January 22, 2014

Kirsty Gerosa
Napa County Planning Building &
Environmental Services
1195 Third Street, Room 210
Napa, CA 94559

RE: Raymond Winery UP-Water/WWFS and UP
Project Number 2010080

Dear Kirsty:

This correspondence is an updated Phase I water availability analysis for the Raymond Vineyards and Cellar Use Permit Application (P11-00156) which reflects the proposed marketing changes and no change in production.

In general, a water availability analysis, in accordance with Napa County policy, is required for the purpose of addressing the potential for a project to adversely impact the ground water supplies of neighbors. Actual water use data from 2011 was used to assess the existing water use as well as extrapolate the proposed water demand. The following information is provided to verify that the Public Works criteria are satisfied.

1. **SITE PLAN**

Refer to the Overall Site Plan attached to the Use Permit Application for a general layout of the project components. These plans also include approximate property boundaries, existing buildings and agricultural development, and the existing and proposed winery process wastewater and sanitary sewage systems. A vicinity map is supplied (Enclosure A) to help in locating the site.

2. **PROJECT DESCRIPTION**

Raymond Vineyard and Cellar is seeking County approval to modify the existing facility. The winery production capacity is currently 750,000 gallons per year (for a 3 year average) with a peak of 950,000 gallons per year. The site is on parcel APN 030-270-013 totaling 60.21 acres located at 849 Zinfandel Lane, in St. Helena, California.

Treated process wastewater will be reused as irrigation water and is/will be stored in the existing wastewater ponds. The water sources include 2 existing wells (one of the wells is on-site and is used

as the domestic water supply and the other well is on the adjacent parcel and used for vineyard irrigation), rainfall, and treated winery process wastewater.

3. PROJECTED WATER CONSUMPTION

The total water requirement has been calculated using existing 2011 water use data from the facility. The projected water consumption and usage figures are summarized in Phase I Study worksheet. The analysis shows a total projected water usage approximately 52.47 ac-ft/yr (this is inclusive of winery process/domestic water, landscape, and vineyard irrigation water demands, even though all vineyard irrigation is provided by a well on an adjacent parcel). If vineyard irrigation is excluded, the projected water demand is approximately 21.17 ac-ft/yr. Some of the required vineyard irrigation water demand will be supplied by treated process wastewater and will offset the amount of irrigation well water required.

Vineyard Irrigation Water Demand = 31.3 ac-ft/yr

As outlined in the Phase I study, all groundwater that is used for vineyard irrigation will be supplied by the irrigation well (about 120 gpm) that is located on the adjacent 27.68 acre parcel (APN 030-050-031).

Winery Existing Water Demand = 19.99 ac-ft/yr

Process Water = 16.3 ac-ft/yr (750,000 gal of wine x 7 gal water/gal of wine or 900,000 gal of wine x 6 gal water/gal wine)

Domestic Water = = 1.95 ac-ft/yr (based on current 1,745 gpd design flows for septic system, 365 days per year)

Landscape Water = 1.69 ac-ft/yr (based on current 1,500 gpd water demand, 365 days per year)

Winery Proposed Water Demand = 21.17 ac-ft/yr

Process Water = 16.3 ac-ft/yr (same criteria as above due to no change in production)

Domestic Water = = 3.13 ac-ft (based on proposed marketing plan, see attached breakdown)

Landscape Water = 1.69 ac-ft/yr (based on current 1,500 gpd water demand, 365 days per year)

4. PEAK USAGE

Irrigation water 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. All vineyard irrigation water, other than what is supplied by reclaimed process wastewater, will be supplied by the irrigation well that is located on the adjacent parcel (APN 030-050-031).

Peak demand for process water in the winery will occur during the harvest, typically in September. These demands will be on the order of 2 to 3 times the average process water demand.

The demand for water for domestic uses in the winery will be relatively steady throughout the year, with some increase during the summer and harvest months.

5. WATER SOURCE AND DELIVERY FACILITY

Water for the winery processes and domestic uses will be supplied by the existing domestic well, which is located on the attached Site Plan. The existing domestic well yields approximately 100-120 gpm. There has been no evidence of groundwater depletion. See attached overall site plan and well log.

