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## Wastewater Feasibility Study



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Napa County Planning, Building  
& Environmental Services

# WINERY WASTEWATER FEASIBILITY REPORT

ZD WINES

8383 SILVERADO TRAIL  
NAPA, CA 94558

APN 030-200-005

*Prepared for:*

ZD Wines, LLC  
8383 Silverado Trail  
Napa, CA 94558



#4114037.0

September 27, 2017



TABLE OF CONTENTS

I. INTRODUCTION ..... 1

II. EXISTING SANITARY SEPTIC SYSTEM ..... 1

III. EXISTING PROCESS WASTEWATER SYSTEM..... 1

    MONTHLY WASTEWATER FLOWS:..... 2

IV. CONCLUSIONS..... 2

APPENDICES

- A. Vicinity Map, USGS Map, Well & Irrigation Map



## **I. Introduction**

The owners of the ZD Winery are applying for a Use Permit Modification to increase their annual production. The purpose of this report is to demonstrate that their existing Process Wastewater system is capable of treating wastewater from the production of up to 120,000 gallons of wine per year. The modification proposes no increase in visitation, full-time or part-time employees, and no new construction. Please refer to Appendix 1 for a Vicinity Map, USGS Map and well and Irrigation Map.

## **II. Existing Sanitary Septic System**

Information from Napa County Environmental Health Department files for the parcel show an existing sanitary wastewater system that is designed for a peak flow capacity of 1,944 gpd and utilizes a standard, 1,080 lineal foot, leach field to treat and dispose of sanitary wastewater. The sanitary waste is distributed to a standard leach field. A 100% reserve standard leach field is located adjacent to the primary leach field. No increase in sanitary wastewater flows is proposed as part of this modification.

## **III. Existing Process Wastewater System**

### **WINERY PROCESS WASTEWATER CHARACTERISTICS**

The following is a summary of the winery wastewater characteristics:

<b><i>Wine Production:</i></b>	120,000 gallons of wine per year 2.38 gallons of wine per case 50,420 cases/year
<b><i>Wastewater Production:</i></b>	5 gallons of wastewater/gallon of wine 600,000 gallons/year
<b><i>Peak Daily Waste Water Flow:</i></b>	Crush Period = 60 days Annual wine production x 1.5 / 60 3,000 gallons/day
<b><i>Average Daily Flow:</i></b>	$600,000/365 = 1,644$ gallons/day



Monthly Wastewater Flows:

**TABLE 1**

	% By Month	Waste/Month	
Sep	14%	84,000	Gal/Month
Oct	14%	84,000	Gal/Month
Nov	11%	66,000	Gal/Month
Dec	8%	48,000	Gal/Month
Jan	4%	24,000	Gal/Month
Feb	6%	36,000	Gal/Month
Mar	6%	36,000	Gal/Month
Apr	5%	30,000	Gal/Month
May	6%	36,000	Gal/Month
Jun	7%	42,000	Gal/Month
Jul	9%	54,000	Gal/Month
Aug	10%	60,000	Gal/Month
Totals	100%	600,000	Gal/Year

According to Napa County Environmental Management Sewage Treatment System Design Guidelines, winery process wastewater must be treated prior to surface discharge. Based on our experience, winery wastewater characteristics are as follows:

Characteristics	Units	Average
pH		3.5
BOD5	mg/l	6000
TSS	mg/l	500
Nitrogen	mg/l	20
Phosphorus	mg/l	10

The winery is served by an existing process wastewater system, recently repaired under Permit E15-00711. The system includes a membrane bio reactor (MBR) and utilizes the treated water for supplemental irrigation. This system is designed to serve a peak flow of 3,000 gpd.

**IV. Conclusions**

The existing on-site process wastewater system has a documented capacity of up to 3,000 gpd which is sufficient to serve an annual production rate of 120,000 gallons of wine per year with a 60-day crush period. No Modifications to the existing system are necessary for the proposed increase in production.



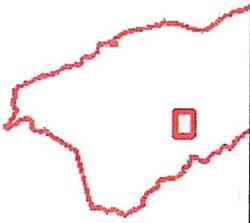
Appendix A  
Vicinity Map, USGS Map, Well & Irrigation Map



# ZD Wines



**Legend**  
 □ County Boundary



**Notes**  
 Disclaimer: This map was prepared for informational purposes only.  
 No liability is assumed for the accuracy of the data delineated hereon.



This map was printed on 9/8/2014



# ZD WINES WELL & IRRIGATION MAP



**GRAPHIC SCALE**



( IN FEET )  
1 inch = 150 FT

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