ATTACHMENT 8D:

Haas Vineyards
Water Availability Analysis (WAA): Tier I

Includes: Attachment D Form
REVISED
October 2, 2024

Property Owner:
Chuck Haas
2 Swanston Rd,
St Helena, CA 94574

Prepared By:
Coda Rainsford, CPESC #9225
HDVine LLC

Site Map:
See attached Water Availability Map

Background:
The property is located at 2 Swanston Rd, St Helena, CA, APN 021-352-036. Parcel size is 23.9 acres. Prior to September 2020, the property was heavily forested and included a residence, landscaping, existing vineyard and driveway. All structures, landscaping and canopy were destroyed in the Glass Fire; September 27, 2020. Soil in the project area is Boomer gravelly loam (109), described as well drained soils on uplands formed in material weathered from mixed igneous rocks [3].

One electronic well record was identified for a well within the 500 ft radius from the water project water supply well (located on APN 021-353-013, see attached vicinity map). No other electronic records were found for the other wells on parcels within the 500 ft radius.

No blueline streams on the Napa County Significant Streams list are located within 1500 ft of the project well. Blueline streams in the vicinity that are on the Napa County map of Significant Streams, include:

- the Napa River 1530 ft to the southwest of the supply well and
- Canon Creek 2750 ft north of the supply well.

The project parcel is situated on the east side of Napa Valley on the western flank of Glass Mountain within elevations ranging from about 585 ft to about 300 ft asl. The project development area is situated on the higher slopes ranging from about 575 ft to 425 ft asl.

The majority of run-off from the proposed project area sheets to the west/north-west and flows into a drainage ditch along the property owner's driveway that joins a drainage ditch along Swanston Rd. The Swanston Rd drainage ditch traverses the adjacent parcel (APN 021-352-

028, 4 Swanston Rd), crosses underneath Swanston Rd twice, then runs along the east side of Bournemouth Dr and joins a ditch north of Silverado Trail that crosses under the road and connects to the dashed blueline on the south side of Siverado Trail. The ditch also continues along the east side of Silverado Trail and crosses under the driveway of 2974 Silverado Trail and terminates in a widened section of ditch lined with cobbles.

Water Supply Capacity:

The subject site is part of a mutual water company that serves several properties within the homeowner's association. As such, water use on the supply side was estimated based upon current uses of all parcels hooked up the supply well.

There are three wells located on parcel 021-390-012 (see Figure 1):

- "Old Well" was abandoned in 2017 in accordance with Well Permit #E16-00827 (attached)
- "Well 1" is currently idle as a back-up well for domestic water use within the Vailima Estate development.
- "Well 2" is connected to the water system and is in use as the primary water supply source among residents of the homeowner's association.

Figure 1 Map of well locations (excerpt from E18-00827)

Well 2 on the property is currently used for domestic purposes and fire protection. The well yield was determined to be 110 gpm, as measured during an 8-hr pump test on May 7, 2015 (report attached). The installed pump produces groundwater at a rate of 105 gpm. The water is part of a shared domestic water supply system, Vailima Estates Mutual Water Company, which was formed in 1969 to serve the members of its homeowner's association. Water is pumped to the top of the hill (at the end of Bournemouth Rd) into a 61,000 gal storage tank. There is a common line for tank fill and water delivery to customers. As such, water supply is gravity-fed

from the storage tank unless the well pump is actively running, in which case the pump overcomes the static head in the pipeline, and water is fed directly from the well.

Approximately 81.2 acres are served with a total of 14 water connections [4]. There is no water use limit or allotment for each individual water connection. As such, water usage was evaluated for the residential development assuming one residence and one-acre landscaping per water connection, and vineyard acreage visible in aerial photos (per Attachment D Water Usage Estimates), **TABLE 1**. Note that, at the time of this analysis, all water connections were not in use due to parcels being undeveloped or destroyed in the 2020 Glass Fire.

TABLE 1 Vailima Estates CURRENT Water Usage Estimate

Current Usage				
Usage Type	**Rate**	**Count**	**Subtotal**	**Units**
Residential	0.5	14	7	AF/yr
Landscaping	1.5	14	21	AF/yr
Vineyard	0.5	0.8	0.4	AF/yr
TOTAL			**28.4**	**AF/yr**

The applicant plans to plant 4.3 acres of vines on a minimum of 6 ft x 3 ft spacing; water usage for the proposed vineyard is detailed in **TABLE 2**[1].