6. SUMMARY

The proposed annual water demand for the Raymond Vineyard and Cellar Parcel is projected to be 21.17 acre-feet (52.47 ac-ft/yr with vineyard irrigation included), which is below the allowable water allotment of 60.21 acre-feet.

Sincerely,

Gina Giacone

Gina Giacone, P.E.
Project Manager

Enclosure A: Water Availability Analysis, Phase I Study

Enclosure B: Vicinity Map, Parcel Map, Site Plan

Enclosure C: Domestic Water Demand/Sanitary Sewage Flows

SUMMIT ENGINEERING, INC.
Project No. 2010080

RAYMOND VINEYARD AND CELLAR

PHASE I WATER AVAILABILITY ANALYSIS

ENCLOSURE A

WATER AVAILABILITY ANALYSIS, PHASE I STUDY

A Tradition of Stewardship
A Commitment to Service

Department of Public Works

1195 Third Street, Suite 201
Napa, CA 94559-3092
www.co.napa.ca.us/publicworks

Main: (707) 253-4351
Fax: (707) 253-4627

Donald G. Ridenhour, P.E.
Director

WATER AVAILABILITY ANALYSIS - PHASE ONE STUDY

Introduction: As an applicant for a permit with Napa County, It has been determined that Chapter 13.15 of the Napa County Code is applicable to approval of your permit. One step of the permit process is to adequately evaluate the amount of water your project will use and the potential impact your application might have on the static groundwater levels within your neighborhood. The public works department requires that a Phase 1 Water Availability Analysis (WAA) be included with your application. The purpose of this form is to assist you in the preparation of this analysis. You may present the analysis in an alternative form so long as it substantially includes the information required below. Please include any calculations you may have to support your estimates.

The reason for the WAA is for you, the applicant, to inform us, to the best of your ability, what changes in water use will occur on your property as a result of an approval of your permit application. By examining the attached guidelines and filling in the blanks, you will provide the information we require to evaluate potential impacts to static water levels of neighboring wells.

Step #1:

Provide a map and site plan of your parcel(s). The map should be an 8-1/2"x11" reproduction of a USGS quad sheet (1:24,000 scale) with your parcel outlined on the map. Include on the map the nearest neighboring well. The site plan should be an 8-1/2"x11" site plan of your parcel(s) with the locations of all structures, gardens, vineyards, etc in which well water will be used. If more than one water source is available, indicate the interconnecting piping from the subject well to the areas of use. Attach these two sheets to your application. If multiple parcels are involved, clearly show the parcels from which the fair share calculation will be based and properly identify the assessor's parcel numbers for these parcels. Identify all existing or proposed wells

Step #2: **Determine total parcel acreage and water allotment factor. If your project spans multiple parcels, please fill a separate form for each parcel.**

Determine the allowable water allotment for your parcels:

Parcel Location Factors

The allowable allotment of water is based on the location of your parcel. There are 3 different location classifications. Valley floor areas include all locations that are within the Napa Valley, Pope Valley and Carneros Region, except for areas specified as groundwater deficient areas. Groundwater deficient areas are areas that have been determined by the public works department as having a history of problems with groundwater. All other areas are classified as Mountain Areas.

Please underline your location classification below (Public Works can assist you in determining your classification if necessary):

Valley Floor	1.0 acre feet per acre per year
Mountain Areas	0.5 acre feet per acre per year
MST Groundwater Deficient Area	0.3 acre feet per acre per year

Assessor's Parcel Number(s)	Parcel Size (A)	Parcel Location Factor (B)	Allowable Water Allotment (A) X (B)
030-270-013	60.21	1.0	60.21

Step #3:

Using the guidelines in Attachment A, tabulate the existing and projected future water usage on the parcel(s) in acre-feet per year (af/yr). Transfer the information from the guidelines to the table below.

