

**WATER AVAILABILITY ANALYSIS FOR
MATTHES VINEYARD
MEADOWOOD ROAD, NAPA COUNTY, CA
APN 025-070-043**

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**BARTELT
ENGINEERING**

**WATER AVAILABILITY ANALYSIS FOR
MATTHES VINEYARDS
APN 025-070-043**

As required by Napa County Planning, Building & Environmental Services (PBES), this study outlines the availability of groundwater for the proposed vineyard development located at APN 025-070-043. An address has yet to be assigned to the subject parcel that is located off Meadowood Lane in St. Helena, CA.

PROJECT DESCRIPTION

The proposed project involves a Track I Vineyard Development and Erosion Control Plan (Plan) that includes the planting of three (3) separate vineyard blocks (Vineyard Block A, Block B1, and Block B2) located on the above referenced subject parcel that is located within the Agricultural Watershed (AW) zoning district of Napa County. Currently, the 40.0± acre subject parcel is mostly undeveloped with the exception of portions of two (2) existing vineyards that are owned and operated by Forman Vineyard (APN 025-070-029). The vineyard block in the northeast corner of the project parcel was planted under permit #98278-ECPA while the other vineyard block that crosses the east property line was planted pre-Conservation Regulations and granted through an Easement Agreement¹. The project will be constructed in one (1) phase and includes a disturbed area of approximately 13.2± acres with 11.1 ± acres of vineyard. Refer to the associated Plan prepared by Bartelt Engineering for the existing conditions and proposed development.

EXHIBITS

The associated USGS “Topographic Site Location Map” shows the project site and approximate property line locations. Information regarding the proposed project is shown on the Plan including the location of the existing wells. The approximate location of neighboring surface waters, springs, and wells is shown on the “Non-Project Well Location Map”. All maps and drawings mentioned above were prepared by Bartelt Engineering.

SITE FEATURES

The subject parcel is located approximately one and a half (1-1/2) miles northeast of the City of St. Helena, CA. The subject parcel consists of mostly undeveloped mixed chaparral, rock outcrops, and wooded and grass areas. An unpaved road, two (2) wells, and portions of the neighboring parcel’s vineyards can also be found on the parcel. A drainage course is located near the easterly side of the parcel and flows in a north to south direction toward the Napa River.

¹ The existing Easement Agreement is on record per Document No 00279.

WATER USE CRITERIA

TABLE 1: SCREENING CRITERIA	
Parcel Zoning	Agricultural Watershed (AW)
Project Parcel Locations	All Other Areas
Parcel Size: APN 025-070-043	40.0± acres
Water Use Criteria	Parcel Specific
Well and Spring Interference	Yes
Groundwater/Surface Water Interaction	No
Screening Tier	Tier 2 (modified per BOS Executive Order)

As summarized in Table 1, the subject parcel is located within the Agricultural Watershed (AW) Zoning District in “All Other Areas.” Per the PBES Water Availability Analysis (WAA)-Guidance Document dated May 12, 2015 the water use criteria for parcels located in “All Other Areas” that are not designated as a groundwater deficient area with well or spring interference shall complete a Tier 2 Analysis. There is no spring interference but a well interference analysis has been requested by Napa County staff to address impacts the existing project well may have on the existing non-project well (identified on the exhibit and plan as the “Forman Vineyard Well”) located on the project parcel but within an easement and operated by the neighboring parcel owner (APN 025-070-029). The water use criteria for the proposed project is considered parcel specific and must be considered in relation to the average annual recharge available to the project property.

Additionally, the Napa County Board of Supervisors (BOS) recently issued an Executive Order that enhanced the regulations regarding groundwater use which now requires that proposed groundwater recharge be based on the latest 10 year mean precipitation PRISM data (provided by Napa County) or that there is no net increase in current or approved water use. This analysis will show that the proposed project is feasible because it will not use more groundwater than what is recharged based on precipitation, soil, and geology.

This report presents a modified Tier 2 analysis which includes parcel specific information of groundwater recharge during an average precipitation year, existing and proposed water demand (use), and existing and proposed well locations, construction information, performance data (as known), and neighboring well interference which should satisfy the WAA and enhanced regulations set forth by the BOS.

SOURCE WATER INFORMATION

The subject parcel contains two (2) wells. One (1) of the existing wells (identified on the exhibit and plans as the “Forman Vineyard Well”) is located on the project parcel but within an Easement Area and (is assumed) provides irrigation water to the portion of the vineyard located on the project parcel as well as APN 025-070-029. The Forman Vineyard Well located on the project parcel is owned, operated, and maintained by the owner of parcel APN 025-070-029; therefore, it is unknown what the Forman Vineyard Well supplies water to, but it does not supply water to the proposed project. The recorded legal agreement

between the project parcel and the Forman Vineyard Well owners seems to suggest that the Forman Vineyard Well's use is subordinate to the project well since it can "not materially adversely impact the water supplies available to the" project parcel owner; therefore, any use of the Forman Vineyard Well will be limited to that amount remaining after the parcel's uses are determined by this report's demand and recharge volume calculations. Documentation of the Easement Agreement is attached for further information.

The second existing well (the project well) is located on the subject parcel outside of the Easement Area discussed previously and is proposed to supply the entire water demand for the proposed project.

Project Well Description

Per the Well Completion Report, the project well was constructed in 1995 by Huckfeldt Well Drilling and has a State of California Well Completion Report No. 550972. Per the attached Well Completion Report, the project well is reported to be constructed of five (5) inch diameter plastic pipe material to a completed depth of 415 feet with a 21 foot concrete annular seal. Refer to the attached Well Completion Report for additional information.

Yield Test

A yield test was performed on the project well at the time of drilling and the estimated yield was 75 gallons per minute (gpm) after a two (2) hour test.

A yield test was performed on the non-project (Forman Vineyard) well in 2017 when drilling was completed and the estimated yield was 10 gallons per minute (gpm) after a three (3) hour air lift test.

A yield test was performed by Oakville Pump Service, Inc in February 2022 on the project well and the non-project (Forman Vineyard) well static water levels were monitored and recorded. See the Estimated Neighboring Well Drawdown section below for additional details.

Neighboring Water Source(s)

Based on review of neighboring property records found online from the Napa County PBES Department and the California State Water Resources Control Board (SWRCB) Electronic Water Rights Information Mapping System (eWRIMS), there does not appear to be any neighboring groundwater wells, other than the Forman Vineyard Well (located on the project parcel but within the Easement Agreement) located within 500 feet of the project well nor any surface water sources located within 1,500 feet of the project well. Refer to the attached "Non-Project Well Location Map" prepared by Bartelt Engineering for the location of the existing project and non-project onsite wells, neighboring wells, and neighboring parcels.

Water Quality

Water samples were taken when the February 2022 well yield test was conducted and the results for Total Coliform and E. Coli were reported as non-detect.

GROUNDWATER SUBAREA

According to the Napa County Watershed Information & Conservation Council (WICC), the subject parcel is located within the Eastern Mountains Subarea of the Napa River Watershed. WICC describes the Eastern Mountain Subarea as having a wide variety of volcanic rock types, including andesitic, basaltic, and dacite lava flows as well as various tuffs and breccias. North and east of Lake Hennessey the Eastern Subarea also includes an exposure of the older, metamorphic Franciscan Complex.

The Napa County Groundwater Monitoring Program is currently testing five (5) wells between the Eastern and Western Mountain Subareas that include three (3) years of semi-annual measurements. Recent data from 2019, show groundwater depths vary from four (4) feet to 250 feet from the ground surface. Groundwater is reported to be of general good quality. Elevated levels of iron and manganese occur, along with lower than average pH indicating more acidity than groundwater in the Napa Valley Floor.

WATERSHED INFORMATION

The subject parcel is located within the Meadowood Creek sub-basin that is part of the Napa River Watershed. The subject parcel is not located within a municipal watershed nor a groundwater deficient area. The Meadowood Creek sub-basin includes 866± acres that is tributary to the Napa River.