TABLE 2 Haas Site Proposed Vineyard Uage

net acres	3.85	acres		
row spacing	6	ft		
vine spacing	3	ft		
Vines per Acre	2420	vines/acre		
TOTAL Vines	9329	vines		
Usage Rate	0.35	af/acre/yr	47.13	*gal/vine/yr*
Total Usage	1.35	af/yr		

TABLE 3 Vailima Estates FUTURE Water Usage Estimate

Future Usage				
Usage Type	**Rate**	**Count**	**Subtotal**	**Units**
Residential	0.5	14	7	AF/yr
Landscaping	1.5	14	21	AF/yr
Vineyard	0.5	0.8	0.4	AF/yr
Vineyard (NEW)	0.35	3.9	1.35	AF/yr
TOTAL			**29.7**	**AF/yr**

TABLE 4 Haas Site Total Estimated Use

	Usage Factor (AF/yr)	Current		Future	
		unit	AF/yr	unit	AF/yr
Residential	0.5	1.0	0.5	1.0	0.5
Landscaping	1.5	1.4	2.1	1.4	2.1
Vineyard	0.35	-	-	3.9	1.3
Total Usage			**2.6**		**3.9**

[1] No groundwater usage is proposed as part of the post-fire reforestation plan [2].

The total future water usage is estimated to be about 29.7 AF/yr (**TABLE 3**). The 105 GPM well, which is equivalent to about 170 acre-ft/year, and existing storage tank have more than enough capacity to support the existing and proposed water uses within the residential development.

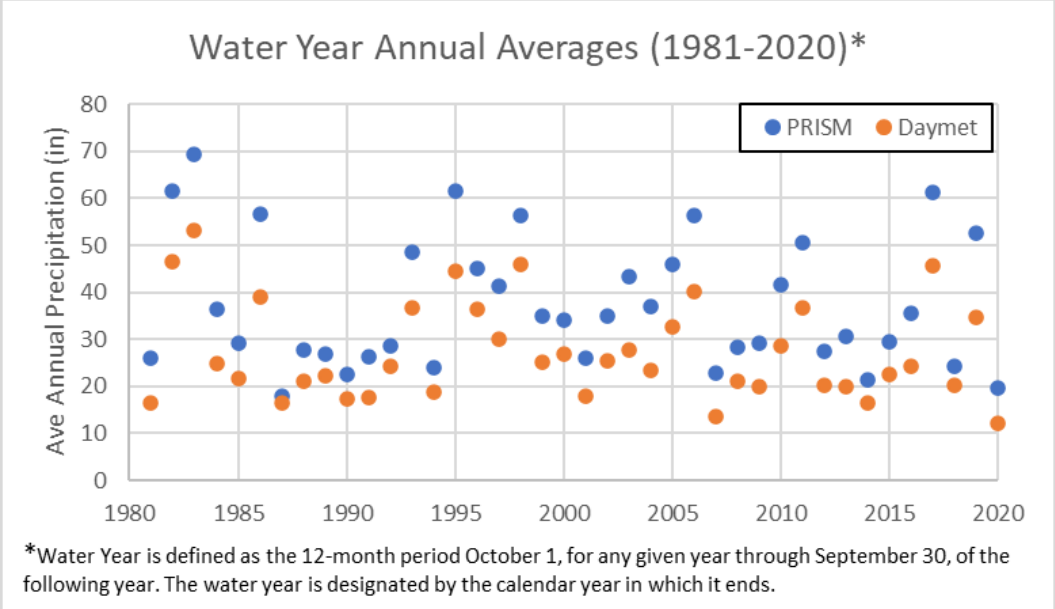
Aquifer Recharge:

Recharge was based on a parcel analysis where the proposed project is to be installed (APN 021-352-036, 23.9 ac). The property is zoned "AW."

Recharge based on precipitation data used rainfall data downloaded from DayMet [5] and PRISM [6] for the pixel that contained the subject site from 1980 to 2021 (Figure 2). Annual averages were calculated based on the "Water Year", which is defined by the USGS as the 12-month period October 1, for any given year through September 30, of the following year. The water year is designated by the calendar year in which it ends. The Water Year was chosen for this methodology based on two primary reasons:

1. From a Hydrologic Perspective, it makes sense to use water years (Oct – Sep), rather than calendar years, since it represents the accumulation of precipitation in a given rainy season. Similarly, the water year also represents precipitation that is available for recharge preceding the irrigation season.
2. From a practical perspective, in the Napa Valley Region, the water year data would be mostly complete at the start of the irrigation season (typ. May-Sep), since precipitation during the latter months of the water year is not typical. One would have data from the preceding rainy season, and may be able to make irrigation adjustments accordingly, whereas the calendar year precipitation data would obviously be incomplete.

Figure 2 Average Annual Precipitation



Based on available data, the most recent 10-yrs of data from PRISM and DayMet were used to calculate average precipitation as well as maximum and minimum precipitation on record.

TABLE 4 Average Annual Precipitation based on Water Year

Water Year	PRISM in	DayMet in
2011	51	37
2012	28	20
2013	31	20
2014	21	16
2015	29	23
2016	35	24
2017	61	46
2018	24	20
2019	53	35
2020	20	12
AVE	30	
MAX	61	
MIN	12	

Average Water Year rainfall across both datasets was 30 in/yr. A recharge volume was calculated for the parcel based on the property acreage and an infiltration rate of 14%, based on results for the "Napa River at St Helena Watershed" region, in which the subject site is located [7].