EXISTING USE:		PROPOSED USE:	
Residential	_____ af/yr	Residential	_____ af/yr
Farm Labor Dwelling	_____ af/yr	Farm Labor Dwelling	_____ af/yr
Winery	19.99 af/yr	Winery	21.17 af/yr
Commercial	_____ af/yr	Commercial	_____ f/yr
Vineyard*	31.3 af/yr	Vineyard*	31.3 af/yr
Other Agriculture	_____ af/yr	Other Agriculture	_____ af/yr
Landscaping	incl. above af/yr	Landscaping	incl. above af/yr
Other Usage (List Separately):		Other Usage (List Separately):	
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr
TOTAL:	51.29 af/yr	TOTAL:	52.47 af/yr TOTAL:
	16,711,359 gallons**	TOTAL:	17,095828 gallons**

Is the proposed use less than the existing usage? ☐ Yes ☑ No ☐ Equal

Step #4:

Provide any other information that may be significant to this analysis. For example, any calculations supporting your estimates, well test information including draw down over time, historical water data, visual observations of water levels, well drilling information, changes in neighboring land uses, the usage if other water sources such as city water or reservoirs, the timing of the development, etc. Use additional sheets if necessary.

*All groundwater that is used for vineyard irrigation will be supplied by the irrigation well (about 120 gpm) that is located on the adjacent 27.68 acre parcel (APN 030-050-031) & PW effluent = 31.3 ac-ft/yr
*Winery Existing Use: 19.99 ac-ft (based on 2011 total water use)
Estimated Existing Process Water = 5.3 MGal/year (16.3 ac-ft)
Estimated Domestic Water = 1,745 gpd - 637,000 gal/year (1.95 ac-ft/yr)
Estimated Landscaping = 1,500 gpd - 550,000 gal/year (1.69 ac-ft)
*Winery Proposed Use: 6.87 MGal/year (21.17 ac-ft) projected
Estimated Process Water = 5.3 MGal/year (16.3 ac-ft)
Estimated Domestic Water = 5,100 gpd peak, 2,550 gpd avg - 1,022,000 gal/year (3.13 ac-ft/yr)
Estimated Landscaping = 1,500 gpd - 550,000 gal/year (1.69 ac-ft)

Conclusion: Congratulations! Just sign the form and you are done! Public works staff will now compare your projected future water usage with a threshold of use as determined for your parcel(s) size, location, topography, rainfall, soil types, historical water data for your area, and other hydrogeologic information. They will use the above information to evaluate if your proposed project will have a detrimental effect on groundwater levels and/or neighboring well levels. Should that evaluation result in a determination that your project may adversely impact neighboring water levels, a phase two water analysis may be required. You will be advised of such a decision.

Signature: _____ Date: 1/22/2014 Phone: (707) 527-0775

Attachment A: Estimated Water Use Guidelines

Typical Water Use Guidelines:

Primary Residence	0.5 to 0.75 acre-feet per year (includes some landscaping)
Secondary Residence	0.20 to 0.30 acre-feet per year
Farm Labor Dwelling	0.06 to 0.10 acre-feet per person per year

Non-Residential Guidelines:

Agricultural:

Vineyards	
Irrigation only	0.2 to 0.5 acre-feet per acre per year
Heat Protection	0.25 acre feet per acre per year
Frost Protection	0.25 acre feet per acre per year
Farm Labor Dwelling	0.06 to 0.10 acre-feet per person per year
Irrigated Pasture	4.0 acre-feet per acre per year
Orchards	4.0 acre-feet per acre per year
Livestock (sheep or cows)	0.01 acre-feet per acre per year

Winery:

Process Water	2.15 acre-feet per 100,000 gal. of wine
Domestic and Landscaping	0.50 acre-feet per 100,000 gal. of wine

Industrial:

Food Processing	31.0 acre-feet per employee per year
Printing/Publishing	0.60 acre-feet per employee per year

Commercial:

Office Space	0.01 acre-feet per employee per year
Warehouse	0.05 acre-feet per employee per year

