

ATTACHMENT 8D:

Liao Vineyards Water Availability Analysis (WAA)

*Includes: Attachment D Form
REV3: February 3, 2022*

Property Owner:

Goldvista Holdings LLC
PO Box 9446
Rancho Santa Fe, CA 92067

Prepared By:

Sarah Pistone, CPESC #9225
HDVine LLC
PO Box 1686
Middletown, CA 95461

Site Map:

See attached Water Availability Map

Background:

The property is located at 3580 Monticello Rd, Napa, CA, 94558 APNs 033-040-058, 057. Parcel sizes are 18.5 acres and 23.3 acres, respectively, for a total of 41.9 acres. The western portion of the property (APN 033-040-058) is comprised of an existing residence, surrounding landscaping trees, deck, and driveway infrastructure surrounded by rangeland and mixed oak woodland. The eastern portion of the property (APN 033-040-057) is comprised of existing vineyard and pond on the level valley floor (operated by others). The eastern portion was delineated as a separate APN to structure the lease to a separate entity for the existing vineyard. Project area soils include 138-139 Forward silt loam [1], which is comprised of well-drained soils on uplands derived from weathered rhyolite (HSG = C) [2].

Several electronic well records were identified for the neighboring parcel to the north (APN 033-040-009), including well completion reports for three wells drilled in 2012. It is not possible to map the wells based on the location sketches, so an effort was made to cross-reference the well log with the referenced permit number. The results of this effort are presented on the included WAA Vicinity Map. Well Permit #E12-00394 references two wells (one near pond and one near house). Based on unverified locations of other wells, it is presumed that the well log is in the vicinity of the house, which may fall within the 500 ft radius of the subject site supply well. No other parcels overlap the 500 ft radius.

Due to the proximity of area wells, a review of potential drawdown impacts was conducted. The Water Availability Analysis (WAA) Guidance Document (Adopted May 12, 2015), presents results that show wells pumping less than 30 gpm for periods less than 24-consecutive hours will likely have negligible drawdown at distances beyond 25 ft in a confined aquifer (pg 35).

Site-specific factors include the following:

- i) Locations of neighboring wells are unconfirmed due to limited information on the well permits and logs, however the closest well is estimated at about 430 ft from the project well. In any case, the project well is 165 ft from the property line, so neighboring wells cannot be closer than that measurement (i.e. well over 25 ft)
- ii) Based on area well logs, neighboring wells are 340 ft – 480 ft deep, with a clay layer recorded in the upper 60 ft - 140 ft below grade, with a screened interval from the bottom of the clay layer to total depth (TD).
- iii) The project well report indicates a TD of 152 ft bg and a stabilized flow rate of 19.3 gpm. Proposed development would result in a maximum pumping period of 8 – 10 consecutive hours per 24-hr period at the height of irrigation season.

Based on available information regarding conditions of the site and surrounding area, the project well is, at most, drawing on the upper 60 ft – 90 ft of a confined aquifer, whereas neighboring wells are completed about 100 ft to 300 ft deeper than the project well. Furthermore, the project well meets the criteria stated in the WAA guidance document (pumping less than 30 gpm for less than 24-hrs) and no neighboring wells are less than 25 ft away. Given the construction depths of the wells on and off-site as well as operating constraints, no measurable drawdown is expected at neighboring wells as a result of project well use parameters.

There is one unnamed, dashed blue line stream that flows along the eastern parcel boundary, which is within 1500 ft of the site that is presumed to be a manmade modification of the original waterway to flow between APN 033-040-057 and APN 033-040-011. The unnamed waterway is 1300 ft east of the supply well (Well #2) and 940 ft east of the proposed vineyard.

All run-off from the proposed project area sheets off the hillside and either infiltrates at the valley floor or discharges to the unnamed dashed blue line stream. No channeling or other erosion features were observed within the proposed vineyard area.

Water Supply Capacity:

The water supply well for the proposed new vineyard is located north of the house site. A two-hour pump test was conducted in August 2019 and measured a 19.3 gpm flow rate. The current use of the well is for a single-family residence (0.5 AF/yr).