(23.9 acres)*(30in/yr)*(ft/12in)*(14%) = 8.4 AF/yr

Parcel water allotment is calculated at 0.3 AF/ac/yr * 23.9 parcel acres, which is 7.17 AF/yr.

Total future groundwater usage (including future residential development and future vineyard) is estimated to be 3.9 AF/yr, which below the parcel allotment and results in a net positive water balance of about 4.5 AF/yr.

No alternative water sources are required for this project.

Conclusions:

The proposed project involves installing 3.9 acres of vines on a 23.9 acre parcel with a maximum estimated irrigation water usage of 1.35 acre-feet per year.

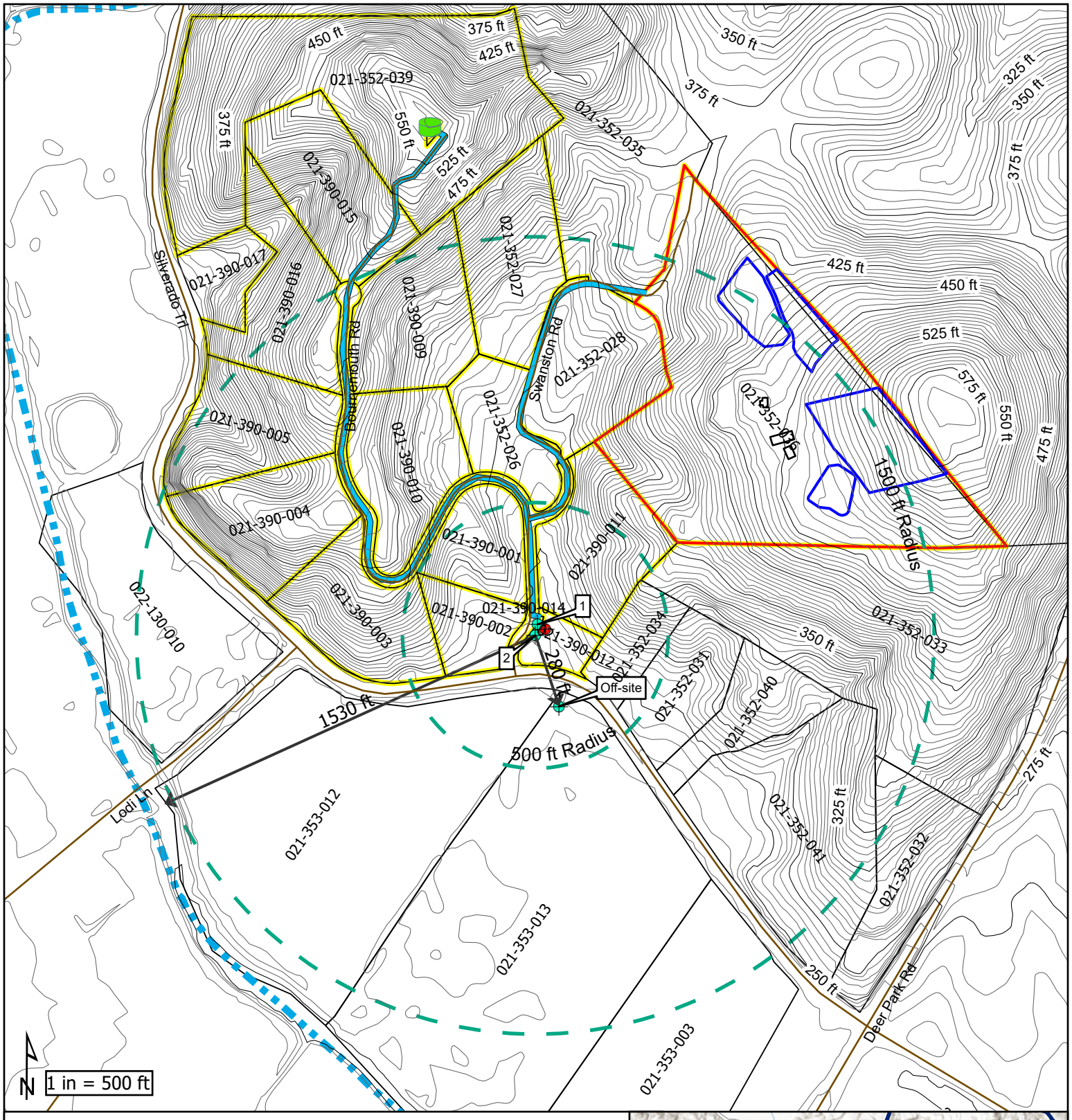
- The Water Supply Well (Well #2) produces 105 gpm or 170 acre-ft/year equivalent. The water use for the Mutual Water Company system is estimated to increase from 28.4 AF/year to 29.9 AF/yr, which is within the capacity of the well.
- Current estimated water usage on the parcel is 2.6 AF/yr, which is estimated to increase to 3.9 AF/yr after development. The estimated recharge on the parcel is 8.4 AF/yr, which results in a net positive water balance of 4.5 AF/yr.
- A Tier II Water Availability Analysis was prepared by OEI Environmental Inc. to demonstrate no significant impact to surrounding wells as a result of the proposed project [10].
- A Tier III Water Availability Analysis is not required since there are no significant streams identified within 1500 feet of the project well or project area.