RAYMOND VINEYARD AND CELLAR

PHASE I WATER AVAILABILITY ANALYSIS

ENCLOSURE B

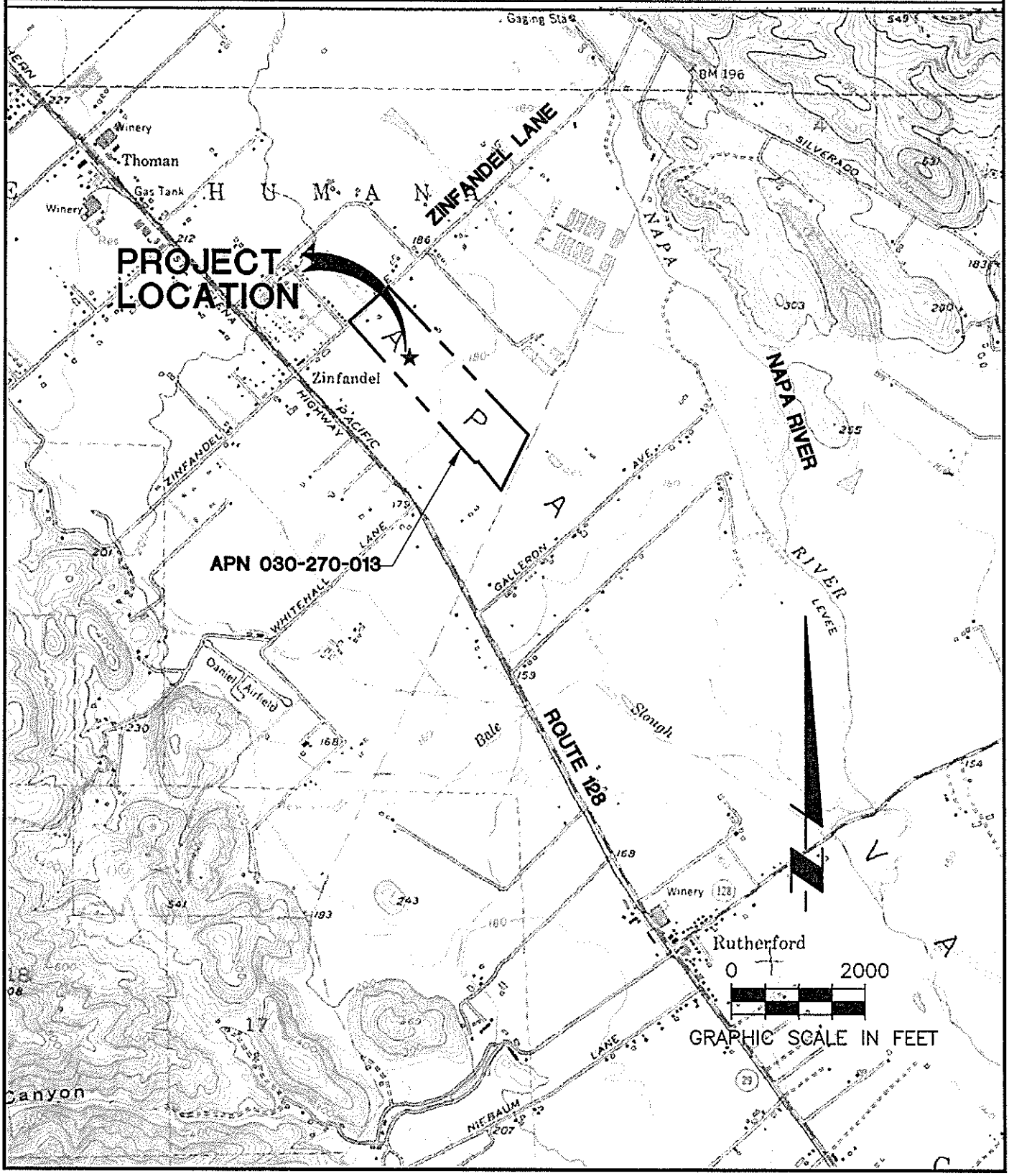
VICINITY MAP
PARCEL MAP
OVERALL SITE PLAN
DOMESTIC WELL LOG

RAYMOND WINERY AND CELLAR
849 ZINFANDEL LANE
ST. HELENA, CA 94574
APN 030-270-013

SUMMIT

VICINITY MAP

PROJECT NO. 2010080 DATE 05-09-2011
BY KO CHK GG SHT NO 1 OF 1



May 09, 2011 - 5:37pm P:\Project\2010\2010080 Raymond Winery UP-WaterWWFS and UP\CAD\Wastewater\10080-VICINITY MAP.dwg

