

WASTEWATER DISPOSAL FEASIBILITY STUDY
FOR THE
FARM COLLECTIVE WINERY USE PERMIT

LOCATED AT:
394 & 396 Devlin Road
Napa, CA 94558
NAPA COUNTY APNs 057-300-001, -003 & -004

PREPARED FOR:
J3 Wine Partners
c/o Riley Russo
5584 Silverado Trail
Napa, CA 94558

PREPARED BY:



2074 West Lincoln Avenue
Napa, California 94558
Telephone: (707) 320-4968
www.appliedcivil.com

Job Number: 13-131

RECEIVED

OCT - 8 2013

Napa County Planning, Building
& Environmental Services



Michael R. Muelrath

9/23/2013

Michael R. Muelrath R.C.E. 67435

Date

TABLE OF CONTENTS

LIST OF APPENDICES	iii
INTRODUCTION	I
DOMESTIC WASTEWATER DISPOSAL	I
WINERY PROCESS WASTEWATER DISPOSAL	I
Process Wastewater Flow Estimates	2
Hold and Haul Tank Sizing	2
Hauling Truck Traffic.....	3
CONCLUSION.....	3

LIST OF APPENDICES

APPENDIX 1: Site Plan Prepared by vonRaesfeld & Associates (Reduced to 11" x 17").....	4
APPENDIX 2: Napa County Hold and Haul Guidelines for Winery Process Wastewater Management.....	6

INTRODUCTION

J3 Wine Partners is applying for a new Use Permit to operate a new winery within a portion of an existing commercial building located at 394 & 396 Devlin Road in Napa County California. We understand that the proposed winery will occupy two commercial condo spaces that are known as Napa County Assessor's Parcel Numbers (APNs) 057-300-003 & -004. Parking and utility infrastructure will also occur on the adjoining common area parcel known as Napa County Assessor's Parcel Number 057-300-001. The property is located between Devlin Road and State Route 29 approximately 600 feet north of the intersection of Sheehy Court and Devlin Road.

The Use Permit application under consideration proposes interior modifications to the existing building to create new winery production, office and tasting room spaces. Renovations will include new floor drains and a dedicated process wastewater collection system that solely collects wastewater from the interior winery production space associated with the Farm Collective Winery.

We understand that the winery is planning to process up to a maximum of 80,000 gallons of wine per year. It is expected that 40,000 gallons of the total production volume will be crushed, fermented, aged and bottled onsite and that the remaining 40,000 gallons of wine production will be wine that is brought to the facility for bottling.

J3 Wine Partners has requested that Applied Civil Engineering Incorporated (ACE) prepare a brief report outlining the planned winery process and sanitary wastewater disposal plans.

DOMESTIC WASTEWATER DISPOSAL

It is our understanding that the domestic waste from the proposed restrooms will be disposed of via a connection to the existing building sewer lateral that connects to the Napa Sanitation District sewer main.

WINERY PROCESS WASTEWATER DISPOSAL

We have reviewed several options for disposing of the winery process wastewater with the property owner. After weighing the advantages and disadvantages of several options, J3 Wine Partners desires to utilize a hold and haul system to dispose of the winery process wastewater. In this scenario process wastewater from the J3 Wine Partners portion of the existing building will be collected in floor drains that will empty into an interior sump. The sump will be equipped with a pumping system that will pump the winery process wastewater to the outside holding tanks. The winery process wastewater will be temporarily stored in watertight storage tanks until it is hauled offsite for treatment and disposal by the East Bay Municipal Utility District or a similar municipal wastewater treatment plant.

