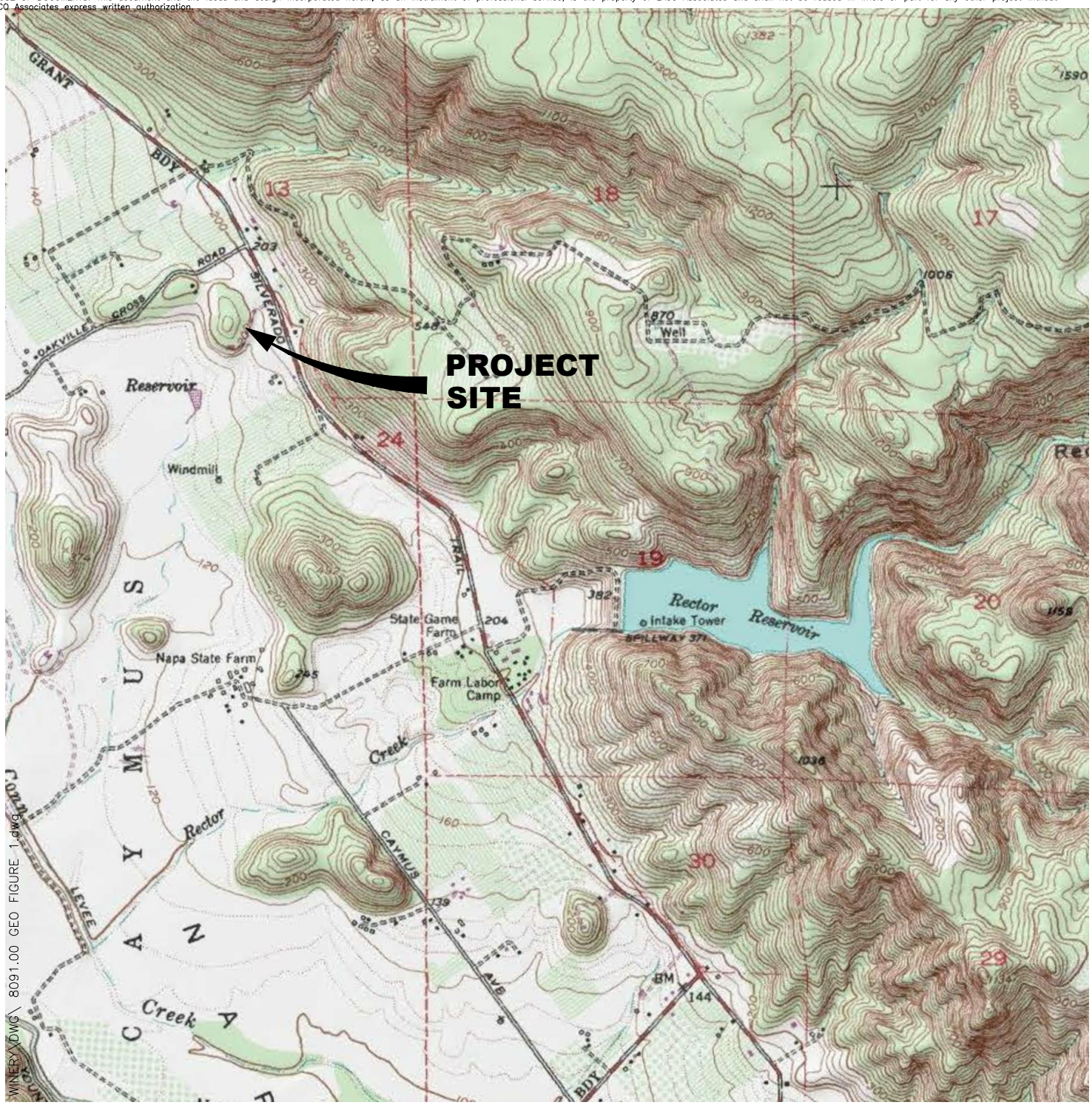
FIGURES

LACO

EUREKA • UKIAH • SANTA ROSA

1-800-515-5054 www.lacoassociates.com

PROJECT	TENCH WINERY	BY JDB	FIGURE 1
CLIENT	TENCH WINERY, LLC	DATE 3/25/15	
LOCATION	7631 SILVERADO TRAIL, NAPA, CA	CHECK JER	JOB NO. 8091.01
	VICINITY MAP	SCALE AS SHOWN	



NOTES:

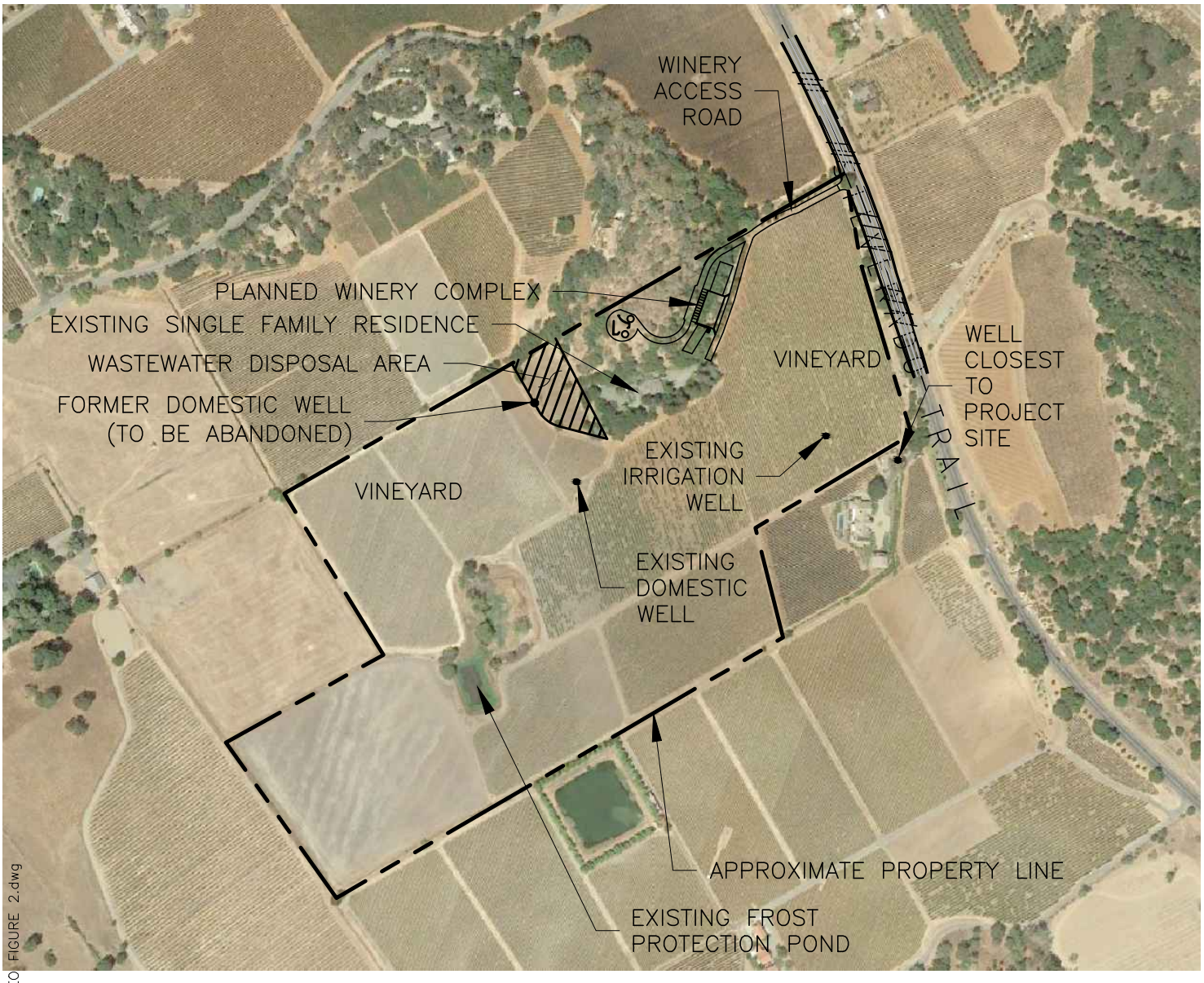
1. ALL LOCATIONS ARE APPROXIMATE.
2. MAP SHOWN HEREON IS FROM USGS.

0 24,000

SCALE: 1:24,000

Mar 26,2015—1:54pm T:\Cadfiles\8000\8091.00 TENCH WINERY\DWG\ 8091.00 GEO FIGURE 1.dwg

LACO	PROJECT	TENCH WINERY	BY	JDB	FIGURE
EUREKA • UKIAH • SANTA ROSA	CLIENT	TENCH WINERY, LLC	DATE	3/30/15	2
1-800-515-5054 www.lacoassociates.com	LOCATION	7631 SILVERADO TRAIL, NAPA, CA	CHECK	JER	JOB NO. 8091.01
		SITE PLAN	SCALE	AS SHOWN	



NOTES:

1. ALL LOCATIONS ARE APPROXIMATE.
2. IMAGE SHOWN HEREON IS FROM GOOGLE.

0 125' 250'

SCALE: 1"=250'

Mar 26,2015—1:53pm T:\Cadfiles\8000\8091.00 TENCH WINERY\DWG\ 8091.00 GEO FIGURE 2.dwg

APPENDIX 1

Vineyard Water Demand Calculations

Appendix 1

Existing Irrigation Well Water Use
Planned Tench Winery, Napa, California

Flow Capacity =	175	gallons/minute[1]
Total pumping time since installation =	4,343	hours
Volume pumped =	140.0	acre-ft[2]
=	45,601,500	gallons
Date new pump installed =	June 10, 2010	
Date of reading =	November 13, 2014	
Run time since pump installation =	4.43	years
Average Annual Volume =	31.59	acre-ft/year
=	10,293,474	gallons/year
Parcel Area =	60.86	acres
Average Annual Volume per acre =	0.52	acre-ft/acre/year
=	169,134	gallons/acre/year

[1] The flow controlled by the capacity of the in-line filter (personal communication with Rob Lutz, Oakville Pump, Inc., 11/14/14).

[2] Includes irrigation water and water used for frost and heat protection.