GEOLOGICAL FEATURES

Per the United States Geological Service (USGS) Online Geodatabase, below is a summary of the geological features located on the subject parcel:

- Pilo-Pleistocene and Pilocene loosely consolidated deposits
- Tertiary pyroclastic and volcanic mudflow deposits, unit 1 (Sonoma Volcanic Field)

Per the Napa County Baseline Data Report (2005), Sonoma Volcanics consist of dacite, rhyolite, and andesite rock types. These rocks are exposed over much of Napa Valley and are the second most commonly exposed rocks in Napa County. In terms of groundwater resources, tuffaceous units within the Sonoma Volcanics host significant volumes of groundwater under both confined and unconfined conditions. Furthermore, surficial deposits consist of the formation of stream channel deposits, alluvium, terrace deposits, alluvial fan deposits, landslide deposits, basing deposits, bay mud, and artificial fill. In terms of groundwater resources, surficial deposits are reported to be typical pathways for groundwater recharge and, depending on the properties and depths of the surficial deposits, may hold groundwater to varying capacity. Within the Napa Valley floor, the majority of the groundwater is hosted within these deposits.

ALL OTHER AREAS ESTIMATED GROUNDWATER RECHARGE

The allowable water allotment for the subject parcel is determined by estimating groundwater recharge. Groundwater recharge can be estimated by understanding the soil

properties and geological materials present and their ability to percolate groundwater to the saturated zone of the aquifer. Water flowing into the ground consists primarily of recharge from precipitation, surface water seepage, and artificial recharge. Water flowing out of the ground primarily involves extraction from wells, spring discharge, and evapotranspiration. In Napa County, precipitation has been established as the primary source of groundwater (Kunkel and Upson, 1960). Since the subject parcel is located in the Eastern Mountains Subarea of the Napa River Watershed, with watercourses located in the proximity of the project area, direct infiltration from rainfall is likely to be the most significant factor for groundwater recharge. Without having site recorded data showing the change in groundwater, this analysis models groundwater recharge as a percent of rainfall. The amount of rainfall that is estimated to recharge groundwater is impacted by several factors. Some of these factors include precipitation, soil properties, and underlain geological materials.

Precipitation

Precipitation, or rainfall, data used in this analysis was provided by the Graphical Information System (GIS) portal of the Napa County PBES website. The portal provides a map of the average rainfall amounts across Napa County for the most current 10-year duration based on the data from the PRISM Climate Group at Oregon State University. PRISM provides spatial climate datasets which span over prolonged periods of time and provide insight into normal water years. The average annual rainfall for the subject parcel² is 30.89 inches (refer to the attached Table I).

Hydrologic Soil Groups

Per the United States Department of Agriculture (USDA), hydrologic soil groups (HSG) are based on estimated potential for runoff. Soils are assigned four (4) groups (A, B, C and D) depending on the ability of water to infiltrate the soil. Group A soils have a high infiltration rate (low runoff potential) and group D soils have very slow infiltrative rates (high runoff potential). The infiltration rate is also affected by site slopes; higher slopes limit the time water is available for infiltration.

A custom soils report was generated using the Natural Resources Conservation Service (NRCS) Web Soil Survey for the subject parcel. The Survey shows that two (2) different soil types and land slopes are present with the following characteristics:

- Forward Silt Loam (Map Unit 140), 12% to 57% slopes, HSG C, 53% of the subject parcel.
- Rock outcrop-Kidd complex (Map Unit 177), 50% to 75% slopes, HSG D, 47% of the subject parcel.

The subject parcel includes a HSG “C” and “D” ratings with “slow to very slow” infiltrative properties. Refer to the attached Custom Soil Resource Report for Napa County, California Matthes Vineyards for more information regarding soil properties.

² An average annual precipitation value was determined because the parcel spans four (4) PRISM resolution grids each having a different value (30.81, 30.82, 30.93, and 31.02)

Recharge Area

The recharge area on the subject parcel is limited to the areas with ground slopes less than or equal to 30% where precipitation is more likely to infiltrate through the soil and reach the groundwater aquifer. Precipitation on ground slopes greater than 30% are more likely to runoff and not contribute to groundwater recharge. The subject parcel has a total area of 40.0 acres with 24.7 acres having ground slopes less than or equal to 30%. This area (24.7 acres) will be used as the recharge area for estimating groundwater recharge. Refer to the attached Slope Analysis – 30% Slope Exhibit by Bartelt Engineering included with the Plan for additional information.

Geological Comparison for Estimating Recharge Rate

Groundwater recharge can be estimated by understanding the soil properties and geological materials present and their ability to percolate groundwater to the saturated zone of the aquifer. Sonoma Volcanics are the primary water-bearing geological formation. Based on review of several groundwater publications, a percent of precipitation is assumed to be available for groundwater recharge. Below is a summary of these references and comparison to the geological materials and HSGs present on the subject parcel:

- The “Santa Rosa Plan Watershed Groundwater Management Plan 2014” prepared by the Santa Rosa Plan Basin Advisor Panel includes a specified yield of 0 to 15 percent for Sonoma Volcanics. Specified yield refers to the amount of water contained in the saturated zone that flows by gravity and is available to wells (Johnson 1967).
- The “Napa-Sonoma Valley Groundwater Basin, Sonoma Valley Subbasin” from the California Groundwater Bulletin 118 describes Sonoma Volcanics as having specific yields varying from 0 to 15 percent (DWR 1982).

Based on the methodology utilized in these studies, groundwater recharge for the subject parcel, which predominantly includes Sonoma Volcanics, could be 15% of the annual precipitation. The volume of rainwater that is estimated to be available for groundwater recharge is calculated below:

$$\begin{aligned}\text{Annual recharge (acre-ft/yr)} &= \text{Recharge area (acres)} \times \text{Precipitation (ft)} \times \text{Recharge rate} \\ &= 24.7 \text{ acres} \times (30.89 \text{ in} \times 1 \text{ ft}/12 \text{ in}) \times 15\% \\ &= 9.6 \text{ acre-ft/yr}\end{aligned}$$

The annual recharge for the subject parcel is estimated to be 9.6 acre-feet per year based on groundwater recharge.

ESTIMATED WATER DEMAND

The total water demand for the existing and proposed uses for the project is calculated based on the Guidelines for Estimating Residential and Non-residential Water Use from the WAA Guidance Document (2015). The existing water demand (see Table II) under the project parcel owner’s control is estimated to be zero (0.00) acre-feet per year for the mostly undeveloped parcel. The proposed water demand (see Table III) under the project parcel owner’s control and includes water for the vineyard development proposed under this

project and a primary residence which is not associated with this project, is estimated to be 9.18 acre-feet per year. It is unknown what or how much water the Forman Vineyard Well supplies; but in any case, it is anticipated that the combined total will not exceed the normal year recharge rate through the use of water meters and well monitoring.

ESTIMATED NEIGHBORING WELL DRAWDOWN

The location of the project well is approximately 350 feet west of the non-project (Forman Vineyard) well located on the subject parcel. Per the Water Well Drillers Report³ for the non-project (Forman Vineyard) well, shows it was constructed with a six (6) inch diameter casing, to a total depth 105 feet, and with two screened intervals between 230 to 350 and 370 to 390 feet below surface elevation (BSE). At the time the well was constructed, the yield was reported to be 10 gallons per minute (gpm). Refer to the attached project and non-project well documentation and exhibit for more information.

Information from the project and non-project well application/permit/completion documentation and soil properties from the subject parcel were used to estimate the well drawdown at the non-project (and/or neighboring) well. The project well is estimated to have a pumping rate of 55 gallons per minute (gpm). The project well and non-project well are assumed to be located within a confined aquifer which results in the most conservative analysis.

Using a very low Hydraulic Conductivity Class, which is consistent with the WAA Guidance Document's Table F-5, the estimated drawdown at the non-project (Forman Vineyard) well after one (1) day of continuous pumping of the project well is estimated to be 3.6 feet which is less than the allowable 10 feet criteria; therefore, pumping of the project well is not anticipated to negatively impact the existing non-project (neighboring) well. The following table summarizes the attached Table IV which estimates well drawdown using the Theis Equation⁴.