SUMMIT ENGINEERING INC.
463 AVIATION BLVD. #200
SANTA ROSA, CA 95403
707.527.0775
FAX 707.527.0212

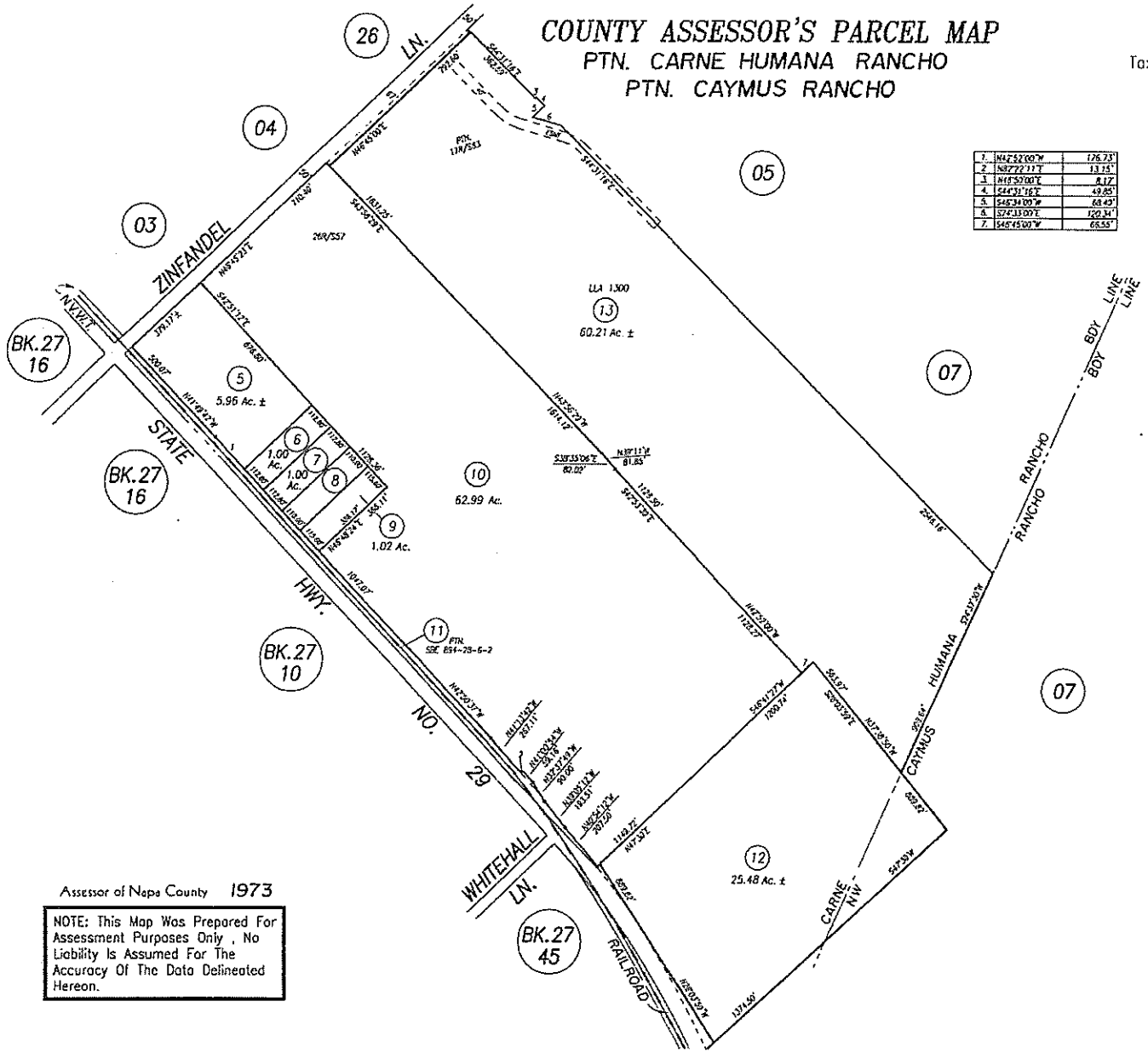
COUNTY ASSESSOR'S PARCEL MAP

PTN. CARNE HUMANA RANCHO

PTN. CAYMUS RANCHO

Tax Area Code
85001

30–27



1.	N42°52'00"W	176.73'
2.	N87°22'11"E	13.15'
3.	N15°50'00"E	8.17'