References:

1. *Custom Soil Reource Report for Napa County, California, Haas Vineyard*, from USDA NRCS Web Soil Survey, May 2023
2. *Emergency Forest Restoration Program; Forest Management Plan for Charles J and Ellen J Haas*, prepared by Napa County Resource Conservation District, July 2023
3. Lambert, G., Kashiwagi, J. et al., Soil Survey of Napa County, California, USDA in cooperation with UC Agricultural Experiment Station, August 1978
4. *Mutual Water Companies in Napa County*, Prepared by the Local Agency Formation Commission of Napa County, June 2013
5. Thornton; M.M.; R. Shrestha; Y. Wei; P.E. Thornton; S. Kao; and B.E. Wilson. 2020. Daymet: Daily Surface Weather Data on a 1-km Grid for North America; Version 4. ORNL DAAC; Oak Ridge; Tennessee; USA. https://daymet.ornl.gov/single-pixel/
6. *PRISM Time Series Data by Location,* https://prism.oregonstate.edu/explorer/
7. *Updated Hydrogeologic Conceptualization and Characterization of Conditions*, Prepared for Napa County, by Luhdorff & Scalmanini Consulting Engineers & MBK Engineers, January 2013
8. USDA/NRCS - National Geospatial Center of Excellence, Title: 1981-2010 Annual Average Precipitation by State (California)
9. USGS Water Resources Investigation Report 03-4229, *Ground-Water Resources in the Lower Milliken-Sarco-Tulucay Creeks Area, Southeastern Napa County, California 2000-2002*, Prepared 2003
10. *Water Availability Analysis (Tier II), Charles Haas 2 Swanston Road, Saint Helena, CA 94575*, prepared by O'Connor Environmental, Inc., February 16, 2024.

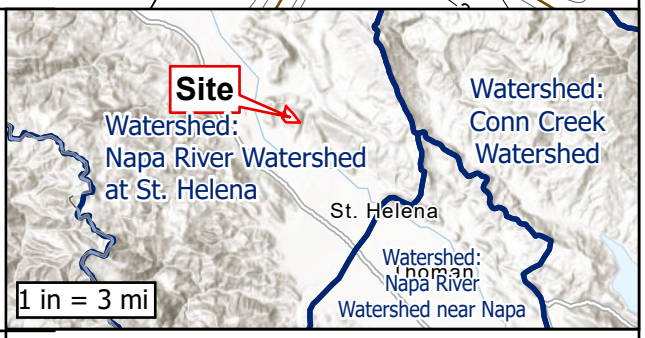
Attachments:

WAA – Vicinity Map
Attachment D, form
Well #2 Completion Report (Vailima Estates Supply Well)
Well #2 Pump Test
"Old Well" Destruction Permit #E16-00827
Well Permit for neighboring parcel, 021-353-013 (Permit #E14-00404)



Legend

- Napa Parcels
- Project Parcel
- Vailima Water Parcels
- VB Potential
- Buildings
- Radius
- Pipeline
- Water Tank
- Well
- Well (Abandoned)
- Measurement
- ROADS2
- Napa Contours
- index (25')
- inter (5')
- Pipeline



HDVine LLC

File: Haas_ECP_Track I

Date: 6/28/24

Haas WAA: Vicinity Map

Attachment D

PHASE I WATER AVAILABILITY ANALYSIS

File #: P__ __-__ __ __ __ Owner: Chuck Haas Parcel #: 021 352 036

This form is intended to help those who must prepare a Phase I Water Availability Analysis. **The Department will not accept an analysis that is not on this form.**

BACKGROUND: A Phase I Water Availability Analysis is done in order to determine what changes in water use will occur on a property as a result of the project. Staff uses this information to determine whether the project may have a adverse effect on groundwater levels. If it may, additional information will be required. You will be advised if additional information is needed.