³ Well Completion Report No. e0355773 for the non-project well (Forman Vineyard Well).

⁴ Drawdown after one (1) day is calculated using the Theis Equation and a series calculation of $W(u)$ to u_6 .

TABLE 2: CALCULATED NON-PROJECT WELL DRAWDOWN

Pumping rate = 55 gpm

 Aquifer thickness ⁵= 80 feet

Time = 1 day

Non-Project / Neighboring Well Label	Specific Storage ⁶	Hydraulic Conductivity, K, Class ⁷	Hydraulic Conductivity Value ⁷ (ft/day)	Radial Distance Between Wells (feet)	Calculated Well Drawdown (feet)
Forman Vineyard	0.0005	very low	10	350	3.6

Furthermore, a recent yield test was performed by Oakville Pump Service, Inc in February 2022 on the project well and the non-project (Forman Vineyard) well water levels were monitored and recorded. The estimated yield of the project well was a minimum 55 gallons per minute (gpm) after a four (4) hour test. The project well showed a water level drop of less than six (6) inches with a five (5) minute recovery time while the non-project well did not show any drawdown during the four (4) hour test period. Refer to the attached report for additional information.

SUMMARY

The groundwater demand as a result of the proposed vineyard development is estimated to increase from the current rate of zero (0.00) acre-feet per year to 9.18 acre-feet per year. Domestic and vineyard irrigation water will be sourced from the existing project well. The existing project well yield rate is expected to be capable of meeting the proposed water demand. Both the project and the non-project well will be metered and monitored so that their combined total water draw does not exceed the total parcel recharge rate based on the 10-year average precipitation value. The non-project (Forman Vineyards) well may be shutoff if the project owner's groundwater demands require all of the available recharged groundwater amount.

The available water for the proposed project is the estimated groundwater recharge for the subject parcel that is located in "All Other Areas" of Napa County. Groundwater recharge is estimated based on published recharge rates from precipitation based on underlying geological features. The available water for the subject parcel is estimated to be 9.6 acre-feet per year based on the 10-year average rainfall data.

The non-project (Forman Vineyard) well is located within the 500 feet zone of influence of the project well. Based on well drilling documentation, PBES criteria for calculating well drawdown, and using the Theis Equation, pumping of groundwater from the project well is

⁵ Aquifer thickness is based on the reported perforation interval shown on the Well Completion Report dated September 29, 1995 for the project well. The non-project (Forman Vineyard) Well Completion Report dated December 29, 2016 shows a maximum screen depth of 390 feet BSE which is 25 feet shallower than the project well's maximum screened depth of 415 feet. Furthermore, the project well's screened length of 80 feet is greater than the screened length of the non-project well along the same BSE range (335-415).

⁶ Referenced from Table F-8: Simulated effect of a project well on water levels at an existing non-project well after one day of pumping at the stated flow rate in a confined aquifer of the WAA-Guidance Document.

⁷ Referenced from Table F-5 for a low Hydraulic Conductivity, K, class soil from the WAA Guidance Document.

not anticipated to negatively impact the existing non-project well beyond what is allowable under the WAA guidance Document.

CONCLUSION

This analysis demonstrates that the groundwater demand for the proposed project can feasibly be sourced by the existing project well. Furthermore, the estimated groundwater recharge based on the 10-year average precipitation value exceeds the proposed water demand for the proposed project. The proposed project satisfies the Napa County Water Availability Analysis Tier 2 Water Use Criteria and Spring Interference Criterion and the Napa County Board of Supervisors recently mandated enhanced regulations that propose groundwater use not exceed the recharge rate. Finally, well interference thresholds were satisfied resulting in the proposed project satisfying the Tier 2 Water Use Criterion of the Napa County Water Availability Analysis.

ATTACHMENTS

Non-Project Well & Natural Spring Map

Slope Analysis (included in Track I Vineyard Development and Erosion Control Plan)

Table I – Water Availability

Table II – Existing Water Demand

Table III – Proposed Water Demand

Table IV – Well Interference Analysis

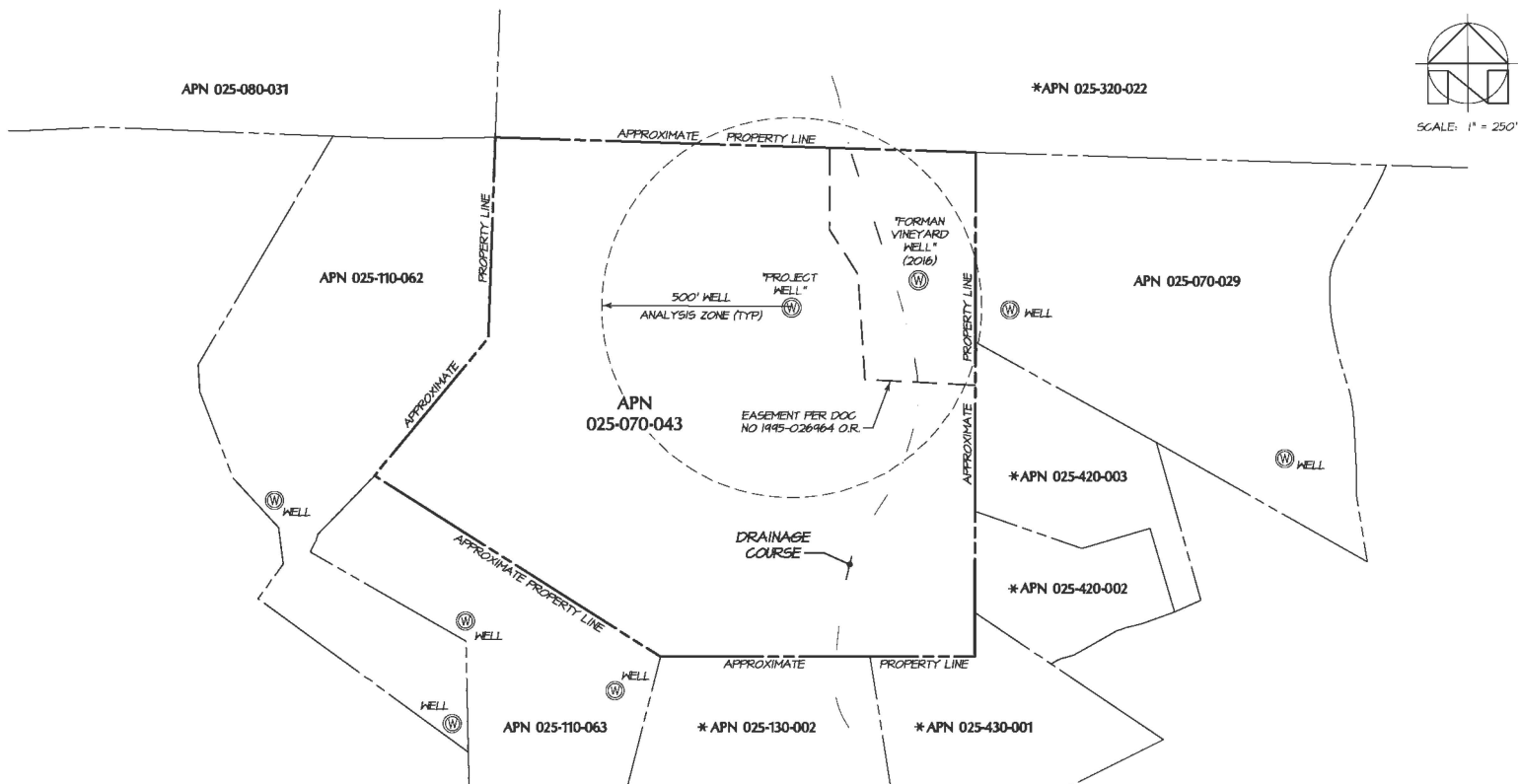
Well Completion Reports

Well Yield Test

Easement Area Documentation

REFERENCES

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NON-PROJECT WELL & NATURAL SPRING MAP

SCALE: 1" = 250'

NOTES:

* NO RECORDED WELL INFORMATION FOUND FOR THIS PARCEL.

