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Water Availability Analysis

Water Availability Analysis (WAA)

Prepared for:

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1075 Buchli Station Road
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Revision 4
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ATTACHMENTS

EXECUTIVE SUMMARY

Bouchaine is the oldest continuously operating winery in the Carneros District—a winery that began making wine long before the region earned its reputation for great Chardonnays and Pinot Noirs. The land was first owned by a Missouri native named Boon Fly; he grew grapes and fruit trees on the property in the late 1880s. Subsequent owners included an Italian winemaker named Johnny Garetto (1927), Beringer Brothers of St. Helena (1951), and a partnership (including Gerret and Tatiana Copeland, the current owners) bought the run-down winery and surrounding land in 1981. That ownership set immediately to rejuvenate the winery and grounds, replanting the vineyards and improving the buildings (dating to the 1920s) with various winery equipment upgrades and the siding for the striking redwood exterior façade was milled from the large (and historic) redwood wine tanks. These efforts, and the upgrading of the quality and variety of wines produced, continued for over two decades. In 1993, the Copelands became the sole owners. By 1996, the overall renovation of the winery had been completed. Sixty surrounding acres were purchased in 2000.

The proposed project, named the "Bouchaine Winery Improvement Project," comes more than 20 years after the last major modification of the Use Permit, and is intended to:

--Improve the appearance and usefulness of the existing property with minimal impacts to the site (building footprint), neighbors, and the Carneros Region

--Improve the efficiency of winery business operations by placing all management, operating and sales staff in close proximity in one modified building and one new building (eliminating two temporary office trailers) and upgrading communications and data management capabilities

--Provide a substantially improved visitor experience by adding a new Hospitality Center/Office Building to allow for an improved wine tasting room experience for casual visitors, create additional and improved facilities for by-appointment-only friends of the winery for sit-down tastings, wine and food pairings, small to medium sized special chef dinners and educational events. The Marketing Plan is proposed to be revised to reduce/eliminate "high impact" events such as "April in Carneros" in favor of more intimate events.

--Improve the winery operations by increasing the size of the crush pad/bin storage areas, and converting an outside storage area to enclosed dry storage to support the bottling/packaging/shipping activities, (with no requested increase to the existing 225,000 gallons per year permitted capacity).

--Improve employee and visitor parking capacity (to substantially reduce/eliminate periodic visitor parking along Buchli Station Road and in the vineyard margins) while controlling the daily maximum visitation via the Marketing Plan changes noted above.

Finally, the Bouchaine Winery Improvement Project includes a phased construction schedule to allow continuous operations and visitor experiences during the construction of the new Hospitality Center/Office Building, the modified Production Building additions, and interior remodeling of the existing, renamed Visitor Center/Office/Storage building.

The Bouchaine Winery Improvement Project is being proposed to improve the efficacy of operations and update and improve the visitor experience. Overall, the Use Permit Modification

request will result in a moderate increase of the use of the site while improving efficiencies and updating our current use permit capacities.

As required by the Napa County Department of Public Works, and most recently requested by Mr. Hade in his August 13, 2015 "Completeness Letter," this Water Availability Analysis (WAA) has been revised and updated to be consistent with the May 12, 2015 WAA Guidance Document. This Tier I and II analysis incorporates "existing water usage for employees and current visitation/events", actual "vineyard irrigation water use" data, and comparison of both "worst case" and more realistic total water uses, as a part of the Bouchaine Winery Improvement Plan Use Permit Modification Application. The following information is provided to meet this requirement.

In particular, the most recent revisions to the WAA include:

1. Use of Napa County water use factors (as specified in the latest WAA guidance) for the preliminary evaluation/estimation of water use for both the Existing and Future (with proposed project) uses at the property (Sections 2 and 4)
2. Use of revised, documented assumptions and actual on-site information to upgrade the water use estimates for both the Existing and Future cases (Sections 3 and 4)
3. Inclusion of a detailed discussion of past, present and future water sources for the property (Section 5)
4. Inclusion of an aquifer recharge study consistent with the requirements of the WAA Guidance Document (Section 6 and Attachment 8)
5. Inclusion of results from a search conducted (and recently updated) to identify nearby existing wells (and associated well construction information), and additional evaluation of potential "well to well interference" impacts from the future case (via comparison to Appendix F) and a site specific impact evaluation conducted by O'Connor Environmental, Inc. (Section 7 and Attachment 8).