PERSONS QUALIFIED TO PREPARE: Any person that can provide the needed information

PROCEDURE:

STEP 1: *Prepare and attach to this form 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 shown*

STEP 2: *Determine the allowable groundwater use allotment for your parcel(s).*

Total size of parcel(s)	23.9	acre(s)
Multiply by parcel location factor	x 0.3	acre-foot per acre per year (see back)
Allowable groundwater allotment	= 7.2	acre-foot per year

STEP 3: *Determine the estimated water use for all vineyards on your parcel(s) currently and after the planned conversion; actual water usage figures may be substituted for the current usage estimate (please indicate if this is done). Estimate future use for both the vineyard establishment period and thereafter*

Current Usage:

Number of *planted* acres	_____	acres
Multiply by number of vines/acre	x _____	vines per acre
Multiply by gallons/vine/year	x _____	gallons of water per vine per year
Divide by 325,821 gallons/af	= _____	af of water per yr used for vineyard irrigation

Future Usage:

Number of *planted* acres	3.85	acres
Multiply by number of vines/acre	x 2420	vines per acre
Multiply by gallons/vine/year	x 47	gallons of water per vine per year (long-term)
	47	gallons of water per vine per year (establish)
Divide by 325,821 gallons/af	= 1.35	af of water per yr used (vineyard long-term)
	1.35	af of water per yr used (vineyard establish)

STEP 4: *Using the guidelines on the next page, actual water usage figures, and/or detailed water use projections, tabulate the existing and projected future water usage on the parcel(s) in acre-foot per year (af/yr) {1 af = 325,821 gallons}*.

Existing Usage:		**Future Usage:**	
Residential	0.5 af/yr	Residential	0.5 af/yr
Farm Labor Dwelling	0 af/yr	Farm Labor Dwelling	0 af/yr
Winery	0 af/yr	Winery	0 af/yr
Commercial	0 af/yr	Commercial	0 af/yr
Vineyard(long-term)	0 af/yr	Vineyard(long-term)	1.35 af/yr

" (establish)	0 af/yr	" (establish)	1.35 af/yr
Other Agriculture	0 af/yr	Other Agriculture	0 af/yr
Landscaping	2.1 af/yr	Landscaping	2.1 af/yr
Other Usage	0 af/yr	Other Usage	0 af/yr
TOTAL	2.6 af/yr	TOTAL	3.9 af/yr

STEP 5: *Attach all supporting information that may be significant to this analysis including but not limited to all water use calculations for the various uses listed*

Parcel Location Factors

The allowable allotment of water is based on the location of your parcel. Valley floor areas include all locations on the floor of the Napa Valley and Carneros Basin except for groundwater deficient areas. Groundwater deficient areas are areas that have been determined by the Department of Public Works as having a history of problems with groundwater. All other areas are classified as Mountain Areas. Public Works can assist you in determining your classification.

Parcel Location Factors	
Valley Floor	1.0 acre foot per acre per year
Mountain Areas	0.5 acre foot per acre per year
Groundwater Deficient Area (MST)	0.3 acre foot per acre per year

Guidelines For Estimating Water Usage:

Residential:	
Single Family Residence	0.5 acre-foot per year
Farm Labor Dwelling	1.0 acre-foot per year (6 people)
Second Unit	0.4 acre-foot per year
Guest Cottage	0.1 acre-foot per year
Winery:	
Process Water	2.15 acre-foot per 100,000 gal. of wine
Domestic and Landscaping	0.50 acre-foot per 100,000 gal. of wine
Commercial:	
Office Space	0.01 acre-foot per employee per year
Warehouse	0.05 acre-foot per employee per year
Agricultural:	
Vineyards	
Irrigation only	0.2 to 0.5 acre-foot per acre per year
Heat Protection	0.25 acre foot per acre per year
Frost Protection	0.25 acre foot per acre per year
Irrigated Pasture	4.0 acre-foot per acre per year
Orchards	4.0 acre-foot per acre per year
Livestock (sheep or cows)	0.01 acre-foot per acre per year
Landscaping:	
Landscaping	1.5 acre-foot per acre per year

ORIGINAL
File with DWR

WELL #2
Vailima Estates
Supply Well

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. e0237626

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

Owner's Well No. -2014
Date Work Began 12/9/2014, Ended 12/18/2014
Local Permit Agency Napa County Environmental Mgmt
Permit No. E14-00932 Permit Date 11/18/2014

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ROTARY FLUID BENTONITE

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain, size, color, etc.*
0	5	BROWN CLAY
5	35	LARGE SAND & GRAVEL
35	55	TAN, GRAY SAND & GRAVEL
55	65	SANDY TAN ASH
65	70	VOLCANIC SANDS
70	75	TAN VOLCANIC TUFF
75	315	GRAY, BROWN VOLCANIC SANDS
315	320	SANDY TAN ASH
320	365	VOLCANIC SANDS
365	400	DARK GRAY MIXED VOLCANICS

TOTAL DEPTH OF BORING 400 (Feet)
TOTAL DEPTH OF COMPLETED WELL 380 (Feet)