WELL LOCATIONS ARE APPROXIMATE AND ARE BASED ON DATA OBTAINED FROM NAPA COUNTY ENVIRONMENTAL HEALTH DIVISION RECORDS. WELL LOCATION RECORDS VARY IN ACCURACY. LOCATION OF WELLS SHOULD BE FIELD VERIFIED.

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Matthes Vineyards
St. Helena, CA 94574
APN 025-070-043
Job No. 20-01
February 2023 - Revised
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Matthes Vineyards
Water Availability
Table I

Total Parcel Size: 40.0 acres
Parcel Area w/ Slopes < 30%: 24.7 acres

<i>ESTIMATED GROUNDWATER RECHARGE - ALL OTHER AREAS</i>					
Scenario	Rainfall ¹		Sonoma Volcanics Recharge Area ²	Sonoma Volcanics Recharge Rate	Estimated Recharge
	(inches)	(feet)	(acres)	(%)	(acre-ft/year)
10-Year Average	30.89	2.6	24.7	15%	9.6

- 1) Napa County PBES Department GIS PRISM data for Water Years 2012-2021.
- 2) Portion of All Other Areas that appears to be underlain with Sonoma Volcanics, refer to attached Geological Site Location Map for more information

Matthes Vineyards
Existing Water Demand
Table II

Description	Water Usage Rate ¹	Water Demand (acre-feet/year)
<u>Residential</u>		
Primary Residence ²	0.00 acre-feet/acre-year	-
Secondary Residence		-
Farm Labor Dwelling	0.2-0.3 acre-feet/acre-year	-
<u>Agricultural</u>		
Vineyards		
Irrigation Only (0 acres)	0.50 acre-feet/acre-year	0.00
Heat Protection (0 acres)	0.25 acre-feet/acre-year	0.00
Frost Protection (0 acres)	0.25 acre-feet/acre-year	-
Irrigated Pastures	4.0 acre-feet/acre-year	-
Orchards	4.0 acre-feet/acre-year	-
Livestock (sheep or cows)	0.01 acre-feet/acre-year	-
<u>Winery³</u>		
Process Water	2.15 acre-feet/100,000 gallon of wine	0.00
Domestic & Landscaping	Refer to Approved & Proposed WE	0.00
Employees	15 gallons/per shift	0.00
Tasting Room Visitation	3 gallons per visitor	0.00
Events and Marketing, with on-site catering	15 gallons per visitor	0.00
<u>Industrial</u>		
Food Processing	31 acre-feet/employee-year	-
Printing/Publishing	0.6 acre-feet/employee-year	-
<u>Commercial</u>		
Office Space	0.01 acre-feet/employee-year	-
Warehouse	0.05 acre-feet/employee-year	-
<i>Estimated Existing Water Demand (acre-feet/year):</i>		0.00
<i>Estimated Existing Water Demand (gallons/year):</i>		0
1) Water usage rates referenced from <i>Appendix B: Estimated Water Use of Specified Land Use</i> from Napa County WAA-Guidance Document (2015) unless noted otherwise		

Matthes Vineyards
Proposed Water Demand
Table III

Description	Water Usage Rate ¹	Water Demand (acre-feet/year)
<u>Residential</u>		
Primary Residence ²	0.85 acre-feet/acre-year	0.85
Secondary Residence		0.00
Farm Labor Dwelling	0.2-0.3 acre-feet/acre-year	0.00
<u>Agricultural</u>		
Vineyards		
Irrigation Only (11.1 acres)	0.50 acre-feet/acre-year	5.55
Heat Protection (11.1 acres)	0.25 acre-feet/acre-year	2.78
Frost Protection (0 acres)	0.25 acre-feet/acre-year	-
Irrigated Pastures	4.0 acre-feet/acre-year	-
Orchards	4.0 acre-feet/acre-year	-
Livestock (sheep or cows)	0.01 acre-feet/acre-year	-
<u>Winery</u>		
Process Water	2.15 acre-feet/100,000 gallon of wine	-
Domestic & Landscaping	0.50 acre-feet/100,000 gallon of wine	-
Employees	15.00 gallons/per shift	-
Tasting Room Visitation	3.00 gallons per visitor	-
Events and Marketing, with on-site catering	15.00 gallons per visitor	-
<u>Industrial</u>		
Food Processing	31 acre-feet/employee-year	-
Printing/Publishing	0.6 acre-feet/employee-year	-
<u>Commercial</u>		
Office Space	0.01 acre-feet/employee-year	-
Warehouse	0.05 acre-feet/employee-year	-
<i>Estimated Proposed Water Demand (acre-feet/year):</i>		9.18
<i>Estimated Proposed Water Demand (gallons/year):</i>		2,991,312
1) Water usage rates referenced from <i>Appendix B: Estimated Water Use of Specified Land Use</i> from Napa County WAA-Guidance Document (2015) unless noted otherwise. 2) Includes pool without cover.		

Matthes Vineyard
Well Interference Analysis
Table IV

NON-PROJECT WELL DRAWDOWN			
<i>Project Well</i>			
Constant pumping rate	Q =	55	gpm
Well diameter	Ø =	5	inch
Total depth of well	=	415	feet
Screened interval	=	80	feet
<i>Non-Project Well</i>			
APN	025-070-043 (Forman)		
Constant pumping rate	Q =	10	gpm
Well diameter	Ø =	6	inch
Total depth of well	=	105	feet
Screened interval	=	60	feet
<i>Calculated Drawdown</i>			
Aquifer Thickness ¹	D =	80	ft
Hydraulic Conductivity ²	K _h =	10	ft/day
Aquifer Transmissivity	T =	800	ft ² /day
Pumping Rate	Q =	55	gpm
	=	10,588	ft ³ /day
Radial distance from well	r =	350	feet
Time since pumping began	t =	1	day
Storage coefficient ³	S =	0.0005	
Allowable Drawdown	=	10	ft
Calculated Drawdown	=	3.6	ft

Notes:

- 1) Aquifer thickness is assumed to be equal to the project well screened interval depth.
- 2) Referenced from Table F-5 for a very low Hydraulic Conductivity, K, class soil from the WAA Guidance Document (2015) for calculations with well interference.
- 3) The soil water storage coefficient represents the most conservative value referenced in the WAA Guidance Document (2015) and assumes the wells are in a confined aquifer.
 - > Constant pumping rate based on well test performed by Oakville Pump Service, Inc on February 4, 2020 which consisted of a four (4) hour constant pumping rate resulting in a stabilized flow of 55 GPM.
 - > See the Water Well Drillers Report No. 119666 for information on the Forman Well.
 - > Non-Project well drawdown is calculated using the Theis Equation as described in the WAA Guidance Document (2015).
 - > The Constant Pumping Rate Value for the well on APN 025-070-043 (Forman) is based on industry standard estimates for vineyard irrigation (assumed use).

QUADRUPPLICATE
For Local Requirements

Page 1 of 1

Owner's Well No. _____

Date Work Began 9-29-95, Ended 10-4-95

Local Permit Agency Napa County Environmental Mgmt.

Permit No. 40420 Permit Date 9-29-95

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **550972**

#5668
DWR USE ONLY - DO NOT FILL IN
RECEIVED
STATE WELL NO./STATION NO.
OCT 26 1995
LATITUDE _____ LONGITUDE _____
ENVIRONMENTAL AGENCY
APN/TRS/OTHER _____

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL _____ HORIZONTAL _____ ANGLE _____ (SPECIFY)

DEPTH TO FIRST WATER 340 (Ft.) BELOW SURFACE

DESCRIPTION

Describe material, grain size, color, etc.