Process Wastewater Flow Estimates

It is generally assumed that six gallons of winery process wastewater are generated for each gallon of wine that is produced each year and that 1.5 gallons of the 6 gallons of wastewater are generated during the crush period for each gallon of wine that is produced. Based on the planned production capacity and the expectation that both white and red wine will be produced at the winery, we have assumed a 60 day crush period. Furthermore, although it is planned that only 50% percent of the maximum permitted wine production will be crushed onsite we have assumed that all wine produced onsite will be crushed onsite to give the maximum operational flexibility. Using these assumptions, the annual, average daily and peak winery process wastewater flows are calculated as follows:

$$\text{Annual Winery Process Wastewater Flow} = \frac{80,000 \text{ gallons wine}}{\text{year}} \times \frac{6 \text{ gallons wastewater}}{1 \text{ gallon wine}}$$

$$\text{Annual Winery Process Wastewater Flow} = 480,000 \text{ gallons per year}$$

$$\text{Average Daily Process Wastewater Flow} = \frac{480,000 \text{ gallons wastewater}}{\text{year}} \times \frac{1 \text{ year}}{365 \text{ days}}$$

$$\text{Average Daily Winery Process Wastewater Flow} = 1,315 \text{ gallons per day}$$

$$\text{Peak Winery Process Wastewater Flow} = \frac{80,000 \text{ gallons wine}}{\text{year}} \times \frac{1.5 \text{ gallons wastewater}}{1 \text{ gallon wine}} \times \frac{1 \text{ year}}{60 \text{ crush days}}$$

$$\text{Peak Winery Process Wastewater Flow} = 2,000 \text{ gallons per day (gpd)}$$

Hold and Haul Tank Sizing

We recommend that the winery process wastewater hold and haul system have enough capacity to store seven days of peak flow from the winery and that the holding tank system has a water level alarm in accordance with the requirements outlined in the Napa County Hold and Haul Guidelines for Winery Process Wastewater Management (see Appendix 2).

Based on our peak flow estimate the required holding tank volume is calculated as follows:

$$\text{Required Holding Tank Volume} = 2,000 \text{ gallons per day} \times 7 \text{ days}$$

$$\text{Required Holding Tank Volume} = 14,000 \text{ gallons}$$

We recommend that two above ground poly tanks with a combined capacity of 15,000 gallons be installed to provide the required storage volume. The holding tanks will be located at the west side of the building as shown on the site plan prepared by vonRaesfeld & Associates (see Appendix 1). The tanks will be plumbed such that the pumping truck will draft water from the top of the tanks through a standpipe. A bottom outlet will not be installed on the tanks and therefore secondary containment will not be required.