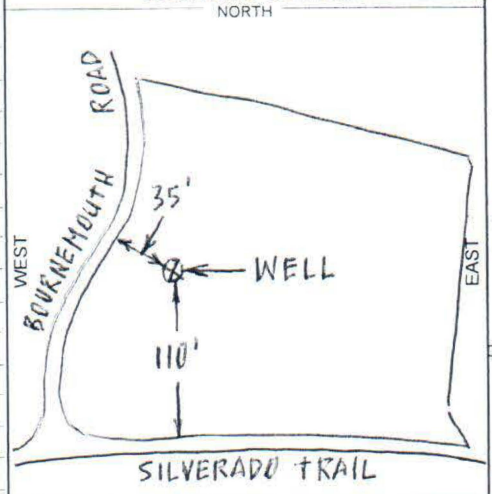
WELL OWNER

Name Vailima Estates
Mailing Address P.O. Box 526
St. Helena CA 94574
CITY STATE ZIP

WELL LOCATION

Address Bournemouth Road
City St. Helena CA
County Napa
APN Book 021 Page 390 Parcel 012
Township ___ Range ___ Section ___
Latitude ___ DEG. MIN. SEC. ___ DEG. MIN. SEC.

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.**

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)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER N/A (Ft.) BELOW SURFACE 1
DEPTH OF STATIC WATER LEVEL 25 (Ft.) & DATE MEASURED 12/18/2014
ESTIMATED YIELD 160 (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.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	400	15								
0	100		✓				PVC F480	8	SDR-21	
100	300			✓			PVC F480	8	SDR-21	.032
300	320		✓				PVC F480	8	SDR-21	
320	360			✓			PVC F480	8	SDR-21	.032
360	380		✓				PVC F480	8	SDR-21	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	60	✓			10 SK SAND
60	385			✓	#6 SAND
385	400			✓	CUTTINGS

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 HUCKFELDT WELL DRILLING, INC.
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
2110 Penny Lane Napa CA 94559
ADDRESS CITY STATE ZIP
Signed ___ 01/18/15 439-746
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

OAKVILLE PUMP SERVICE, INC.

#1 Walnut Drive / P.O. Box 435
Oakville, CA 94562
Phone (707) 944-2471 Fax (707) 944-5636
License # 744958 / oakvillepump.com

Report Date: 5/11/2015	**Report By:** W. Lutz	**Tested By:** **W. Lutz**	**Job#:** 6302

Property Information

Property Location: Bournemouth & Silverado Trl	St. Helena			AP#:021-390-012
Buyers Name:				
Buyers Agent or Rep:				
Property Owner Name:				
Listing Agent or Owner Rep:				

Well & Pump System Information:

Well ID & Location on Property	***Well Depth:***	***Pump Setting:***	***Casing Type & Size:***	***Sanitary Well Seal:***
Well 2 (45' from well 1 and from bournemouth	380'	315'	8" PVC w/10" Steel Shell	Yes
Submersible Pump / HP / GPM:	***Motor HP,Voltage,Phase:***	***Pipe Size & Type:***	***Check Valve Type:***	***Annular Seal / Pad:***
20 HP	25 HP 3ph 230			Yes
Submersible Pump Control Panel:	***Low Water Protection:***	***Flow Control Valve:***	***Press Tank(s) & Qty:***	***Press. Relief Valve:***
AMC	777	N/A	N/A	N/A
Submersible Pump Filtration:	**Sub Pump Misc Equipment Notes:**			
N/A				

Booster Pump Information:	***Pump Controls:***	***Flow Control Valve:***	***Check Valve Type:***	***Press. Relief Valve:***
N/A	N/A	N/A	N/A	N/A
Filtration Equipment:	***Storage Tank Size/Type:***	***Booster Pump/Filtration/Tank Equipment Notes:***		
N/A	N/A	N/A		

Water Analysis Testing:

Sample Type:	***Date Sampled:***	***Completion Date:***	***Lab Vender:***	***Notes:***
Title 22 Suite	5/7/2015		Brejle & Race	

Well Yield Test (Log on second page)

Date of Test:	***Well Type:***	***Static Water Lvl:***	***Pumping Water Lvl:***	***Specific Capacity:***	***Well/Pump Yield:***
5/7/2015	Community	26' 5"	97' 10"	1.54 GPM/Ft Drawdown	**110 GPM**
Start Time:	***Test Duration:***	***Water Level Recovery:***		***Recovery Time:***	***Total Gallons Pumped:***
900	8 Hr	Recovered to: 28'		3 Hrs	54000

*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:

1.) Well Located N 38° 31' 43.8" W122° 29' 08.4" +/- 9 ft
2.) GPS Altitude 252'
3.) Pump Pulling 63 Amps during test with 4-5% current imbalance
4.) Badger Water Meter Model 120, S/N L2048A39

Recommendations:

1.)
2.)
3.)