DEPTH FROM SURFACE		
Ft.	to	Ft.
0	65	lt. brown clay with embedded gravel
65	115	lt. gray clay with embedded gravel
115	195	lt. br. clay with embedded gravel
195	290	gray clay with gravel
290	300	shale
300	310	fractured shale
310	350	shale shale
350	385	sandstone/greenstone mix
385	388	fractured greenstone
388	420	sandstone/greenstone mix

RECEIVED

OCT 25 1995

DEPT OF
ENVIRONMENTAL MANAGEMENT

WELL OWNER

Name _____

Mailing Address _____

CITY _____ STATE _____ ZIP _____

WELL LOCATION

Address Oakwood off Howell Mtn.

City St. Helena

County Napa

APN Book 25 Page 070 Parcel 043

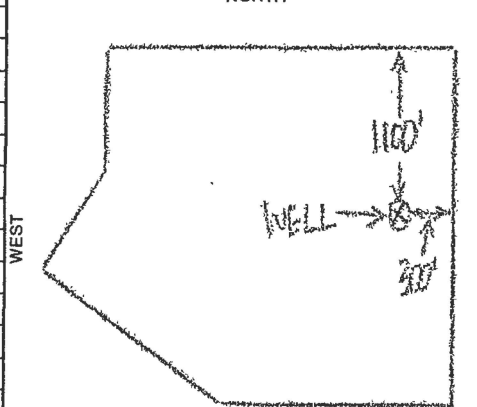
Township _____ Range _____ Section _____

Latitude _____ Longitude _____

DEG. MIN. SEC. NORTH Longitude DEG. MIN. SEC. WEST

LOCATION SKETCH

NORTH



SOUTH

Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR

_____ Deepen
_____ Other (Specify)

_____ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USE(S)

(✓) _____

_____ MONITORING

WATER SUPPLY

☒ Domestic

_____ Public

_____ Irrigation

_____ Industrial

_____ "TEST WELL"

_____ CATHODIC PROTECTION

_____ OTHER (Specify)

DRILLING METHOD Rotary air FLUID _____

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 296 (Ft.) & DATE MEASURED 10-4-95

ESTIMATED YIELD 75 (GPM) & TEST TYPE air lift

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN N/A (Ft.)

* May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 420 (Feet)
TOTAL DEPTH OF COMPLETED WELL 415 (Feet)

DEPTH FROM SURFACE			BORE-HOLE DIA. (Inches)	CASING(S)							DEPTH FROM SURFACE		ANNULAR MATERIAL			
				TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS			SLOT SIZE IF ANY (Inches)	TYPE		
Ft.	to	Ft.		BLANK	SCREEN	CON- DUCTOR	FILL PIPE				CE- MENT (✓)	BEN- TONITE (✓)		FILL (✓)	FILTER PACK (TYPE / SIZE)	
0	25	10									0	21	X			concrete
25	420	8									21	415			X	pea gravel
0	335		X					plastic	5	SDR-21						
335	415			X				plastic	5	SDR-21	.032					

ATTACHMENTS (✓)

- _____ Geologic Log
- _____ Well Construction Diagram
- _____ Geophysical Log(s)
- _____ Soil/Water Chemical Analyses
- _____ Other _____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME HUCKFELDT WELL DRILLING

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

2110 Penny Lane

Napa

CA 94559

ADDRESS

CITY

STATE

ZIP

Signed

[Signature]

10-5-95

439-746

WELL DRILLER/AUTHORIZED REPRESENTATIVE

DATE SIGNED

C-57 LICENSE NUMBER

Owner's Well No. 1-2017

Date Work Began 10/24/2017, Ended 11/30/2017

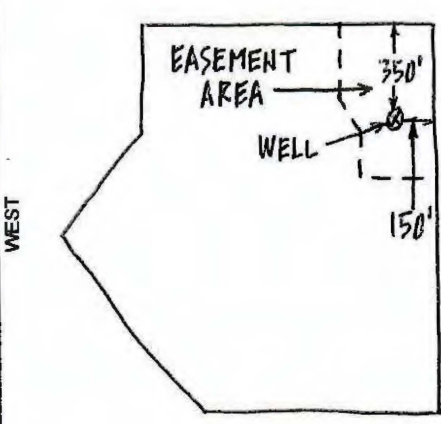
Local Permit Agency Napa County Environmental Mgmt

Permit No. OE16-00016 Permit Date 12/29/2016

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. **e0355773**

DWR USE ONLY -- DO NOT FILL IN	
STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG				WELL OWNER	
ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE _____ (SPECIFY)				Name <u>Forman Vineyards</u>	
DEPTH FROM SURFACE Ft. to Ft.				Mailing Address <u>P.O. Box 343</u>	
DRILLING METHOD <u>ROTARY</u> FLUID <u>BENTONITE</u>				City <u>St. Helena</u> CA <u>94574</u>	
DESCRIPTION Describe material, grain, size, color, etc.				WELL LOCATION	
0 40 TAN VOLCANIC TUFF & BOULDERS				Address <u>Big Rock Road</u>	
40 50 TAN ASH				City <u>St. Helena</u> CA	
50 55 DARK BROWN ASH				County <u>Napa</u>	
55 60 TAN SANDY ASH				APN Book <u>025</u> Page <u>070</u> Parcel <u>043</u>	
60 105 SAND & GRAVEL				Township _____ Range _____ Section _____	
105 145 COURSE SANDY TAN ASH				Latitude _____	
145 160 GRAY, TAN ASH				DEG. MIN. SEC. DEG. MIN. SEC.	
160 235 DARK GRAY CLAY				LOCATION SKETCH	
235 415 GRAY VOLCANICS WITH ASH LAYERS				NORTH	
CONTINUED CASING LAYOUT					
370 390 SCREEN PVC 5" .032 SLOT					
390 395 BLANK PVC 5"					
				ACTIVITY (✓)	
				☒ NEW WELL	
				MODIFICATION/REPAIR	
				☐ Deepen	
				☐ Other (Specify) _____	
				DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")	
				PLANNED USES (✓)	
				WATER SUPPLY	
				☒ Domestic ☐ Public	
				☒ Irrigation ☐ Industrial	
				MONITORING _____	
				TEST WELL _____	
				CATHODIC PROTECTION _____	
				HEAT EXCHANGE _____	
				DIRECT PUSH _____	
				INJECTION _____	
				VAPOR EXTRACTION _____	
				SPARGING _____	
				REMEDIATION _____	
				OTHER (SPECIFY) _____	
TOTAL DEPTH OF BORING <u>415</u> (Feet)				WATER LEVEL & YIELD OF COMPLETED WELL	
TOTAL DEPTH OF COMPLETED WELL <u>395</u> (Feet)				DEPTH TO FIRST WATER <u>N/A</u> (Ft.) BELOW SURFACE	
				DEPTH OF STATIC WATER LEVEL <u>311</u> (Ft.) & DATE MEASURED <u>11/30/2017</u>	
				ESTIMATED YIELD * <u>30</u> (GPM) & TEST TYPE <u>AIR LIFT</u>	
				TEST LENGTH <u>3</u> (Hrs.) TOTAL DRAWDOWN <u>N/A</u> (Ft.)	
				May not be representative of a well's long-term yield.	

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
		TYPE (✓)	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)		CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 to 200	12						0 to 3	✓			CONCRETE
200 to 415	9						3 to 55		✓		GROUT
0 to 230		✓	PVC F480	5	SDR-21		55 to 395			✓	PEA GRAVEL
230 to 350			PVC F480	5	SDR-21	.032					
350 to 370		✓	PVC F480	5	SDR-21						

ATTACHMENTS (✓) — Geologic Log — Well Construction Diagram — Geophysical Log(s) — Soil/Water Chemical Analysis — Other _____ ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.	CERTIFICATION STATEMENT	
	I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.	
	NAME <u>HUCKFELDT WELL DRILLING, INC.</u> (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)	
	2110 Penny Lane Napa CA 94559 ADDRESS CITY STATE ZIP Signed _____ DATE SIGNED <u>12/05/17</u> 439-746 WELL DRILLER/AUTHORIZED REPRESENTATIVE C-57 LICENSE NUMBER	



OAKVILLE PUMP SERVICE, INC.