The existing vineyard is managed by a lease-holder and irrigated with a separate water source (pond). No pond, spring, or surface water will be used to irrigate the proposed vineyard development.

The applicant plans to plant about 8.1 total acres of vines on an 8 ft x 5 ft spacing; water usage for the proposed vineyard is detailed in **TABLE 1** (based on 6 gal/vine/week and a 24-week irrigation season).

TABLE 1 Water Supply Well FUTURE Water Usage Estimate

NEW VB net (>5%)	7.3	ac		
NEW VB net (<5%)	0.8	ac		
TOTAL NEW VB net	8.05	ac		
row spacing	8	ft		
vine spacing	5	ft		
Vines per Acre	1089	vines/acre		
TOTAL Vines	8766	vines		
long-term	144	gal/vine/yr		
establish	144	gal/vine/yr		
long-term	3.87	af/yr	0.48	af/acre/yr
establish	3.87	af/yr	0.48	af/acre/yr

TABLE 2 Water Supply Well Water Usage Estimates

	Current (AF/yr)	Future (AF/yr)
Residential	0.50	0.5
Vineyard	-	3.87
Total	0.50	4.37

Vineyard water usage is estimated at 3.9 AF/yr with a total future water usage of about 4.4 AF/yr (**TABLE 2**). The 19.3 GPM well, which is equivalent to about 31 acre-ft/year, has more than enough capacity to support the proposed irrigation and domestic water uses for the site.

Aquifer Recharge:

Recharge was based on a parcel analysis where the proposed project is to be installed (APNs 033-040-058, 057). The property is zoned almost entirely in the Agricultural Preserve (“AP”) zone and located in a valley floor region of Wooden Valley. For these reasons the “Valley Floor” Parcel Location Factor (1.0 AF/ac/yr) was utilized for the eastern portion of the site and the “Mountain Areas” factor (0.5 AF/ac/yr) was used for the western portion of the site for a total allotment of 39.6 AF/yr (**TABLE 3**).

TABLE 3 Water Allotment for Subject Property

	Area (ac)	Factor (AF/ac/yr)	Allotment (AF/yr)
AW	4.46	0.5	2.23
AP	37.4	1	37.4
Total	41.86		39.63

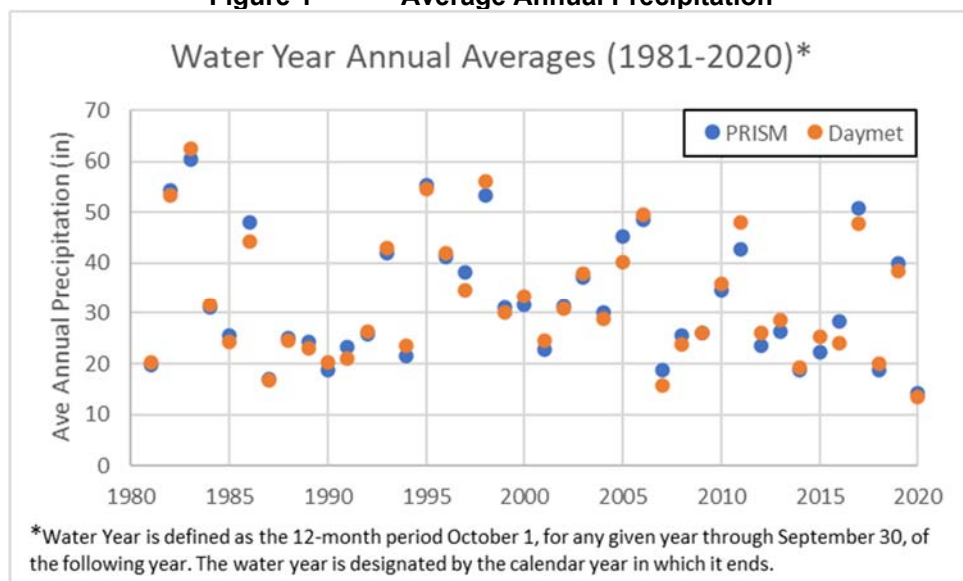
Recharge based on precipitation data used rainfall data downloaded from DayMet [4] and PRISM [3] for the pixel that contained the subject site (see **TABLE 4** and Figure 1). Annual averages were calculated based on the “Water Year”, which is defined by the USGS as the 12-month period October 1, for 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.

