

“H”

Wastewater Feasibility Study

Attachment E
Septic Feasibility & Domestic Wastewater Report

THEODORE J. WALKER
REGISTERED ENVIRONMENTAL HEALTH SPECIALIST
2280 PLEASANT HILL RD.
SEBASTOPOL, CA 95472
(707) 486-1405
ted_walker@comcast.net

December 28, 2019

Kim Withrow, Supervising REHS
Napa County Department of Environmental Management
1195 Third Street
Napa, CA 95449

**Re: REVISED SEPTIC FEASIBILITY AND DOMESTIC WASTEWATER
SYSTEM REPORT**

Dear Kim:

This document provides my revised Septic Feasibility and Domestic Wastewater System Report for the proposed Use Permit Modification (UPM) for Hyde Estate Winery ("Hyde") at 1044 Los Carneros Road in Napa, CA (the "Property").

As background, the County issued Hyde a winery use permit for the Property in 2009, which opened in June 2017. As the designer of the Process Wastewater (PW) and Domestic Wastewater (DW) systems, I have monitored the operations and wastewater flows of both systems and am happy to state that both systems are operating extremely well.

The DW septic system consists of an E-One Sewage Pump, to the Norweco NSF Treatment system, to a 2,000-gallon sump, and then disperses the treated wastewater into a Subsurface Drip Dispersal System. The dispersal portion of the DW system has a capacity for up to 700 gallons per day peak flow. The Norweco Pre-treatment system (treatment and storage tankage) has a capacity for up to 1,000 gallons per day, which provides redundancy and flow equalization in the pre-treatment tank, treatment system and the sump prior to dispersal.

The Subsurface Drip Dispersal System features two water meters: one measures wastewater flow to the Subsurface Drip Dispersal System and the other measures the flow on an automatic or manual backwash system. With two water meters, we have been able to very accurately measure flows at Hyde.

The DW System is monitored under an operational permit from Napa County. Matt Phillips is the Certified Operator of the system and he provides continuous monitoring and oversight of the DW and PW systems.

Attachment E
Septic Feasibility & Domestic Wastewater Report

The current Use Permit limits the number of visitors for wine tastings to 20 people per day, which is by appointment only. Hyde keeps a record of wine tasters per day. Enclosed with this report is the number of winery visitors summarized in a table, by month and quarter since the facility has opened.

In monitoring the DW System over the past two years, the wastewater flow per person is consistently less than one gallon per person per day. This includes staff (2 full time and 2 part-time employees) and winery visitors. These totals benefit from the low-flow water features throughout the winery, including the restrooms and the NSF-certified dishwasher for glassware.

PROPOSED USE PERMIT MODIFICATION

Under the UPM, wine production will stay the same at 30,000 gallons per year. However, visitation and the size and number of marketing events will increase. Specifically, the applicant seeks to increase the number of daily visitors from 20 to 125 visitors and the size of its approved marketing events. The marketing events will use caterers to serve food at the winery, which will be prepared off-site. The number of employees will also increase from 2 full time and 2 part time employees to 5 full time and 4 part time employees

DOMESTIC WASTEWATER CAPACITY – ASSUMPTIONS vs. ACTUAL

The typical assumptions for employee DW production is 15 gallons per person per day and 3 gallons per person per day for wine tastings under the Napa County Onsite Wastewater Treatment Systems (OWTS) Standards. Based on the 5 full time and 4 part time employees and the 150 visitors per day for wine tastings, OWTS Standards assume the following:

- 1) 5 FTE x 15 gallons per person per day = 75 gals/day
 - 2) 4 PTE x 7.5 gallons per person per day = 30 gals/day
 - 3) 125 Wine tasters x 3 gals/person/day = 375 gals/day
- Total DW flow estimate is 480 gals/day

However, the Uniform Plumbing Code and the State Water Resources Control Board has mandated that all new or remodel projects must install Ultra Water Saving Devices, which results in reduced water or wastewater flow calculations. During our on-site monitoring of Hyde's actual wastewater flows over the past two years, flows are less that one gallon per person per day (for both staff and visitors). Based on actual on-site conditions at the winery since opening in 2017, we estimate the winery's DW under the UPM will produce the following:

- 1) 5 FTE x 1 gallons per person per day = 5 gals/day
 - 2) 4 PTE x 1 gallons per person per day = 4 gals/day
 - 3) 125 Wine tasters x 1 gals/person/day = 125 gals/day
- Total DW flow estimate is 129 gals/day

Attachment E
Septic Feasibility & Domestic Wastewater Report

In my report dated April 16, 2016, I proposed using a 30% water saving device credit for the winery based on the installation of new state-of-the-art water fixtures. I have used a 30% water saving device credit on other projects in Napa County such as Verismo and Bouchaine Wineries. At that time, we believed that a 30% water savings device credit was “generous.” Three years later we see an actual wastewater flow that is about 50% lower than the design peak flow.