WATER USE CALCULATIONS

The following tables provide a summary of our estimates of "actual" water use at the property with approaches 1 and 2 above:

Approach 1--Using Napa County Use Factors (as requested) for "Worst Case Analyses"

Table A—Summary of "Worst Case" Estimated Total Water Use using Napa County Use Factors (for Existing and Future cases)

Type of Estimated Water Use	Existing (in acre-feet/year)	Future (in acre-feet/year)
Vineyard Irrigation Use	98.79	97.66
Landscape Irrigation Use (includes "Domestic")	0.67	1.12
Winery Process Water Use	3.22	4.84
Staff Water Use (included in "Landscape Irrigation")	--	--
Visitor Water Use (included in "Landscape Irrigation")	--	--
Total Worst Case Estimated Use	**102.68**	**103.62**

The incremental increase in water use for the Future case is 0.94 acre-feet per year, or a 0.92% increase over Existing, using this approach.

Approach 2--Using "Reasonable," Site-Specific Use Factors (as described herein):

Table B—Summary of "Reasonable Case" Estimated Total Water Use using revised, site-specific estimating approaches and actual water use data documented herein (for Existing and Future cases)

Type of Estimated Water Use	Existing (in acre-feet/year)	Future (in acre-feet/year)
Vineyard Irrigation Use*	12.34	12.12**
Landscape Irrigation Use	0.41	0.68
Winery Process Water Use	3.22	4.84
Staff Water Use	0.14	0.20
Visitor Water Use	0.17	0.43
Total Reasonable Case Estimated Use	**16.28**	**18.27**

Footnotes:

*The Vineyard Irrigation Uses (in both the Existing and Future cases) do not result in additional well pumping because the water comes from off-site, non-groundwater sources or from the Winery Process Water (already accounted for in Table B) and stormwater runoff (from the open portions of the process area) out of the existing Process Water Pond.

**The future case is slightly less than the existing case due to a reduction in total vineyard area.

The incremental increase in water use for the Future case is 1.99 acre-feet per year, or a 12.22% increase over Existing, using this approach. In both the Existing and Future cases, dividing the estimated water use by the facility property acreage results in a Factor (0.159 and 0.179 acre-feet/acre-year, respectively) that is substantially less that the 0.3 acre-feet/acre-year Factor that is "acceptable" (per the WAA Guidance Document) in the highly impacted MST region in Napa County. The WAA text following discusses both these approaches in detail and includes all calculations.

WATER SOURCES

The existing water system consists of

a) Four on-site Water Wells (with only Wells #1 and #3 providing water for potable domestic and process water uses) with a total capacity of 15,840 gallons/day of groundwater. Landscape irrigation uses for groundwater from Wells #2 and #4 are not included in this total. These wells are described further in previously submitted figures, well logs and well investigation reports.

b) One large winery process water pond with pump and aeration currently used for process wastewater and stormwater (from the open areas of the process area) storage and treatment only; historic use for vineyard irrigation)

c) Five 10,000 gallon concrete tanks for potable water storage (in the Production Building)

d) Large (71,000 gallon) firewater tank

e) Smaller (10,000 gallon) irrigation storage tank (not currently used).

f) There is also a direct connection to a nearby offsite reservoir (Reservoir 3 to the south of the Bouchaine property; see Figure 2) that can supply either or both 1) diverted stream water from the unnamed "Blue Line Stream to the east and south from the Bouchaine facility (see also creek diversion point 1 and Reservoir 2 on Figure 2) and 2) Sonoma Valley County Sanitation District recycled water (for vineyard irrigation only) which is received via pipeline at Reservoir 2 (see Figure 2). Per Mr. Hade's direction, these valuable sources of water have not been included in this analysis, for either the "Existing" or "Future" cases.

The controlled use of all these sources of water can satisfy the present "Worst Case" daily use and annual demand for the facility.

Finally, Bouchaine is adding a new well (Well #6--completed) and pump with a capacity of 7,200 gallons per day of groundwater, for a total supply of 23,040 gallons per day for potable water from on-site Wells #1, #3, and #6.