TABLE 4 Average Annual Precipitation based on Water Year

Water Year	PRISM	DayMet
	in	in
2011	42.9	48.0
2012	23.5	26.0
2013	26.2	28.5
2014	18.7	19.3
2015	22.2	25.2
2016	28.2	24.1
2017	50.9	47.8
2018	18.7	20.0
2019	40.0	38.4
2020	14.1	13.4
AVE	29	

Figure 1 Average Annual Precipitation



Average Water Year rainfall across both datasets was 29 in/yr. A recharge volume was calculated for the parcel based on the property acreage (41.9 acres) and an infiltration rate of 8%, based on approximate recharge rates of 8% from the Milliken Creek Watershed, which is closest to the project area. [5].

$$(41.9 \text{ acres}) * (29 \text{ in/yr}) * (\text{ft}/12 \text{ in}) * (8\%) = \underline{8.1 \text{ AF/yr}}$$

The net increase in water usage for the proposed vineyard is 3.9 AF/yr (**TABLE 2**). Total usage following development is 4.4 AF/yr, which results in a net positive water balance of 4.3 AF/yr.

Drought years are included in average precipitation of 29 in/yr, with the lowest value in the past 10 years in water year 2020 (13.4 in/yr). Annual rainfall would have to drop below 16 in/yr to result in a net neutral water balance for this project site. In a scenario where precipitation falls below 16 in/yr then irrigation water would be curtailed accordingly, for example using the 2020 data:

$$(41.9 \text{ acres}) * (13.4 \text{ in/yr}) * (\text{ft}/12 \text{ in}) * (8\%) = \underline{3.7 \text{ AF/yr}}$$

As such, water use on the vineyard could be curtailed to 120 gal/vine/yr to result in a net neutral water balance. The reduced water usage is reasonable from a vineyard management perspective. The Napa County Form D, "Phase I Water Availability Analysis" references vineyard irrigation usage 0.2 – 0.5 AF/acre/year, which for this project's vine density (1089 vines/acre), could be as low as 60 gal/vine/yr.