MARKETING EVENTS

The current use permit allows 10 marketing events with no more than 30 people and the auction event; but, the UPM seeks to increase this to 8 events with 55 people and 2 events with 150 people, plus the auction.

For purposes of the report, marketing events are separated into two categories: events where there is a sit-down dinner ("Category One"), and events where there is wine tasting along with passed hors d'oeuvres ("Category Two").

All food, whether a Category One or Category Two event, will come from a licensed food caterer that will prepare food off-site to serve at the winery. The caterer will bring all plates, silverware, extra glasses and utensils to any Marketing Event with food. The caterer shall also remove all plates, cups, silverware, extra glasses, serving utensils and leftover food for cleaning “offsite.” Hyde will not have a licensed food preparation kitchen at the winery.

Category One Events

For Category One events, there may be 8 events with 50 guests, and 2 events with 150 guests on an annual basis. Consistent with County standards, DW flow is estimated to be 10 gallons per person for a sit-down dinner. But, metered use demonstrates wastewater flows are less than 50% of the current standards. Thus, wastewater flow for Category One events are estimated at 5 gals/person. For staff, domestic waste for FTEs are estimated at 7.5 gals/FTE/event (15 gals/person/day x 50% credit). Domestic waste for PTEs are estimated at 3.75 gals/PTE/event (7.5 gals/PTE/day x 50% credit).

Category One Events – 55 people

- 1) 5 FTE x 7.5 gals/FTE/event = 37.5 gals/event
 - 2) 4 PTE x 3.75 gals/PTE/event = 15 gals/event
 - 3) 55 diners x 5 gals/person/event = 275 gals/event
- Total DW flow estimate = 327.5 gals/event¹

Please note the Project doesn't incorporate a 150-person Category One event.

¹ In addition to the flows for visitation at full capacity (150 gals/day), we estimate a total of 452.5 gals/day on days when such an event occurs on the same day the tasting room is open.

Attachment E
Septic Feasibility & Domestic Wastewater Report

Category Two Events

For Category Two marketing events , metered use has demonstrated wastewater flows less than 50% of the current OWTS standards of 3 gal/person/event. For the two Category Two marketing events, we estimate a wastewater flow of 1.5 gal/person/event with 50% credit:

- Category Two Events – 150 people
- 1) 5 FTE x 7.5 gals/FTE/event = 37.5 gals/event
 - 2) 4 PTE x 3.75 gals/PTE/event = 15 gals/event
 - 3) 150 Wine tasters x 1.5 gals/person/event = 225 gals/event
- Total DW flow estimate is 277.5 gals per event

Annual Wine Auction

For the annual auction event, no more than 150 guests are allowed. These events charitable events will be similar to the Category Two events for 150 people in which there is sufficient DW flow capacity.

RESIDENTIAL UNIT

The final issue is the residence on the Property, which was significantly damaged by fire and later demolished via a demolition permit issued by the County. The existing septic system for the residence was sized to provide capacity for the existing two-bedroom house on the property. However, the Hyde Family has decided to rebuild this unit as a one-bedroom unit. P&R Septic obtained a permit to remove the existing septic tank for the residence. As such, a one-bedroom unit has peak capacity of 120 gallons per day.

SUMMARY OF WASTEWATER CAPACITY

Daily Visitation

5 FTEs & 4 PTEs per day
125 Wine Tasters per day
Total DW flow = 129 gals/day

Marketing Events

10 Marketing Events per year. Of these, there will be:

- 8 Category One Special Events with dinners up to 55 persons
DW flow = 302.5 gals/event
- 2 Category Two Special Marketing Events with up to 150 people per event
DW flow = 277.5 gals/event
- Annual Wine Auction
DW flow = 277.5 gals/event

Attachment E
Septic Feasibility & Domestic Wastewater Report

Residence

One bedroom residence is 120 gals per day. The DW system has a capacity for up to 700 gallons per day peak flow. I find there is adequate DW septic system capacity for the UPM application and a future one-bedroom house.

UPM CONDITIONS OF APPROVAL

Hyde will need to process an application to receive a Water Supply Permit from Napa County Department of Environmental Management as a condition of the Use Permit.

Hyde Winery acknowledges that they will not operate a restaurant or food preparation facility at the winery.

Hyde Winery acknowledges that the DW and PW septic systems are now operational and will continue to submit Operational Permit information for both DW and PW systems. They will continue to monitor the number of guests of the wastewater flow of the domestic wastewater system. They will not exceed a maximum wastewater flow of 700 gallons per day.

Marketing Events with 150 people shall be limited to Category One events.

This Septic System Feasibility Report clearly demonstrates that the proposed UPM will not exceed the capacity of the permitted DW septic system.

Should you or staff have questions, please call me at 486-1405 or email me at ted_walker@comcast.net.

As discussed with Environmental Health staff, we have examined all health and safety elements for this UPM, and the system will exceed all standards.

Yours truly,

T. J. Walker

Theodore J. Walker,
California Registered Environmental Health Specialist, #4323

Attachment