Future

As noted above, Well #6 is being added to the system; when completed it will have a capacity of 7,200 gallons per day of groundwater, for a total supply of 23,040 gallons per day for potable water from on-site Wells #1, #3, and #6. In addition, a new 12,000 gallon fire water tank will be added for the new Hospitality Center. We are also submitting data and facility improvement information that will allow Process Water and stormwater runoff from the open process areas (that flow to the existing Process Water Pond) to be used as vineyard irrigation water. Also, as noted previously, for additional vineyard irrigation needs/flexibility, Bouchaine is currently in negotiations to add a future connection to the Napa County Sanitation District/Los Carneros Water District recycled water system (for vineyard irrigation and possible landscape irrigation only). Again, this potential source has not been considered in this analysis.

RECHARGE ANALYSIS

O'Connor Environmental, Inc. (OE-I) performed the necessary evaluation of recharge for the Bouchaine Vineyards, Inc. project (see Attachment 8). The OE-I investigation evaluated both "normal precipitation" and "drought" scenarios and concluded that average water year recharge was approximately 3.9 inches per year, or 301.3 acre-feet per year over the recharge area. During drought conditions, recharge was significantly lower at approximately 0.7 inches per year, or 54.1 acre-feet per year over the recharge area. OE-I further stated that "the recharge estimates are conservative in that they represent recharge from infiltration of precipitation only. Significant additional recharge may occur through streambed infiltration, groundwater inflows from outside the defined project recharge area, and/or from excess irrigation."

It should also be noted that both the "normal precipitation" and "drought condition" recharge quantities significantly exceed anticipated groundwater use (e.g., 18.10 acre-feet/year; see Table B above) from the Bouchaine Winery Improvement Project.

LOCAL WELL LOCATION/DATA RESEARCH AND WELL INTERERENCE EVALUATION

Since the middle of July, we have conducted additional outreach efforts with surrounding property owners/occupants to assist in identifying any existing wells within a 500-foot radius of the three primary wells on the Bouchaine Vineyards, Inc. site (and to collect such well-specific information as depth, seal location(s), screened interval, and pumping rates). We attempted to contact the owners/occupants of 10 nearby, surrounding properties (and actually talked with 8 owners or owner representatives of those properties). In summary, the data available from this research identified 2 nearby off-site wells within 500' of any of the three active wells on-site. Given the projected use of those three on-site wells (the future case is significantly less than historic uses), the distances from the three on-site wells, and the relative ground elevation and depth of the 2 identified off-site wells within 500', we do not believe either of those 2 nearby local wells will be significantly impacted after completion of the proposed project. This conclusion is drawn from, and supported by, a) comparative evaluation with various example cases in Appendix F of the WAA Guidance Document, and b) a site- and well-specific analysis performed by O'Connor Environmental, Inc. (Attachment 8) The WAA text (Section 6) provides additional support for this conclusion.

SUMMARY AND CONCLUSIONS

As presented above, the "reasonable case" estimated overall water use for the Bouchaine Winery after approval of the Use Permit Modification for the Bouchaine Winery Improvement Project is substantially less than (approximately 53% to 60% of) the parcel's potential allowable water allotment if calculated with the MST water deficient area value of 0.3 acre-foot/acre (as specified in the WAA Guidance Document). This is true even when "double counting" the Vineyard Irrigation Use. With a variety of sources of water on site now and in the future (as described in detail in the text of the WAA) the facility should have no trouble meeting its water needs with very minimal impacts to local and regional groundwater resources. Recharge analysis and well interference evaluations demonstrate that the proposed project will not exceed WAA Guidance Document levels of impact. Therefore, this Water Availability Analysis should be sufficient to satisfy the requirements of the Public Works Department and the Planning Division

SECTION 1—INTRODUCTION AND BACKGROUND INFORMATION

INTRODUCTION

As required by the Napa County Department of Public Works, and most recently requested by Mr. Hade in his August 13, 2015 "Completeness Letter," this WAA has been further revised and updated to be consistent with the May 12, 2015 WAA Guidance Document. This Tier I and II analysis incorporates "existing water usage for employees and current visitation/events", actual "vineyard irrigation water use" data, and comparison of both "worst case" and more realistic total water uses, as a part of the Bouchaine Winery Improvement Plan Use Permit Modification Application. The following information is provided to meet this requirement.