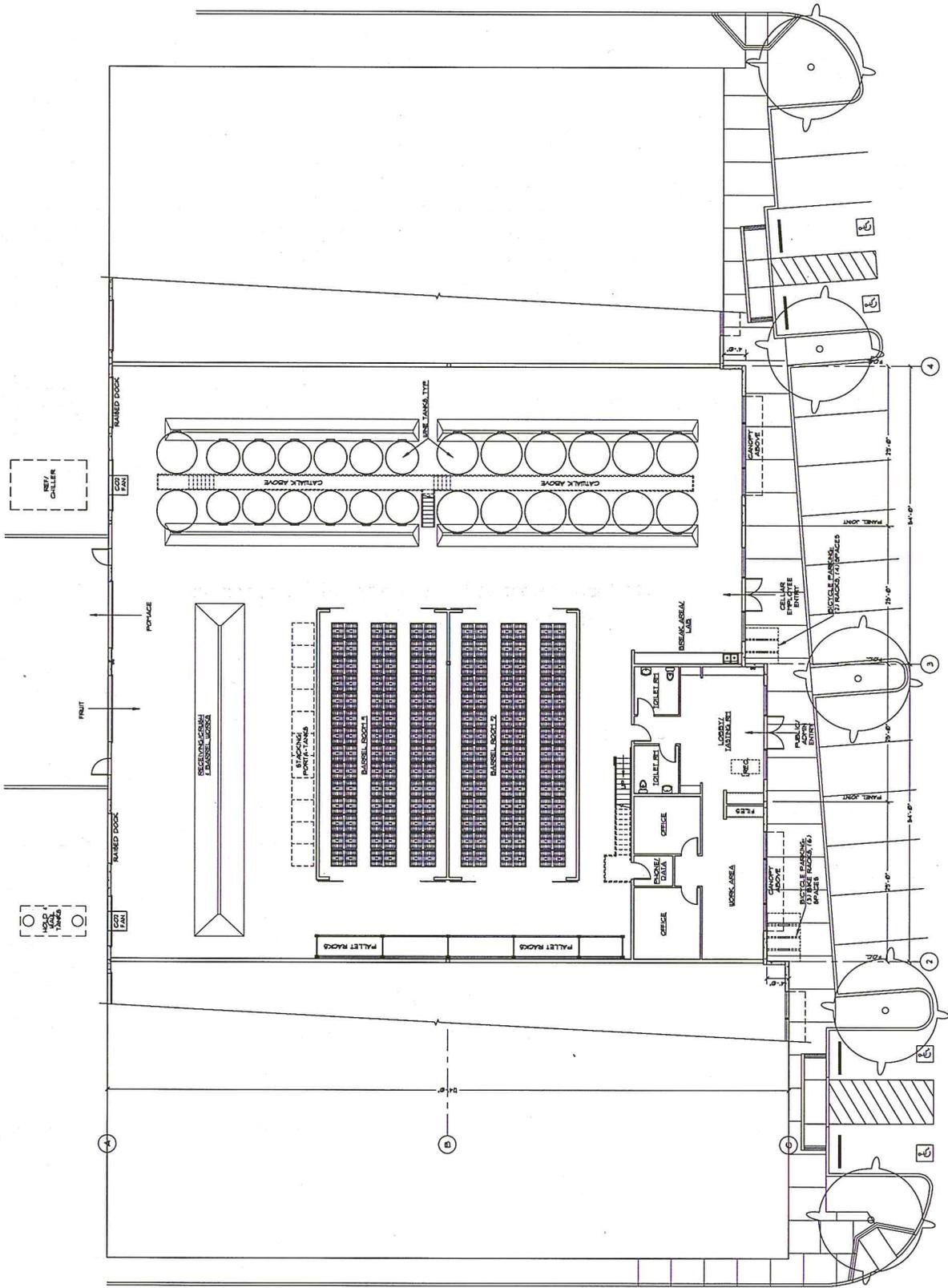
Hauling Truck Traffic

The pumping truck will service the holding tanks by entering the existing driveway on the east side of Devlin Road and driving to the holding tank location. Based on the anticipated wastewater flows and site access conditions it is likely that either a 3,500 or 6,000 gallon septic pumping truck will service the hold and haul system. This would mean that pumping of the hold and haul system would need to occur three to four times per week during crush and approximately two to three times per week outside of the crush season when the winery is operating at the full production capacity of 80,000 gallons of wine per year.

CONCLUSION

It is our opinion that it is feasible to dispose of the domestic wastewater from the proposed winery facility via the Napa Sanitation District sewer lateral. Furthermore, we believe it is feasible to effectively manage the winery process wastewater with a "Hold and Haul" type system. Full design plans and specifications for both the domestic and process wastewater system improvements should be submitted to Napa County and the Napa Sanitation District for review and approval prior to building permit issuance.

**APPENDIX I: Site Plan Prepared by vonRaesfeld & Associates
(Reduced to 11" x 17")**



1 LOWER LEVEL FLOOR PLAN
 Scale: 1/8" = 1' - 0"

APPENDIX 2: Napa County Hold and Haul Guidelines for
Winery Process Wastewater Management

HOLD & HAUL GUIDELINES FOR WINERY PROCESS WASTEWATER MANAGEMENT

These Hold & Haul guidelines are designed to provide requirements and guidance to wastewater design consultants on design standards, installation parameters, and operation and maintenance requirements for wineries proposing to utilize holding tanks as the primary means of process wastewater management. Hold & Haul winery wastewater systems are an approved method of wastewater management for wineries choosing to implement a system including collection, storage, and off-site hauling of process wastewater in lieu of installation of an on-site process wastewater system.