Well Test Log

Time:	Water Level	GPM Flow	Water Quantity Flowed (gals)	Basic Water Quality (Visual Color-Sand)	Turbidity (NTU)	Notes:
5/7/2015 9:00	-26.5	130		5		80 PSI Backpres
5/7/2015 9:10	-87.5	120		4		120 PSI Backpres
5/7/2015 9:20	-92.2	120		4		150 PSI Backpres
5/7/2015 10:15	-95.5	115		3		175 PSI Backpres
5/7/2015 11:15	-95.3	110		1		180 PSI Backpressure
5/7/2015 12:00	-96.1	110		0 (Clear)		
5/7/2015 12:45	-96.7	110		0		
5/7/2015 13:30	-97.1	110		0		
5/7/2015 14:15	-97.5	110		0		
5/7/2015 15:15	-97.2	110		0		
5/7/2015 16:15	-97.6	110		0		
5/7/2015 17:00	-97.8	110		0		Shutdown for Recovery
5/7/2015 17:05	-66.2	0		N/A		Recovery
5/7/2015 17:15	-39.7	0		N/A		"
5/7/2015 17:30	-35.2	0		N/A		"
5/7/2015 17:45	-33.2	0		N/A		"
5/7/2015 18:00	-31.9	0		N/A		"
5/7/2015 18:15	-31	0		N/A		"
5/7/2015 18:30	-30.7	0		N/A		"
5/7/2015 18:45	-29.8	0		N/A		"
5/7/2015 19:00	-29.3	0		N/A		"
5/7/2015 19:15	-29	0		N/A		"
5/7/2015 19:30	-28.6	0		N/A		"
5/7/2015 19:45	-28.3	0		N/A		"
5/7/2015 20:00	-28	0		N/A		"

Additional Comments and Notes:

1.) Water Level is in feet below well head.
2.) Water level measured with transducer in well. Measuremest for initial and final water level verified with graduated well probe.
3.) Water level recovered to within 2' (more stringent than 95% recovery) of SWL within 3 hours of pump shutdown
4.)
5.)
6.)
7.)
8.)
9.)
10.)

System Pictures

SD/PMT/E16-00827

Planning, Building & Environmental Services

1195 Third Street, Suite 210
Napa CA 94559
www.countyofnapa.org
(707) 253-4417

David Morrison
Director

A Tradition of Stewardship
A Commitment to Service

OFFICE SET

Well Permit

Application Type:	Environmental / EM Permits / Water Wells / Well Destruction	**Applied Date:**	11/28/2016
Permit Number:	E16-00827	**Issued Date:**	12/5/2016
Parcel Number:	021-390-012-000	**Expiration Date:**	12/5/2018

Site Address:

Owner:	VAILIMA ESTATES HOMEOWNERS ASSN	**Phone:**	(000) 000-0000
Address:	P O BOX 526		
Applicant:	Nik Lutz	**Phone:**	(707) 944-2471
Business Name:	OAKVILLE PUMP SERVICE INC	**License #:**	744958

Project Type: Environmental / EM Permits / Water Wells / Well Destruction

Proposed Use:

Use:

Name of Public Water System:

Well To Service This Parcel Only?:

Water Supply:

Septic Setbacks Met?:

Well Located in Flood Zone?:

Actual Approved Setback:

Hazmat Site Within 1500 feet?:

Emergency Exemption Granted?:

Hazmat Site Number and Name:

Reason For Emergency Exemption:

Specifications:

Casing Diameter:	In.	**Method of Seal Placement:**	
Boring Diameter:	In.	**Minimum Seal Depth:**	Ft.
Annular Seal:	In.	**Material:**	

TO PERMITEE:

Any work performed or operations conducted under the auspices of this permit constitutes acceptance of all conditions, inspections and comments contained in the this permit, and the incorporation of all requirements as set forth in the permit application.

Staff Signature: Cindy Worthington Date: 12.5.16

E16-00827

CONDITIONS/INSPECTIONS/COMMENTS

Application Type:	Environmental / EM Permits / Water Wells / Well Destruction	**Applied Date:**	11/28/2016
Permit Number:	E16-00827	**Issued Date:**	12/5/2016
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Owner:	VAILIMA ESTATES HOMEOWNERS ASSN	**Phone:**	(000) 000-0000
Applicant:	Nik Lutz	**Phone:**	(707) 944-2471

Conditions:

Code	Condition
WELL-01	A copy of the State of California Well Completion Report must be submitted within 60 days of well completion.

Inspections: **Inspected By:** **Date:**

Inspection Type
Destruction Inspection

MSB 51' seal 4-5-17

Comments:

Date	Comment
12/5/2016	Call 253-4135 at least 24 hours in advance during normal business hours to schedule inspection requests. Inspections are taken on a first-come-first-served basis so if you need a specific date and time be sure to call well in advance

E16-00827 - CP-

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WELL DESTRUCTION EVALUATION REPORT FORM

PROPERTY OWNER INFORMATION

Name: Vailima Estates

Address: P.O. Box 526, St. Helena, 94573

APN: 021-390-012

Phone #: 707- 963-3104

WELL DRILLER INFORMATION

Company Name: Oakville Pump

Contact person: Nik Lutz

Address: P.O. Box 455, Oakville Ca 94562

Phone #: 707-944-2471

TYPE OF WELL TO BE DESTROYED:

(CASED WELL) HAND DUG WELL OTHER: _____

FOR CASED WELLS:

Casing material: (Steel), PVC other: _____
Total depth of well: 288' feet
Well Screen interval(s): Not Available
Total Depth: Unknown feet. (For no seal – write "none", if you don't know, write in "unknown")
Casing Diameter: 6 inches.
Annulus diameter: Unknown inches (For no annulus, write "none". If you don't know, write "unknown")
Well Pack Material: Unknown
Static water level: 35' feet.