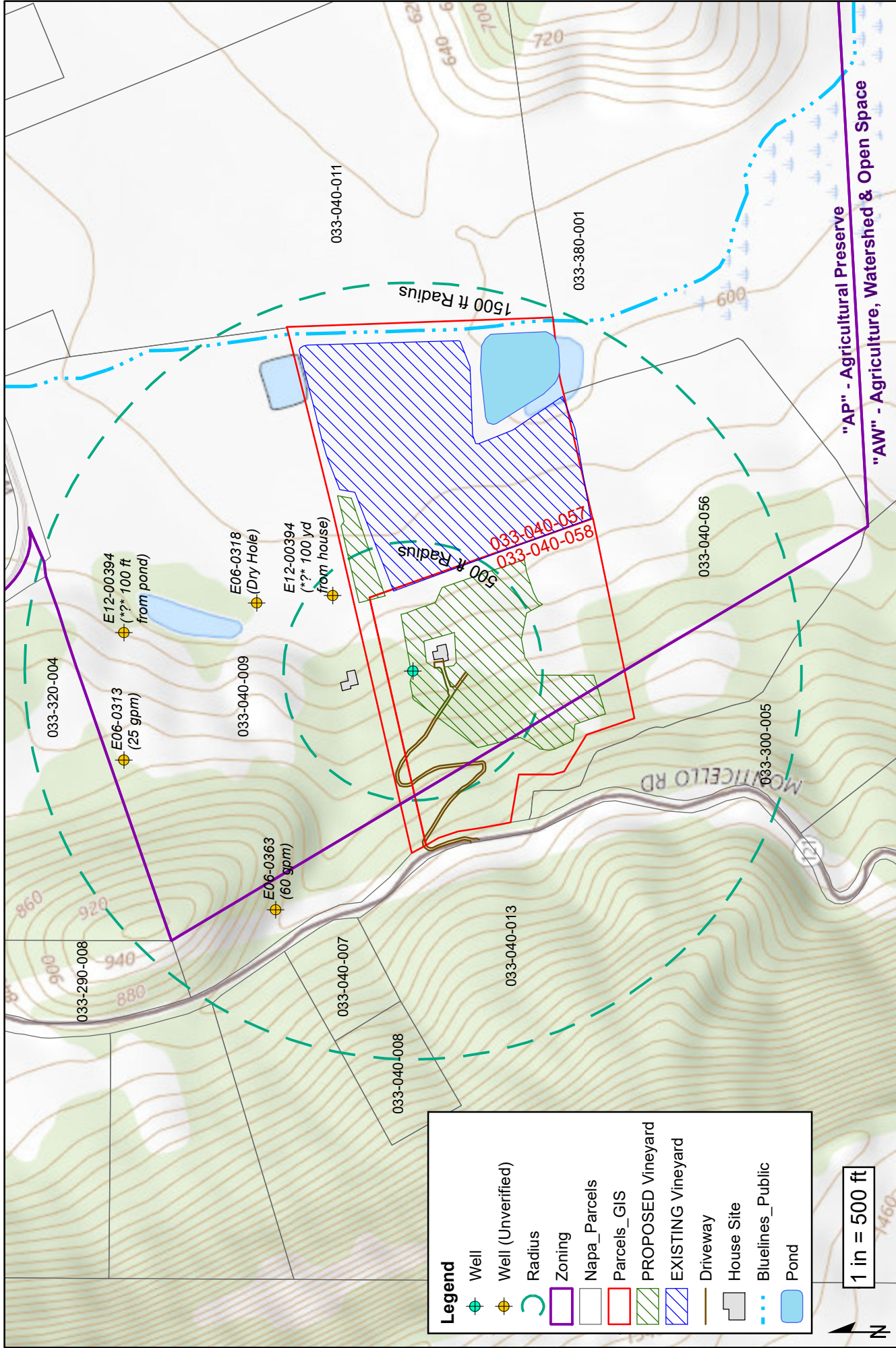
No alternative water sources are required for this project. Well water usage is also below the calculated Water Allotment for the subject site (39.6 AF/yr) (**TABLE 3**)

References:

1. *Custom Soil Resource Report for Napa County, California, Liao Vineyard*, from USDA NRCS Web Soil Survey, March 2021
2. Lambert, G., Kashiwagi, J. et al., *Soil Survey of Napa County, California*, USDA in cooperation with UC Agricultural Experiment Station, August 1978
3. *PRISM Time Series Data, Location: Lat: 38.3681 Lon: -122.1985 Elev: 1125ft*, Details: http://www.prism.oregonstate.edu/documents/PRISM_datasets.pdf
4. 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://doi.org/10.3334/ORNLDAAAC/1840>
5. Updated Hydrogeologic Conceptualization and Characterization of Conditions, Prepared for Napa County, by Luhdorff & Scalmanini Consulting Engineers & MBK Engineers, January 2013
6. USGS California Department of Water Resources and CA Division of Mines map and information sources from 1900-1960, isohyetal_cnty.shp from Napa County GIS Data Catalog.

Attachments:

Liao: WAA Vicinity Map
Attachment D, form
Supply Well Report
Well Logs & Permits for neighboring parcel, 033-040-009



HDVine LLC

PO Box 1686, Middletown, CA 95461
www.HDVine.com
 707-533-3511

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If bar does not measure 1 in
 then map is not to scale.

Liao - WAA Vicinity Map

Drawn by: Sarah Pistone, CPESC #9225

Date: 3/30/21 **File:** ...Liao_A_WAA.mxd

Attachment D

PHASE I WATER AVAILABILITY ANALYSIS

File #: P ____ - ____ Owner: GOLDVISTA HOLDINGS LLC Parcel #: 033 - 040 - 058,057

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 an 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 groundw.