SITE PLAN

Existing

The Use Permit Modification drawings UP0.0, UP1.0, and UP1.1 have been provided with the overall Application and have been updated again as part of this submittal. These drawings provide the existing site conditions. The site currently consists of existing production and visitor center/office/storage buildings, parking and landscape areas and existing infrastructure. These drawings also include a recent aerial photograph overlay indicating the location of the project parcel and approximate well locations. Figure 1 (attached hereto) further defines the existing conditions. Figure 2 documents the off-site sources of vineyard irrigation water as described in Section 3 herein. Table 1A (attached hereto) provides background information for water use by staff, visitors, and Marketing Plan activities.

Future

The Use Permit Modification Conceptual Site Plan (Drawing UP2.0; attached hereto) is also part of the overall Application and highlights the improvements proposed (a new Hospitality Center/Office Building and parking lot, the modified entrance drive, the addition of interior dry storage space and slightly expanded open process areas for the Production Building, and interior revisions to the existing/renamed Wine Club/Office Building). The future project also includes the possibility of utilizing Process Water and stormwater runoff from the open process areas that are piped to the on-site Process Water Pond. Figure 2 identifies future sources of off-site water for vineyard irrigation. Table 1 (attached hereto) provides similar information as Table 1A for the future scenario.

PROJECT DESCRIPTION

Bouchaine Vineyards Inc., located at 1075 Buchli Station Road, Napa, California (APN 047-320-031) is applying for a Use Permit Modification to remodel the interior of the existing Visitor Center/Office/Storage Building, modify the Production Building to increase the enclosed dry storage area and expand the exterior process area, construct a new Hospitality Center/Office Building, modify and improve the visitor entrance road and expand visitor parking options, and make other minor improvements to the operations of the facility. The proposed project also includes minor modifications to the existing process water management system, including lining of the Process Water Pond.

The Bouchaine Winery Improvement Project also includes an increase in employees, and adjustments to the existing visitation numbers and marketing plan events to upgrade the visitor experience for an increased number of annual visitors (while eliminating existing permitted high impact/high number of visitor events). No increase in permitted production capacity is proposed.

ALLOWABLE WATER ALLOTMENT

Prior to the January 7, 2015 Water Availability Analysis (WAA) Policy Report, the property was able to address this question quite simply. For example:

Parcel acreage = 102.28 acres

Parcel Location Factor = 1 acre-foot/acre-year (Valley Floor/Carneros Region)

Allowable Water Allotment = 102.28 acre-feet/year

Based on this simplified approach, the allowable water allotment for the site would have been 102.28 acre-feet/year.

This option is no longer available, given the May 12, 2015 adoption of the WAA "guidance document", as the Carneros Region is now considered an "All Other Area" and a more detailed evaluation, based on historical regional data and specific information regarding nearby well(s) to the subject property (leading to a "well to well interference study"), is required. This report has been prepared as a Tier I and II WAA consistent with that guidance document.

Unfortunately, to date and at this time, the County of Napa has not been able to/cannot currently offer access to the State of California Well Data Base to allow us to obtain the necessary well data. Equally important, the January 2013 Hydrogeological Study (LSCE and MBK) that is the basis for much of the May 12, 2015 WAA "guidance document" contains very little information about the Carneros Region. As discussed in more detail in a later section of this WAA, we have conducted a survey of surrounding, nearby parcels to identify any existing wells within 500 feet of any of the three primary wells (Wells #1, #3, and #6) on-site, identified several types of well-specific data, and conducted a two-part Well Interference Evaluation (comparing on-site info to Appendix F example evaluations and performing a site- and well-specific evaluation).

Alternatively, a much more stringent allowable water allotment (valid for the currently stressed "MST Groundwater Deficient Area" per the WAA guidance document) allows a simplified Water Use Criteria of 0.3 acre-foot/acre and could serve as an alternate approach to setting an allowable water allotment for the property. Sections 3 & 4 of this WAA provide actual and estimated (using reasonable site specific assumptions) water use on the property with (Future) and without (Existing) the proposed project. We will show that the existing and anticipated future groundwater use at the future property is substantially less than 0.3 acre-foot/acre.

SECTION 2—COUNTY OF NAPA WATER USE FACTORS

Based on pages 19 through 21 of the original Use Permit Application submitted on December 18, 2014, our initial analysis of water use is based on the County of Napa use factors presented. The ones used are:

Vineyards*:	Irrigation only	0.2 to 0.5 acre-feet per acre per year

	Heat Protection	0.25 acre-feet per acre per year
	Frost Protection	0.25 acre-feet per acre per year
Winery:	Process Water	2.15 acre-feet per 100,000 gallons of wine per year
Domestic and Landscaping**		0.5 acre-feet per 100,000 gallons of wine per year

* Per direction from Mr. Hade in his June 25, 2015 completeness letter, we have been directed to use a combined Winery Use Factor of 1.0 as an initial, worst case Use Factor.