2310 Laurel Street, Suite #1
Napa, CA 94559
Phone (707) 944-2471
License # 744958 / oakvillepump.com

Report Date:	2/4/22	Report By:	W. Lutz	Tested By:	V. Avina	Job#:	21K 2287
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Property Information

Property Location:	Brittany Lane, St. Helena CA	Parcel #	25-070-043
Buyers Name:			
Buyers Agent or Rep:			
Property Owner Name:	William & Leigh Matthes		
Listing Agent or Owner Rep:	Greg Desmond	(707)287-5957	consult@greg-desmond.com

Well & Pump System Information:

Well ID & Location on Property	Well Depth:	Pump Setting:	Casing Type & Size:	Sanitary Well Seal:
(1995 Well) 38.1833°, -122.4506°	415'	400' (OPS Test Pump)	5" PVC	N/A Test Equipment
Submersible Pump / HP / GPM:	Motor HP, Voltage, Phase:	Pipe Size & Type:	Check Valve Type:	Annular Seal / Pad:
65GPM	7.5HP 230 VAC 3 Ph	2" Galv		Yes, 18"x18"
Submersible Pump Filtration:	Sub Pump Misc Equipment Notes:			
N/A	OPS Test Pipe, pump and wire used to perform this well test as there is no permanently installed pump equipment in this well.			

Water Analysis Testing:

Sample Type:	Date Sampled:	Completion Date:	Lab Vender:	Notes:
N/L Watercheck with Pesticides	2/3/22		National Testing Labs	

Well Yield Test (Log on second page)

Date of Test:	Well Type:	Static Water Lvl:	Pumping Water Lvl:	Specific Capacity:	Well/Pump Yield:
2/3/22	not currently used	318.3'	318.65	N/A	at least 55 GPM
Start Time:	Test Duration:	Water Level Recovery:	Recovery Time:	Total Gallons Pumped:	
11:40 to 15:40	4 Hours	recovered to: 318.3'	5 minutes	13177	

The well yield test is based upon duration and conditions existing at time of testing. The well production may and will change based upon time of year. The well output may be limited to the size of the pump and the well yield test may not properly represent the true capacity of the well.

Observations:

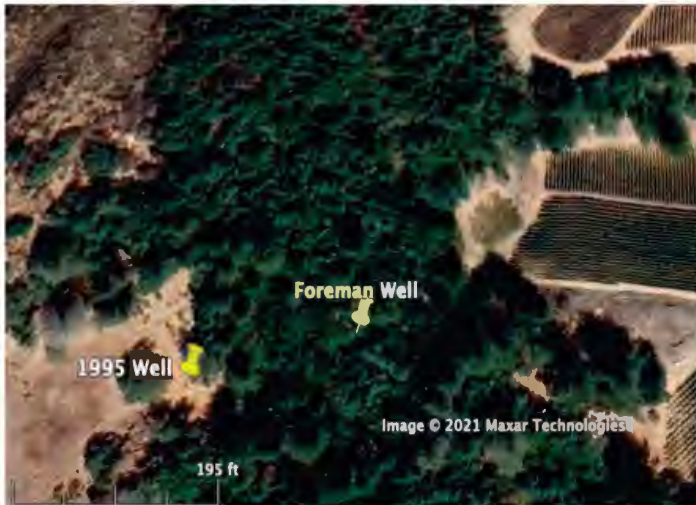
- Foreman well water level monitored (see pictures below) and offline during test. Probe became stuck after 15:20 and additional measurements were not able to be performed.
- This well is capable of producing significantly more water than the installed test pump is capable of removing.
- The largest pump available to fit in a 5" casing is a 10 HP 480 Volt 3 Ph and would produce a maximum ~70-75 GPM open discharge at the well head.

Well Test Log

Time:	Water Level (ft)	GPM Flow	Water Quantity Flowed (gals)	Basic Water Quality (Visual Color-Sand)	Foreman Well Water Level (ft)	Notes:
11:40	318.3	~55	0	Turbid, grey with sand		
11:50	318.6	55.5	555	Clear, sand		
12:00	318.65	54.5	545	Clear, minor sand		
12:20	318.65	54.8	1095	Clear		
12:35					314.6	
12:45	318.65	54.5	1363	Clear, minor sand		
13:00	318.65	54.5	817	Clear, minor sand		
13:25	318.65	54.5	1362	Clear		
13:40					314.6	
13:50	318.65	54.6	1365	Clear, minor sand		
14:10	318.65	55.2	1104	Clear, minor sand		
14:30	318.65	55.2	1104	Clear, minor sand		
14:45					314.6	
15:00	318.65	55.3	1660	Clear, minor sand		
15:20					314.6	
15:40	318.65	55.175	2207	Clear		Pump Shutdown for recovery monitoring
15:45	318.3	0	0	N/A		
15:50	318.3	0	0	N/A		
15:55	318.3	0	0	N/A		

System Pictures

Well Locations



Foreman Well



1995 Well





1995 026964
OFFICIAL RECORDS OF
NAPA COUNTY
H. KATHLEEN BONDS

Recorded at the request of and

When Recorded Return To:

Susan J. Passovoy
Coblentz, Cahen, McCabe & Breyer
222 Kearny Street, 7th Floor
San Francisco, CA 94108

AT REQUEST OF:

FIRST AMERICAN TITLE
12/01/1995 08:00 AM
Fee: \$ 55.00 Pgs: 17
TT : \$.00

GRANT OF EASEMENT

THIS GRANT OF EASEMENT AND AGREEMENT is made as of the 1st day of December, 1995, by and between Susan J. Passovoy, Michael F. Doyle and Juli Betwee (aka Julimarie Betwee) (hereinafter collectively the "Grantor"), on the one hand, and Richard W. Forman (hereinafter the "Grantee"), on the other hand.

R E C I T A L S:

A. Grantor is the owner in fee of that certain parcel of real property located in the unincorporated area of Napa County, State of California, identified as Assessor's Parcel Number 025-07-43 and more particularly described in Exhibit "A" (hereinafter the "Servient Tenement").

B. Grantee is the owner in fee of that certain parcel of real property adjacent to the Servient Tenement located in the City of St. Helena, Napa County, State of California, identified as Assessor's Parcel Number 025-070-029 and more particularly described in Exhibit "B" (hereinafter the "Dominant Tenement").

C. Grantee desires to acquire certain rights in the Servient Tenement and Grantor is willing to grant those rights to Grantee in favor of the Dominant Tenement on the terms and conditions set forth herein.

NOW, THEREFORE, for valuable consideration, the receipt of which is hereby acknowledged, Grantor and Grantee agree as follows:

1. Grant of Easement. The Grantor hereby grants to Grantee, his heirs, successors and assigns, an easement in favor of and appurtenant to the Dominant Tenement as hereinafter described.

2. Character of Easement. The easement granted herein is:

- (a) Perpetual;
- (b) Non-exclusive as between Grantor and Grantee solely in the manner described in Section 5 below; and
- (c) Exclusive as to all third parties.

3. Location of Easement. The easement granted herein is generally located in a portion of the northeast quarter of the Servient Tenement, the northern portion of which is adjacent to the entire western boundary of the Dominant Tenement, and more particularly described in Exhibit C attached hereto and shown on the surveyor's map attached hereto as Exhibit D, and is hereinafter referred to as the "Easement Area."

4. Description of Easement.

(a) The easement granted herein is for use of the Easement Area by Grantee, his heirs, successors and assigns, and his and their visitors, business invitees and workers (whether employees or independent contractors) for all purposes including, but not limited to, (1) clearing of land, planting and cultivating vineyards and harvesting grapes, (2) ingress and egress at any and all points along the boundary which separates the Dominant Tenement from the Easement Area, (3) drilling one or more wells for water (but only if, and to the extent that the well and its use do not materially adversely impact the water supplies available to the Servient Tenement), (4) bringing in electrical lines from the Dominant Tenement, (5) creating pathways and roadways, clearing trees and shrubbery and (6) otherwise maintaining the Easement Area.