4.	S44°31'16"E	49.85'
5.	S45°34'00"W	68.49'
6.	S74°33'09"E	120.34'
7.	S45°45'00"W	66.55'

Assessor of Napa County 1973

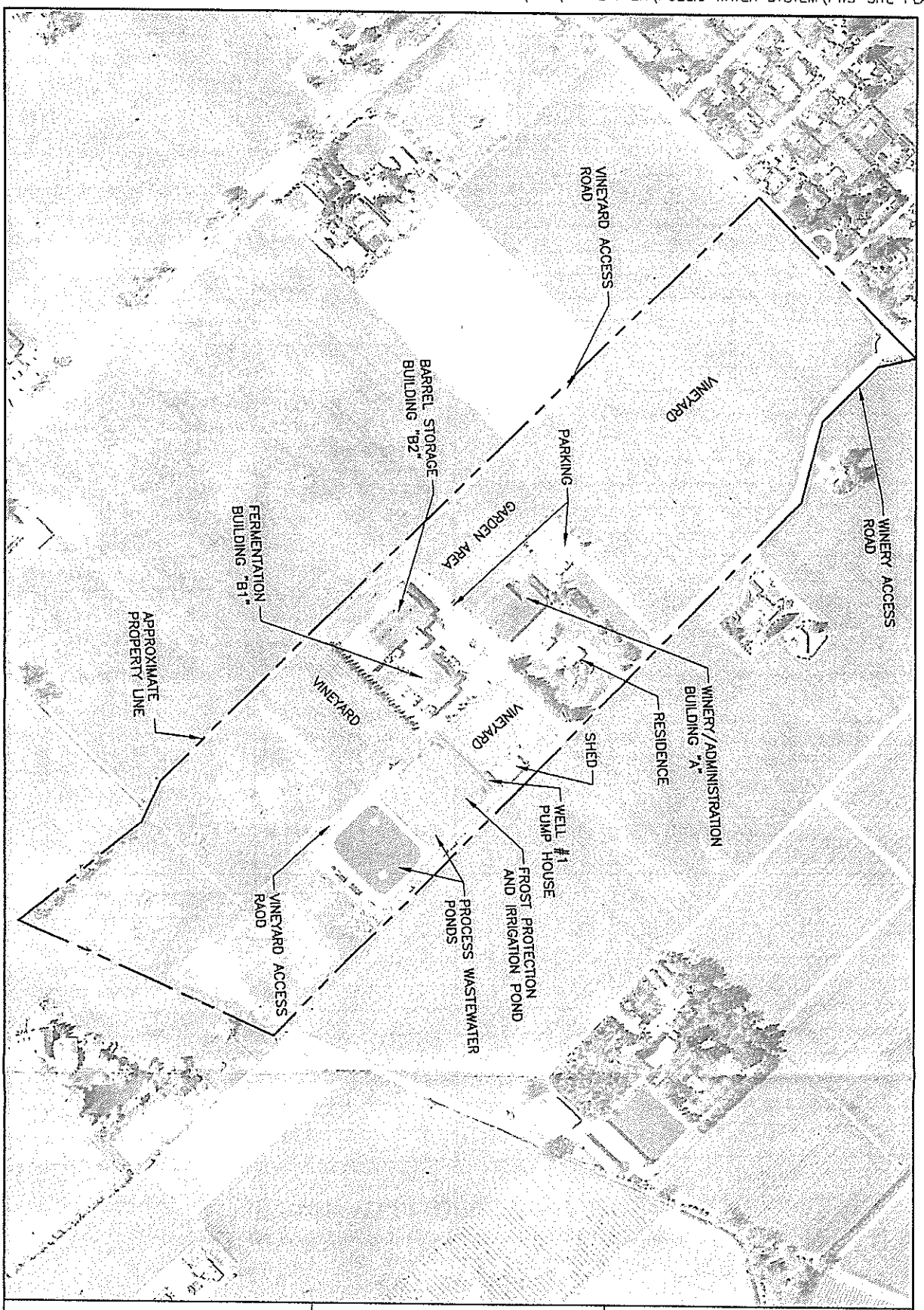
NOTE: This Map Was Prepared For Assessment Purposes Only , No Liability Is Assumed For The Accuracy Of The Data Delineated Hereon.