	Area (ac)	Factor (AF/ac/yr)	Allotment (AF/yr)
Total size of parcel(s)	AW 4.46	0.5	2.23
Multiply by parcel location factor	AP 37.4	1	37.4
Allowable groundwater allotment	Total 41.86		39.63

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 <u>planted</u> acres	<u>15.3</u> acres	<div>No well water used for existing vineyard</div>
Multiply by number of vines/acre	x <u>1089</u> vines per acre	
Multiply by gallons/vine/year	x <u>-</u> gallons of water per vine per year	
Divide by 325,821 gallons/af	= <u>-</u> af of water per yr used for vineyard irrigation	

Future Usage:

Number of <u>planted</u> acres	(NEW) <u>8.05</u> acres	(7.3 ac > 5%; 0.75 ac <5%)
Multiply by number of vines/acre	x <u>1089</u> vines per acre	
Multiply by gallons/vine/year	x <u>144</u> gallons of water per vine per year (long-term)	
	<u>144</u> gallons of water per vine per year (establish)	
Divide by 325,821 gallons/af	= <u>3.9</u> af of water per yr used (vineyard long-term)	
	<u>3.9</u> 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:

Residential	<u>0.5</u> af/yr
Farm Labor Dwelling	<u> </u> af/yr
Winery	<u> </u> af/yr
Commercial	<u> </u> af/yr
Vineyard(long-term)	<u>-</u> af/yr

Future Usage:

Residential	<u>0.5</u> af/yr
Farm Labor Dwelling	<u> </u> af/yr
Winery	<u> </u> af/yr
Commercial	<u> </u> af/yr
Vineyard(long-term)	<u>3.9</u> af/yr

“ (establish) _____ af/yr

Other Agriculture	_____ af/yr
Landscaping	_____ af/yr
Other Usage	_____ af/yr
TOTAL	0.5 af/yr

“ (establish) _____ af/yr

Other Agriculture	_____ af/yr
Landscaping	_____ af/yr
Other Usage	_____ af/yr
TOTAL	4.4 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
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Ray's Well Testing Service Inc.
 4853 Vine Hill Rd, Sebastopol Ca 95472
Phone 707 823 3191 **Fax** 707 317 0057 **Lic#** 903708

CUSTOMER INFORMATION

REPORT #: 11191 - By: Matt Owens	DATE OF TEST: 8/15/19
CUSTOMER NAME: Central Richland LLC	CONTACT:
AGENT NAME: David Barker - Better Homes and Gardens	CONTACT: 707 738 2650
PROPERTY ADDRESS: 3580 Monticello Rd, Napa CA 94558	SENT TO: david@napabroker.com

WELL DATA

LOCATION OF WELL:	In field to left of house
TYPE OF WELL:	Drilled
DEPTH OF COMPLETED WELL:	152 Feet - As indicated by installer records
DIAMETER OF WELL CASING:	5" PVC
SANITARY WELL SEAL (PLATE SEAL AT OPENING OF WELL CASING):	Yes
ANNULAR SEAL (IN-GROUND SEAL OF BOREHOLE):	Unknown - Please Refer to well log
PUMP HP AND TYPE:	1 HP 230V Submersible, 13GS10, 1.25" tee, #10-4 cable
DEPTH OF PUMP SUCTION:	140 Feet - As indicated by installer records

WATER PRODUCTION RESULTS

WATER LEVEL AT START (STATIC LEVEL):	33.6 Feet	FLOW RATE AT START:	20 GPM
FINAL PUMPING LEVEL:	58 Feet	FINAL FLOW RATE:	19.3 GPM
WATER LEVEL DRAWDOWN:	24.4 Feet	TOTAL LENGTH OF TEST:	2 Hours

CONSTANT PUMPING LEVEL INFORMATION

STABILIZED PUMPING LEVEL:	58 Feet	STABILIZED FLOW RATE (YIELD):	19.3 GPM
DURATION OF CONSTANT PUMPING LEVEL:	1 Hour	TOTAL YIELD:	1,158 gallons

WATER SYSTEM INSPECTION

WELL PUMP	Functional	TECHNICAL INFO: 18.8 GPM @ 60 PSI @ 40', 8.8 amps, installed 1996
ELECTRICAL	Functional	TECHNICAL INFO: 15 amp breaker in garage sub panel
PRESSURE TANK	Functional	TECHNICAL INFO: 86 gallon WX-302, tank dated 1995, 35 PSI air charge
STORAGE TANK	None	TECHNICAL INFO:
BOOSTER PUMP	None	TECHNICAL INFO:

WATER QUALITY TESTING

THE FOLLOWING SAMPLES ARE BEING ANALYZED. PLEASE REFER TO FOLLOW-UP REPORT FOR RESULTS.		
Residential + Irrigation Package	DATED: 8/15/19	TURNAROUND: Rush Due 8/20/19
	DATED:	TURNAROUND:
	DATED:	TURNAROUND:
	DATED:	TURNAROUND:

SEE NEXT PAGE FOR FURTHER INFORMATION...

