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Wastewater Feasibility Study

The Caves at Soda Canyon P16-00106
Planning Commission Hearing April 19, 2017

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Winery Wastewater Flow Calculations

for the

Caves Winery

Located at:

2275 Soda Canyon Road

Napa, CA 94558

Date: 12/18/2015

Project # 00102

Legend

Requires Input
Automatically Calculates
Important Value Automatically Calculate
Important Value Requires Input

Hit ctrl + alt + shift + F9 when finished to recalc all formulas

Winery Waste Flow Summary

The domestic wastewater flows will remain unchanged and will be treated by the existing domestic wastewater system. The winery process waste flows are currently treated using an existing hold and haul system, however a new process wastewater system for the winery has recently been approved by the county and is scheduled to be installed in the near future. This new system will have the capacity to treat up to 1500 gallons of process waste water per day. As shown below, this is enough capacity to treat the expected flows from the proposed increase in wine production from 30,000 gallons to 60,000 gallons.

Winery Proposed Process Waste Flow Calculations

Wine Production =	60000	gal/wine/yr
Crush Duration =	60.00	days (30 -60)
Peak Process Waste Flows During Crush =	1500.00	gal/day ((1.5 x production)/crush days)
Average Process Flows (non crush) =	821.92	gal/day ((5 x production)/days in yr)
Additional Process Flow =	0.00	gal/day (usually 0)
Total Design Peak Process Waste Flows =	**1500.00**	gal/day

Existing & Proposed Domestic Waste Flows

Typical Crush Weekend		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	20	#
Event people count serviced by this system =	0	#
FT employee daily domestic waste flow =	60.00	gal/day
PT employee daily domestic waste flow =	0.00	gal/day
Visitor daily domestic waste flow =	60.00	gal/day
Event daily domestic waste flow =	0.00	gal/day
Winery Dimestic Flow =	**120.00**	**gal/day**
Typical Non Crush Weekend		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	16	#
Event people count serviced by this system =	0	#
FT employee daily domestic waste flow =	60.00	gal/day
PT employee daily domestic waste flow =	0.00	gal/day
Visitor daily domestic waste flow =	48.00	gal/day
Event daily domestic waste flow =	0.00	gal/day
Winery Dimestic Flow =	**108.00**	**gal/day**
Typical Weekday		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	12	#
Event people count serviced by this system =	0	#
FT employee daily domestic waste flow =	60.00	gal/day
PT employee daily domestic waste flow =	0.00	gal/day
Visitor daily domestic waste flow =	36.00	gal/day
Event daily domestic waste flow =	0.00	gal/day
Winery Dimestic Flow =	**96.00**	gal/day

Total Winery Waste Peak Design Flows =	**1620.00**	**gal/day**

Combined Winery Waste Annual Volume Calculations

Winery Combined Process & Domestic Waste Flows

Typical Crush Weekend Volumes		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	20	#
FT employee daily domestic waste flow =	60.00	gal/day
PT employee daily domestic waste flow =	0.00	gal/day
Visitor daily domestic waste flow =	60.00	gal/day
Number of Flow Days =	60.00	gal/day
Total domestic wastewater volume =	7200	gal/year
Total process wastewater volume =	49315	gal/year
Combined Process and Domestic Volume =	56515	gal/year

Typical Non Crush Weekend Volumes		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	16	#
FT employee daily domestic waste flow =	60.00	gal/day
PT employee daily domestic waste flow =	0.00	gal/day
Visitor daily domestic waste flow =	48.00	gal/day
Number of Flow Days =	86.00	gal/day
Total domestic wastewater volume =	9288	gal/year
Total process wastewater volume =	70685	gal/year
Combined Process and Domestic Volume =	79973	gal/year

Typical Weekday Volumes		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	12	#
FT employee daily domestic waste flow =	60.00	gal/day
PT employee daily domestic waste flow =	0.00	gal/day
Visitor daily domestic waste flow =	36.00	gal/day
Number of Flow Days =	219.00	gal/day
Total domestic wastewater volume =	21024	gal/year
Total process wastewater volume =	180000	gal/year
Combined Process and Domestic Volume =	201024	gal/year

Special Event Visitor Volumes	visitors	days/yr	flow/day	gallons
Large Events =	200	6	10	12000
Medium Events =	30	10	10	3000
Other =	10	6	10	600
Other 2 =	0	0	10	0
Total Annual Event Visitor Waste Volume =	15600	gal/year		

Total annual domestic wastewater volume =	**53112**	**gal/yr**	**0.16**	**af**
Total annual process wastewater volume =	**300000**	**gal/yr**	**0.92**	**af**
Total Winery Wastewater Annual Vol =	**353112**	**gal/yr**	**1.08**	**af**

Attachment "B"

Water Availability Analysis

Contact Information	
Property Owner:	Napa Custom Crush LLC, c/o Ryan Waugh
Owner Address:	2275 Soda Canyon Road Napa, CA 94558
Owner Phone:	(707) 861-8100

Site Map

Please see the Use Permit Site Plan for the Caves at Soda Canyon Winery which has been included with this submittal. The said map shows the proposed water source (existing well) for the winery and its proximity to other water sources.

Narrative

This project involves an existing winery located on a 41.35 acre parcel at 2275 Soda Canyon Road in Napa County. The winery owners are proposing to increase their annual wine production from 30,000 gallons up to 60,000 gallons. There are no residences located on the subject property. There are four existing 10,500 gallon tanks that provided water storage for the winery. Three of the tanks provide fire protection storage, while the fourth provides potable water storage. All four of the tank are filled by an existing onsite well which has a capacity of 48 gallons per minute which is equivalent to 77.42 acre feet per year. The well is located on the general northwest portion of the lot. There are no known neighboring wells that exist within 500 feet of the subject well. The existing calculated annual water use for the entire winery is 0.70 acre feet. Of this 0.70 acre feet per year, 0.54 is from process water, the other 0.16 acre feet per year is from domestic water. The proposed increase in wine production is expected to increase the annual water use to 1.08 acre feet. Of this 1.08 acre feet per year, 0.92 is from process water while the domestic water stays the same at 0.16 acre feet per year. Using the calculated recharge rate of 0.67 acre feet of water per acre of land the maximum allowed water use for this parcel would be 27.70 acre feet of water per year. Comparing the proposed use of 1.12 acre feet per year to the above 27.70 acre feet value as well as the well capacity value of 77.42 acre feet per year, it is clear that the subject parcel and well has more than enough capacity to serve the proposed use.

Calculations

Please see the attached calculations below for details on water use and recharge rate.