REVISION	DATE
	8-10-93
	6-16-94
270-10 PTN TO HWY CO	11-19-96
270-13 LLA	12-11-02
270-13 ESMT	2-5-07

30–27

PLOTTED ON: 6/27/2011 10:17 AM

P:\PROJECT\2010\2010080 RAYMOND WINERY UP-WATERWWFS AND UP\CAD\WASTEWATER\PUBLIC WATER SYSTEM\PWS-SITE PLAN.C



RAYMOND WINERY 849 ZINFANDEL LANE ST HELENA, CA 94574 APN: 030--270-031	SITE PLAN PROJECT NO. 2010080 DATE 06-27-2011 BY CN CHK GG SHT NO 1 OF 1	SUMMIT ENGINEERING INC. 463 AVIATION BLVD. STE 200 SANTA ROSA, CA 95403 www.summit-sr.com • 707.527.0775

RAYMOND VINEYARDS

DUPLICATE
Driller's Copy

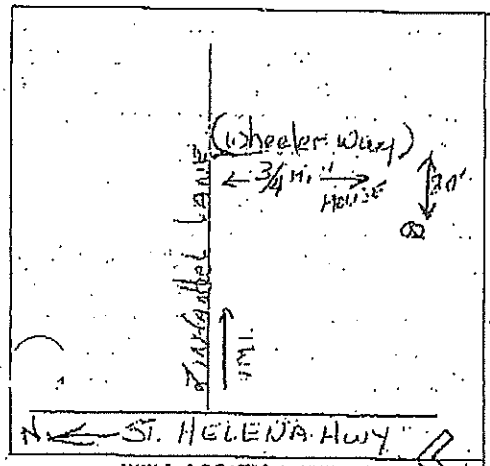
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 103316

of Intent No.
Local Permit No. or Date
State Well No.
Other Well No.

(1) OWNER: Name Raymond Vineyards
Address 849 Zinfandel Lane
City St. Helena Zip 94574

(2) LOCATION OF WELL (See instructions): County Napa Owner's Well Number 30-270-03
Well address if different from above same
Township Range Section
Distance from cities, roads, railroads, fences, etc.



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 14)

(4) PROPOSED USE:
Domestic ☐
Irrigation ☒
Industrial ☐
Test Well ☐
Stock
Municipal ☐
Other ☐

(5) EQUIPMENT:
Rotary ☒ Reverse ☐
Cable ☐ Air ☐
Other ☐ Bucket ☐

(6) GRAVEL PACK:
Yes ☒ No ☐ Size 3/8"
Diameter of hole 18"
Packed from 20 ft. to 410 ft.