DATE: 8/15/19

ADDRESS: 3580 Monticello Rd, Napa CA 94558

COMMENTS:

1. The recharge rate at the end of the test was 19.3 gallons per minute. This test may not represent the long term or seasonal yield.
2. The water was visibly clear, sediment and odor free for the duration of the test.
3. The well pump pressurizes the 86 gallon WX-302 pressure tank. The operating pressure range is set 40 to 60 PSI. This system pressurizes water for domestic and irrigation use.
4. The water treatment system includes a 13" x 54" Nextsand media filter (set to backwash 1/12 days), a Kinetico alternating twin softener (brine tank 1/3 full), a 10" x 48" Cullneu neutralizing filter (unit is bypassed and unplugged), and a Aquafine 120V ultraviolet disinfection unit (unplugged, last service date unknown).
5. The vineyard on the property is irrigated with another water source. This source was not tested or inspected.

RECOMMENDATIONS:

1. The water tests indicate the water is acidic post treatment, high in iron and high in manganese. Recommend servicing treatment system and replacing bypassed neutralizing filter. We are partnered with Northcoast Waterworks and can provide a quote at your request.

Thank you for allowing us to do your well inspection!

APPROVED BY: NICK BRASESCO



Water levels and well depth are measured as feet below top of well casing unless otherwise noted.

All wells and springs are subject to seasonal and yearly changes in regards to water yield, production and quality. Wells may be influenced by creeks or other water sources and are likely to yield less water during dry months of the year; typically August, September, & October. We make no predictions of future water production or water quality.

This report is for informational use only and is in lieu of and supercedes any other representation or statements of the agent or employee of the company, and all other such representations or statements shall be relied upon at the customer's own risk. The data and conclusions provided herein are based upon the best information available to the company using standard and accepted practices of the water well drilling industry. However, conditions in water wells are subject to dramatic changes in short periods of time. Therefore, the data and conclusions are valid only as of the date of the test and should not be relied upon to predict either the future quantity or quality the well will produce. The company makes no warranties either expressed or implied as to future water production and expressly disclaims and excludes any liability for consequential or incidental damages arising out of the breach of any expressed or implied warranty of future water production or out of any further use of the report by the customer.

**QUADRUPLICATE
For Local Requirements**

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page 40 of

Owner's Well No.

No. **1078568**

Date Work Began 6-8-06 Ended 6-12-06

Local Permit Agency Napa County

Permit No. EN-0363 Permit Date 6-8-06

mm 8/27/07
DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.	
LATITUDE	LONGITUDE
APN/TRS/OTHER	

GEOLOGIC LOG

ORIENTATION () ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)
DRILLING METHOD rotary FLUID mud

DEPTH FROM SURFACE
Ft. to Ft.
0 65 clay & rock
65 260 broken up shale &
260 340 blue shale

WELL OWNER

Name
Address 1115 Wooden Valley rd.
City Napa County Napa
APN Book Page Parcel 033-040-009
Township Range Section

WELL LOCATION
Lat DEG. MIN. SEC. N Long DEG. MIN. SEC. W

LOCATION SKETCH

Activity () ☒ NEW WELL
☐ MODIFICATION/REPAIR
 — Deepen
 — Other (Specify)
☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")
USES ()
WATER SUPPLY
 — Domestic — Public
☒ Irrigation — Industrial
MONITORING
TEST WELL
CATHODIC PROTECTION
HEAT EXCHANGE
DIRECT PUSH
INJECTION
VAPOR EXTRACTION
SPARGING
REMEDICATION
OTHER (SPECIFY)