(b) In addition, Grantee may have ingress and egress on the existing easement running with the Servient Tenement by which Grantor now enters and exits the Servient Tenement from Howell Mountain Road, but only to the extent that Grantor has the right to grant such permission to Grantee and without jeopardizing Grantor's rights under the existing easement, and provided further that Grantor may, in Grantor's sole and absolute discretion, modify, relocate or terminate all or any portion of the existing easement at any time without Grantee's consent. Grantor agrees that, if possible, Grantee should have use of any

1

alternate access to the Easement Area without additional consideration, and Grantor shall use best efforts (but at no expense to Grantor) to have Grantee included as a beneficiary of such alternate access to the Easement Area through the property of third parties, but Grantor shall not be in default if Grantor is not successful.

(c) The foregoing notwithstanding, Grantee shall not (1) build, install or place any structure in the Easement Area without Grantor's prior written consent, or (2) make alterations in the vicinity of the existing road without Grantor's consent, which consent, in either case, shall not be unreasonably withheld.

5. Grantor's Use of a Portion of the Easement Area.

Grantee acknowledges that the portion of the Easement Area through which the existing road passes is the approach to that portion of the Servient Tenement where Grantor intends to construct a home. Grantor shall have the right to use that portion of the Easement Area located in the vicinity of the existing road to locate or relocate the access road, for a leach field for a septic sewer system, for utility lines (including power, sewer and/or water), for landscaping, for a well and water storage, and for other purposes limited to the protection, maintenance and enjoyment of Grantor's residence; provided, however, that none of the otherwise permitted uses may materially adversely impact the vineyard and vineyard-related activities in

and on the Easement Area or be visible from Grantee's existing residence.

6. Indemnification. Grantor acknowledges that in the cultivation and operation of Grantee's vineyard, Grantee may use Hazardous Materials in such manner and such amounts as are legally and customarily used by vineyard owners in the Napa Valley, and that such use does not, in and of itself, cause a diminution in the value of the Servient Tenement. Grantee and Grantor shall indemnify, protect, defend (with counsel reasonably acceptable to the other) and hold the other, and each of them, their respective heirs, successors and assigns, harmless of and from any and all (a) loss, cost, damage, injury and/or expense arising out of or in any way related to the other's use of the Easement Area, including attorneys' or other experts' fees and costs, and (b) loss, cost, damage, injury and/or expense, including diminution in the value of the Servient Tenement, as a result of the use or presence of Hazardous Materials or the violation of any laws by the other. "Hazardous Materials" means any hazardous or toxic materials or waste which is or becomes regulated by any governmental authority. This indemnification shall not apply to the extent of the gross negligence or willful misconduct of the indemnified party, or any of them.

7. Transfer of Interest. This grant of easement shall be binding on, and to inure to the benefit of the heirs, executors, administrators, successors and assigns of Grantor and Grantee.

The parties declare that the subject matter hereof concerns real estate and the parties intend to create covenants running with the land, binding upon, inuring to the benefit of, and constituting appurtenances to their respective properties. The terms, covenants and conditions herein contained shall be so binding and shall inure to the benefit of the parties hereto, and their heirs, successors and assigns as to title to their respective properties and every part thereof and interest therein.

8. Alternative Dispute Resolution.

(a) In the event of any disagreement or dispute which arises with respect to the enforcement or interpretation of any provision of this Grant of Easement and the parties are unable to reach agreement by direct negotiation, the parties shall promptly submit any such disagreement or dispute to mediation in accordance with the procedures set forth in this Agreement.

(b) If the parties are unable to resolve such disagreement or dispute through mediation, then such disagreement or dispute shall be submitted to binding arbitration by a single arbitrator in accordance with the procedures and subject to the conditions contained in this Agreement.

(c) The obligation to resolve disputes or disagreements related to the enforcement of this Agreement shall be applicable notwithstanding the amount of money, if any, involved in the dispute or disagreement.

(d) The arbitrator shall have the discretion to allocate in the award the costs of arbitration, the arbitrator's fees and the respective attorneys' fees and costs of each party between or among the parties as the arbitrator sees fit. In the event that any party shall fail to pay the amount due or otherwise to comply with the determination of the arbitrator and legal action is commenced for enforcement of the award or determination, the prevailing party or parties shall be entitled to receive a reasonable attorneys' fee and costs incurred in such action, including any fees and costs on appeal and to enforce any award or judgment. The arbitrator shall have no authority to award punitive damages of any kind.

(e) Judgment on the award of the arbitration may be entered in any court having jurisdiction thereof. An action to enforce the judgment on the award shall not be subject to mediation or arbitration as provided herein.

(f) (1) "Mediation" as used in this Section shall mean and refer to the intercession of a person or persons for purposes of attempting to persuade or assist two or more parties in dispute or disagreement to adjust or settle their dispute or disagreement.

(2) "Arbitration" as used in this Section shall mean and refer to the intercession of a person or persons to decide or resolve a dispute or disagreement involving two or more parties.

1

(g) THE PARTIES ACKNOWLEDGE THAT BY AGREEING TO HAVE ANY DISPUTE ARISING OUT OF THE ENFORCEMENT OR INTERPRETATION OF THE GOVERNING DOCUMENTS RESOLVED BY BINDING NEUTRAL ARBITRATION, THEY ARE GIVING UP (i) ANY RIGHT THEY MAY POSSESS TO HAVE THE DISPUTE LITIGATED IN A COURT OR BY JURY TRIAL, AND (ii) JUDICIAL RIGHTS TO DISCOVERY AND APPEAL, EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT. IF ANY PARTY REFUSES TO SUBMIT SUCH A DISPUTE TO ARBITRATION, SUCH PARTY MAY BE COMPELLED TO ARBITRATE UNDER THE AUTHORITY OF THE CALIFORNIA CODE OF CIVIL PROCEDURE.

9. Entire Agreement. This Grant of Easement contains the entire agreement between the parties hereto relating to the rights herein granted and the obligations herein assumed. Any oral representations or modifications concerning this instrument shall be of no force and effect, and any subsequent modifications must be in writing, signed by the parties hereto.

10. Cooperation. The parties agree to cooperate in good faith to preserve and enhance the value and enjoyment of their respective properties and the Easement Area.

11. Exhibits. The following Exhibits are attached hereto and incorporated herein by reference:

Exhibit A:	Legal Description of Servient Tenement
Exhibit B:	Legal Description of Dominant Tenement
Exhibit C:	Legal Description of Easement Area
Exhibit D:	Surveyor's Map of Easement Area

12. Counterparts. This Grant of Easement may be executed in any number of counterparts, each of which shall be entitled to be the original and all of which shall constitute one and the same document.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties hereto have duly executed
this grant of easement on the date first above written.

GRANTOR:



Susan J. Passovey

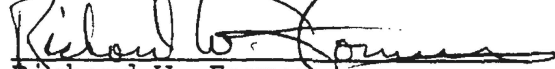


Michael K. Boyle



Juli Betwee

GRANTEE:



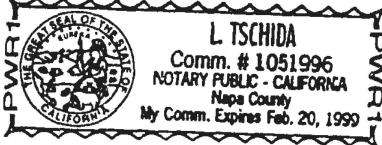
Richard W. Forman

ACKNOWLEDGEMENT OF NOTARY PUBLIC

State of California)
)
County of Napa)

On this 30th November day of October in the year 1995, before me, a Notary Public, personally appeared Richard W. Forman personally known to me (or proved to me on the basis of satisfactory evidence) to be the persons whose names are subscribed to this instrument. I declare under penalty of perjury that the persons whose names are subscribed to this instrument appear to be of sound mind and under no duress, fraud or undue influence.