GENERAL REQUIREMENTS:

- A licensed civil engineer or REHS shall design all Hold & Haul systems. A plan submittal and review by this department is required.
- All wineries proposing to use Hold & Haul as their process wastewater management system shall obtain approval by the Napa County Conservation, Development, and Planning Department (CDPD) either by the Use Permit process or other means approved by the CDPD. When Hold & Haul is chosen, the applicant will have to show in the feasibility report that an approved on-site method of winery wastewater disposal can be installed on the property (i.e. leach lines, an alternative system, a pond, or pre-treatment to drip). Hold & Haul is merely chosen as an option, it cannot be the ONLY type of disposal method the property can accommodate.
- Holding tank(s) shall be installed under a construction permit from this department.
- All holding tanks shall be operated under a valid operating permit issued by this department.
- Wineries shall contract with an approved septage hauler permitted with the Napa County Department of Environmental Management.
- A copy of the contract shall be provided to this office.

DESIGN STANDARDS:

General:

- All tank systems shall be designed to prevent odors. Odor control (aeration, etc) may be required to meet this requirement.
- Holding tanks shall have a high water alarm. The high water alarm shall be located at 70% of the volume of the tank(s). High water alarms shall be an audible/visual alarm located within 25 feet of a regularly occupied building or other visible location approved by this department.
- The holding tank system shall have a minimum size to store 7 days of peak wastewater flow.

- All tanks shall be tested for water-tightness prior to use.
- A method for measuring the amount of wastewater generated shall be provided. This will be used to assure that all wastewater generated is pumped by the septage hauler.

Below Grade Installation:

- All below ground tanks shall be IAPMO approved septic tanks.
- All access openings on septic tanks shall have risers extended a minimum of two (2) inches above the finished grade.
- All risers shall be of durable construction, manufactured specifically for their intended use, and approved by this department. All risers shall be securely attached by means of a watertight collar and/or other applied sealant material applied according to the manufacturer's instructions. All risers shall be fitted with gastight, watertight, vermin proof, securely fastened covers that are removable with standard hand tools.

Above Ground Installation:

- All above ground tanks shall be approved for storage of process wastewater by an independent testing organization (NSF, EPA, etc).
- Inlet piping into the tank shall be air gapped, have a check valve, or installed to gravity flow into the holding tank.
- The outlet of the tank shall be a pipe with a connection port for pumping or an access opening into the top of the tank in a location accessible for pumping. The outlet port, if installed, shall have a shut off valve and the valve shall be equipped with a lock. For tanks that have outlet piping at or near the bottom of the tank, secondary containment is required.

When required, aboveground tanks shall have a secondary containment complying with the following:

CONTAINMENT VOLUME:

Secondary containment for a single container (tank) must be 110% of the primary container.

Secondary containment for multiple tanks shall be 150% of the largest tank's volume.

All secondary containment systems open to rainfall must be able to hold 4.5 inches of rainfall in addition to the required secondary containment volume.

CONTAINMENT CONSTRUCTION:

Secondary containment must be constructed using materials capable of containing a spill or leak for at least as long as the period between monitoring inspections. Constructed secondary containment systems, i.e., poured pads with berms, must be tested to assure that they are leak

tight. Approved coatings must be applied to secondary containment surfaces when spills or leaks would damage or penetrate the uncoated secondary containment system.

CONTAINMENT DRAINAGE:

Uncontrolled drainage from a secondary containment system is not allowed. Only accumulated rainwater may be released from a secondary containment system after it has been determined to be uncontaminated. Secondary containment systems may be covered to prevent rainfall from entering. The drainage system must be kept closed or pumps turned off unless the drainage process is monitored.

REPORTING REQUIREMENTS:

Pumping records shall be kept for a period of 5 years and available for inspection by the administrative authority.