FOR HAND DUG WELLS:

Total depth of well: _____ feet
Diameter of well: _____ feet
Well construction material (brick, stone, etc): _____

DESTRUCTION PROCEDURES:

Describe method to be used to perforate the casing: Fill to 50' w/ Gravel, then 50' to Surface w/ concrete, the Blast

Type of filling material to be placed into the well: Gravel & Concrete.
Fill material to be place to 100 feet below ground surface.

3.14.17 NICK FROM OAKVILLE PUMP CALLED. WILL PERFORATE EVERY 3' WITH MILLS KNIFE. DC.

Sealing Material: Concrete Neat Cement Cement Grout
Bentonite Grout (high solids) Other: _____

Driller's Comments:
Old well not in use for decades.

Choate, Darell

From: Nik Lutz <nik@oakvillepump.com>
Sent: Friday, December 02, 2016 7:52 AM
To: Choate, Darell
Subject: Vailima Video Log Report
Attachments: Vailima Estates Mutual Water Old Well - Video Log.pdf

Good Morning,

I have to run out on some service calls this morning, but attached is the written report of the findings. Unfortunately, the buildup on the casing was so bad that even if there are perfs, we could not see them let alone locate and measure them. While the camera was being lowered, the visibility was very bad due to the minerals and casing flakes being knocked off.

The company that performed the video log also does well demo's via blasting. With the close proximity of the other wells, he recommended filling with gravel to 50' below the surface than concrete / grout the rest of the way and using a 'light' blasting load to perforate the casing while not effecting the surrounding infrastructure.

I should be back in the office later this afternoon and I will try calling then.

Thank You,

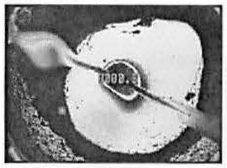
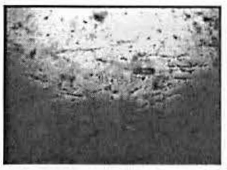
Nik Lutz
Oakville Pump Service, Inc.
Office Line: 707-944-2471 x463
Direct Line: 707-754-1463
Fax Line: 707-944-5636
nik@oakvillepump.com

Wellbore Video Report

Dr. Well, Water Well Services, Inc.
P.O. Box 1685 Fair Oaks, CA. 95628
Phone: (916) 536-9319 Fax: (916) 962-7381 Web: www.drwaterwell.com

Company: **Oakville Pump Service** Invoice No: _____ Run No.: **1**
Address: **7855 St. Helena Hwy.** Well Number: **Old Well**
City: **Oakville** State: **CA** Zip: **94562** Survey Date: **Nov 29, 2016**
Requested By: **Nick** P.O.: _____ Well Owner: **Vailima Estates Mutual Water**
Copy To: _____ Camera: **CCV Color Flip Camera - Short L.H.**
Reason For Survey: **General Inspection** Zero Datum: **Top of Casing**
Operator: **Chris Perry** Lat.: **38°31'44.97"N** Long.: **122°29'8.54"W** Sec: _____ Twp: _____ Rge: _____
Location: **100 Yards North Of Silverado Trail, On Bournemouth Rd, St. Helena** Depth: _____ Van: **1**
Casing I.D. At Surface: **6.25"** I.D. Reference: **Measured** Casing Corrosion: **Very Heavy**

(NOTE: Latitude and Longitude values determined using a recreational GPS accurate to about +/- 45'. SEC, TWP and RGE then determined using the TRS conversion program, accuracy not guaranteed.)

SELECTED WELLBORE SNAPSHOTS	TRUE DEPTHS (SideScan - Feet)	WELLBORE / CASING INFORMATION
1'  2' 	1'	Top Of Casing 8", Becomes 6 1/4"
	2'	Sounding Port
33'  48' 	33'	**Static Water Level (SWL)**
	48'	Sidescan Of Casing
	50'	Downview Of Casing
50'  75' 	75'	Downview Of Casing
	76'	Sidescan Of Casing
	90'	Visibility, Poor
76'  90' 	100'	Sidescan Of Casing
	200'	Sidescan Of Casing
	282'	Soft Fill, Bottom, End of Survey
100'  200' 		-Bottom Tagged At 288'
282' 		

Notes: Fenced Area, Branches Over Well


'Old' Well
Well 1
Well 2
Bowmanouth Rd
Silverado Trail
© 2016 Google
Google Ea
1993
38°31'43.31" N 122°29'08.84" W elev 232 ft eye alt