WEST 3 mi EAST Northridge
Wooden Valley
SOUTH

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.**

RECEIVED

JAN - 3 2007

DEPT. OF
ENVIRONMENTAL MANAGEMENT

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 70 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 30 (Ft.) & DATE MEASURED 6-12-06
ESTIMATED YIELD 60 (GPM) & TEST TYPE Air Lift
TEST LENGTH 3 (Hrs.) TOTAL DRAWDOWN 320 (Ft.)
* May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 340 (Feet)
TOTAL DEPTH OF COMPLETED WELL 340 (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										Ft.	to	Ft.	CE- MENT (✓)
0	27		14"	X				PLASTIC	6"	200					0	27	X		
27	60		10 3/8"	X				"	"	"					27	340			WELL PACK
60	340		10 3/8"					FACT PREF	"	"	"	5/32							

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 Pulliam Well Drilling
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 3877 Piedmont Av. Napa CA 94558
CITY Napa STATE CA ZIP 94558
Signed Pulliam DATE SIGNED 6-16-06 248677
C-57 LICENSED WATER WELL CONTRACTOR C-57 LICENSE NUMBER

**QUADRUPLICATE
For Local Requirements**

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

mm 8/27/07

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.									
LATITUDE					LONGITUDE				
APN/TRS/OTHER									

Page of
 Owner's Well No. 5-30-06 No. **1078567**
 Date Work Began 6-6-06 Ended 6-6-06
 Local Permit Agency Napa County
 Permit No. E06-0813 Permit Date 5-23-06

GEOLOGIC LOG

ORIENTATION () ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)
 DRILLING METHOD rotary FLUID Mud

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION Describe material, grain size, color, etc.
0 to 70	clay & rock
70 to 120	broken up rock & gravel
120 to 220	clay
220 to 300	broken up shale and rock
300 to 358	blue shale

WELL LOCATION

Name
 Mailing Address
 City STATE ZIP
 Address 1155 Wooden Valley rd.
 City Napa
 County Napa
 APN Book Page Parcel 033-040-009
 Township Range Section
 Lat DEG. MIN. SEC. N Long DEG. MIN. SEC. W

LOCATION SKETCH

WEST EAST
Wooden Valley rd.
Monticello rd.
 SOUTH NORTH

ACTIVITY ()

☒ NEW WELL
☐ MODIFICATION/REPAIR
 Deepen
 Other (Specify)
☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

USES ()

WATER SUPPLY
☒ Domestic Public
☒ Irrigation Industrial
☐ MONITORING
☐ TEST WELL
☐ CATHODIC PROTECTION
☐ HEAT EXCHANGE
☐ DIRECT PUSH
☐ INJECTION
☐ VAPOR EXTRACTION
☐ SPARGING
☐ REMEDIATION
☐ OTHER (SPECIFY)

RECEIVED

JAN - 3 2007

DEPT. OF
ENVIRONMENTAL MANAGEMENT

TOTAL DEPTH OF BORING 380 (Feet)
 TOTAL DEPTH OF COMPLETED WELL 358 (Feet)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 70 (Ft.) BELOW SURFACE
 DEPTH OF STATIC WATER LEVEL 50 (Ft.) & DATE MEASURED 6-6-06
 ESTIMATED YIELD 25 (GPM) & TEST TYPE AIR LIFT
 TEST LENGTH 3 (Hrs.) TOTAL DRAWDOWN 340 (Ft.)
 * May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S)					
		TYPE ()				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)
		BLANK	SCREEN	CON- DUCTOR	FILL PIPE		
0 to 25	14"	X				PLASTIC	8"
0 to 78	12"	X				"	"
78 to 358	12"					FAST PIPER	"

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL			
	TYPE			
	CE- MENT ()	BEN- TONITE ()	FILL ()	FILTER PACK (TYPE/SIZE)
0 to 25	X			
25 to 358				WELL PACK

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 Pulliam Well Drilling
 (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
 ADDRESS 2877 Piedmont Ave. Napa, Ca 94558
 CITY Napa STATE Ca ZIP 94558
 Signed Pulliam DATE SIGNED 6-16-06
 C-57 LICENSED WATER WELL CONTRACTOR C-57 LICENSE NUMBER 248677