(7) CASING INSTALLED:
Steel ☒ Plastic ☐ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	90	18"	188

(8) PERFORATIONS:
Type of perforation or size of screen machine

From ft.	To ft.	Slot size
90	410	1/8x3

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing grout

(10) WATER LEVELS:
Depth of first water, if known 92' ft.
Standing level after well completion 25' ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? Drillers
Type of test Pump ☐ Bailer ☒ Air lift ☒
Depth to water at start of test 25 ft. At end of test 100' ft.
Yield 100 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 410 ft. Depth of completed well 410 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	4	Soil
4	27	Clay gravel imb
27	38	Cemented gravel
38	83	clay gravel imb
83	92	Cemented gravel
92	96	Gravel
96	118	Blue clay gravel imb
118	139	Brown sandy clay & graved
139	143	Cemented gravel
143	183	Blue clay
183	225	Brown clay gravel imb
225	252	Cemented gravel
252	332	Sandy brown clay & gravel
332	351	Sandy brown clay
351	387	Cemented gravel
387	398	Gravel small boulders & gray sa clay
398	410	Sticky brown clay

Work started 8/1 19 78 Completed 8/11 19 78

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Signed (Well Driller)
NAME Doshier-Gregson Drilling, Inc (Person, firm, or corporation) (Typed or printed)
Address 5365 Napa-Vallejo Hwy
City Vallejo Zip 94590
License No. 291001 Date of this report 8/14/78

SUMMIT ENGINEERING, INC.
Project No. 2010080

RAYMOND VINEYARD AND CELLAR

PHASE I WATER AVAILABILITY ANALYSIS

ENCLOSURE C

DOMESTIC WATER DEMAND/SANITARY SEWAGE FLOWS

SUMMIT ENGINEERING, INC.	Raymond Vineyard Wastewater Feasibility Study Sanitary Sewage Flows	PROJECT NO. BY: CHK:	2010080 GG GG

SANITARY SEWAGE

WINERY

Average Non-Harvest Tasting Day w/o Event					Number of days per year
Employee (full-time)	60 x	15 gpcd	=	900 gal/day	231 days/year
Employee (part-time)	10 x	15 gpcd	=	150 gal/day	
Tasting Visitors	500 x	3 gpcd	=	1,500 gal/day	
Total			=	**2,550 gal/day**	
Average Harvest Tasting Day w/o Event					90 days/year
Employee (full-time)	60 x	15 gpcd	=	900 gal/day	
Employee (part-time)	30 x	15 gpcd	=	450 gal/day	
Tasting Visitors	500 x	3 gpcd	=	1,500 gal/day	
Total			=	**2,850 gal/day**	
Non-Harvest Peak Tasting w/ Event					
Employee (full-time)	60 x	15 gpcd	=	900 gal/day	
Employee (part-time)	10 x	15 gpcd	=	150 gal/day	
Tasting Visitors	500 x	3 gpcd	=	1,500 gal/day	
Peak Event (catered)	150 x	15 gpcd	=	2,250 gal/day	
Total			=	**4,800 gal/day**	
Harvest Average Tasting w/ Event					26 days/year
Employee (full-time)	60 x	15 gpcd	=	900 gal/day	
Employee (part-time)	30 x	15 gpcd	=	450 gal/day	
Tasting Visitors	500 x	3 gpcd	=	1,500 gal/day	
Peak Event (catered)	50 x	15 gpcd	=	750 gal/day	
Total			=	**3,600 gal/day**	
Harvest Average Tasting w/ Event					12 days/year
Employee (full-time)	60 x	15 gpcd	=	900 gal/day	
Employee (part-time)	30 x	15 gpcd	=	450 gal/day	
Tasting Visitors	500 x	3 gpcd	=	1,500 gal/day	
Peak Event (catered)	100 x	15 gpcd	=	1,500 gal/day	
Total			=	**4,350 gal/day**	
Harvest Average Tasting w/ Event					6 days/year
Employee (full-time)	60 x	15 gpcd	=	900 gal/day	
Employee (part-time)	30 x	15 gpcd	=	450 gal/day	
Tasting Visitors	500 x	3 gpcd	=	1,500 gal/day	
Peak Event (catered)	150 x	15 gpcd	=	2,250 gal/day	
Total			=	**5,100 gal/day**	
DESIGN FLOW			=	**5,100 gal/day**	**1,021,950 gal/year**

***portable toilets will be used for larger events greater than 150 persons**