NOTARY SEAL



L. Tschida
Notary Public

CERTIFICATE OF ACKNOWLEDGEMENT
OF NOTARY PUBLIC

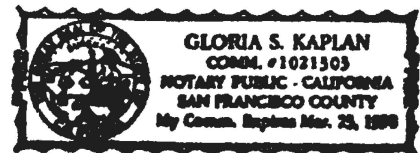
STATE OF CALIFORNIA)
) ss.
COUNTY OF SAN FRANCISCO)

On October 31, 1995, before me, GLORIA S. KAPLAN, personally appeared Susan J. Passovoy, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Gloria S. Kaplan
Signature

(Seal)



CERTIFICATE OF ACKNOWLEDGEMENT
OF NOTARY PUBLIC

STATE OF CALIFORNIA)

) ss.

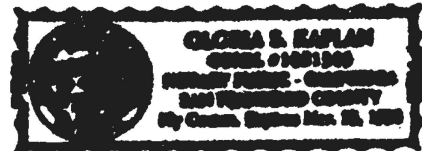
COUNTY OF SAN FRANCISCO)

On May 6, 1995, before me, GLORIA J. KAPLAN,
personally appeared Michael K. Doyle, personally known to me (or
proved to me on the basis of satisfactory evidence) to be the
person(s) whose name(s) is/are subscribed to the within
instrument and acknowledged to me that he/she/they executed the
same in his/her/their authorized capacity(ies), and that by
his/her/their signature(s) on the instrument the person(s), or
the entity upon behalf of which the person(s) acted, executed the
instrument.

WITNESS my hand and official seal.

Gloria J. Kaplan
Signature

(Seal)



CERTIFICATE OF ACKNOWLEDGEMENT
OF NOTARY PUBLIC

STATE OF CALIFORNIA)

) ss.

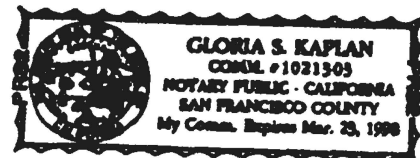
COUNTY OF SAN FRANCISCO)

On May 6, 1995, before me, GLORIA J. KAPLAN,
personally appeared Juli Betwee, personally known to me (or
proved to me on the basis of satisfactory evidence) to be the
person(s) whose name(s) is/are subscribed to the within
instrument and acknowledged to me that he/she/they executed the
same in his/her/their authorized capacity(ies), and that by
his/her/their signature(s) on the instrument the person(s), or
the entity upon behalf of which the person(s) acted, executed the
instrument.

WITNESS my hand and official seal.

Gloria S. Kaplan
Signature

(Seal)



"Illegible Notary Seal Declaration"
(Govenment Code 27361.7)

I certify under the penalty of perjury that the notary seal on the document to which this statement is attached reads as follows:

Name of Notary GLORIA S. KAPLAN

Date Commission Expires 3 - 23 - 98

Place of Execution SAN FRANCISCO Date Nov. 6, 1995

Commission Number 1021303

FATCO MT
Signature and firm name if any



Order No: 91812

The land referred to herein is situated in the State of California, County of Napa, and is described as follows:

PARCEL ONE:

Beginning at the Northwest corner of the Southeast quarter of the Northeast quarter of Section 30, Township 8 North, Range 5 West, Mount Diablo Base and Meridian; thence East along the North line of said quarter-quarter section to the Northeast corner thereof; thence South along the East line of said quarter-quarter section to the Southeast corner thereof; thence West along the South line of said quarter-quarter section 835 feet, more or less, to the Northeast corner of the parcel of land described in the Deed to Markal Smith, recorded February 21, 1905 in Book 82 of Deeds at page 44, in the office of the County Recorder of said Napa County; thence leaving said South line, North 59° 59' West 865 feet, more or less, to a point on the Northwest line of the parcel of land described in the Deed to Henry A. Meyer, et ux, recorded May 4, 1967 in Book 765 at page 315 in the office of the County Recorder of said Napa County, at a point distant thereon 466.16 feet from the most Northerly corner of said Meyer parcel; thence along said Northwest line, North 36° 30' East 466.16 feet to said Northerly corner, said corner is further described as being a point on the West line of the hereinabove described quarter-quarter section; thence North along said West line 531.6 feet to the point of beginning.

PARCEL TWO:

A Right of Way, 40 feet in width, for road purposes, the centerline of which is the centerline of the existing roadway commencing on the Eastern line of the 2.43 acre tract of land conveyed to Markal Smith by Deed of record in Book 80 of Deeds, at page 46, Napa County Records, at a point approximately 60 feet North of the centerline of Howell Mountain Road; proceeding thence in a Northerly direction to a point on the North line of the Southeast quarter of Section 30, Township 8 North, Range 5 West, Mount Diablo Base and Meridian, approximately 150 feet West of the quarter Section corner between Sections 29 and 30, Township 8 North, Range 5 West, Mount Diablo Base and Meridian.

PARCEL THREE:

A Right of Way, 40 feet in width, for road purposes described as follows:

COMMENCING on the East line of Section 30 at a point approximately 200 feet North of the above mentioned quarter Section corner between Sections 29 and 30; proceeding thence about 650.00 feet in a generally Northeasterly direction and proceeding thence in a generally Westerly direction about 550.00 feet to a point on the East line of Section 30 about 650 feet North of the above mentioned quarter Section corner between Sections 29 and 30.

EXHIBIT A TO GRANT OF EASEMENT



Exhibit "B"

That certain real property located in St. Helena, County of Napa, State of California, described as:

PARCEL 1, as shown on Parcel Map filed June 28, 1978 in Book 9 of Parcel Maps at page 96 & 97 of Official Records of Napa County.

SUBJECT TO the included portion of the 60 foot roadway and utility easement described in the deed to the heirs or devisees of C. Fred Holmes, Jr., deceased recorded under Series No. CF 6072.

TOGETHER WITH an easement 60 feet and 30 feet in width being the referenced "Parcel A - Proposed 60' right of way" in said deed recorded under Recorder's Serial No. CF 6072, the 60 foot width extending from Howell Mountain Road to the southeastern corner of said Parcel 1 herein conveyed and the 30 feet width being that portion thereof lying easterly of the easterly line of Parcel 1 herein.

Easement Description

All that real property situate in the County of Napa, State of California and being a portion of Parcel One conveyed by Adam Bronfman, et. ux., to Richard Forman by Deed recorded August 2, 1995 as Document Series Number 1995 016537, in the Office of the Napa County Recorder, and more particularly described as follows:

Beginning at a point on the Westerly line of Parcel 2 as shown on that certain Map Number 3054 entitled, "Parcel Map of the Lands of Charles B. See", recorded June 28, 1978 and filed in Book 9 of Parcel Maps, at Page 96, Napa County Records, said point also being on the East line of said Parcel One conveyed to Forman and lying North 0° 22' 34" West 582.43 feet along said Westerly line from the Southwest corner of said Parcel 2 and running thence North 87° 02' 10" West 295.95 feet to a 3/4 inch iron pipe & tag, PLS 6709; thence North 3° 46' 13" West 277.20 feet to a 3/4 inch iron pipe & tag, PLS 6709; thence North 32° 27' 34" West 139.89 feet to a 3/4 inch iron pipe & tag, PLS 6709; thence North 222.13 feet, more or less, to the intersection with the North line of said lands of Forman; thence along said North line, East 384.71 feet, more or less, to the Northeast corner of said Parcel One; thence along said East line, South 0° 22' 34" East 632.05 feet to the Point of Beginning.



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November 14, 1995

EXHIBIT "C"

100.

PLAT OF EASEMENT
LANDS OF FORMAN
N.C.A.P.N. 25-070-043

PREPARED AT THE REQUEST OF RICHARD PERMAN.

SIGNED:

John M. Weber

FLS 6700

Exp: 6.3096

PARCEL 2
9 P.M. 96

PREPARED BY
ALBERT J. BROWN, JR.



MEMORANDUM FOR:

2025 10 10
 10:00 AM - 11:00 AM
 10:00 AM - 11:00 AM

EXHIBIT "D"

NOV 14 '95 02:34PM ALBION SURVEYS INC