** No other, or more detailed, use factors were available.

SECTION 3—REASONABLE CASE WATER USE FACTORS AND ALTERNATE WATER SOURCES

Bouchaine Vineyards, Inc. and Firma Design Group have developed what we believe are more detailed and accurate use factors based, in many cases, on site specific records collected from the Bouchaine Vineyards, Inc. site. We have also provided considerable information herein about alternate sources of water (vs. pumping groundwater for all possible uses at the site) that have been, and are currently being, used by Bouchaine (and will be used in the future). The following subsections identify and document these factors.

Vineyard Irrigation Use

The following five subsections present five alternative ways to look at total vineyard irrigation water use in both the Existing and Future cases based on actual conditions at the site. We have looked at all five in some detail to provide support for our position that the "Worst Case" alternative evaluated in Section 2 is not appropriate for the Bouchaine Vineyards, Inc. property in the far southern Carneros Region of Napa County. After consideration of the five options, we have specified our choice for the most reasonable and accurate methodology for determining total water use for the Bouchaine property/project.

1. More Reasonable Revised Factor for Vineyard Irrigation (delete heat and frost protection uses)

The method for estimating total amount of vineyard irrigation use under the prior section was (likely a "worst case") Napa County water use factor of 1.0 acre-feet/acre-year. However, in this case (both Existing and Future operations), it should be noted that the factor used includes irrigation, heat protection and frost protection water uses. The prior approach substantially overestimates water use in the vineyards at Bouchaine Vineyards, Inc. because the Carneros facility does not use water for either heat protection (due to the cooler Carneros region weather vs. upvalley regions) or frost protection (due to the more moderate weather in the Carneros region and the absence of required/appropriate facilities/equipment in the vineyards; e.g., spray systems). Eliminating the factors for heat protection and frost protection (each 0.25 acre-feet/acre-year, or a total of 0.5 acre-feet/acre-year) is a first cut at evaluating site specific realities, and yields a more realistic use factor of 0.2 to 0.5 acre-feet/acre-year for both existing and future cases.

2. More Reasonable Revised Factor (reduced vineyard irrigation factor due to vine age and mild weather)

It should also be noted that the vines at the Bouchaine Vineyards, Inc. facility are 11 to 31 years old and that the irrigation method used is "drip irrigation." Due to the vine ages (and associated development of very deep root systems) and location in a very mild climatological area (due to the proximity to San Pablo Bay), vineyard irrigation rates have been, in practice, at the low end of/less than the standard Napa County factor of 0.2 to 0.5 acre-feet/acre-year (see also Subsections 3 and 4 below). We believe that the irrigation factor should be more like 0.1 to 0.2 acre-feet/acre-year when considering these actual conditions and potential future irrigation developments (e.g., vineyard replanting).

3. Off-site Source of Surface Water (Diversion from Unnamed Blue Line Creek)

Figure 2 illustrates an existing vineyard irrigation system permitted and operated by Buchli Station Watershed Company (BSW), of which Bouchaine Vineyards, Inc. is one of four partners. The system's facilities and operations are described herein. Water is diverted from the Unnamed Blue Line Creek southeast from the developed portions of the Bouchaine Vineyards, Inc. facility at the location identified as Reservoir 1 under an existing water rights document from the State Water Resources Control Board (dated September 5,1995; see Attachment 3 hereto). From there, the diverted water is pumped southwesterly to Reservoir 2 (immediately east of the very southeast corner of the Bouchaine Vineyards, Inc. property. Two existing pumps are present at Reservoir 2: one to irrigate the surrounding vineyards east of Buchli Station Road, and one to transfer irrigation water via existing piping southwest to Reservoir 3. Reservoir 3 also receives water from Reservoir 4 to the northwest. Water in Reservoir 3 is pumped to the northwest for irrigation of the Rombauer vineyard, north for irrigation of the Pacific vineyard, and north and northeast for irrigation of the Bouchaine vineyards. Flow meters are installed at several locations to track water volumes pumped to each parcel. The data for water pumped to Bouchaine (calendar year 2007 to 2015) is tabulated in the table at the end of the next subsection.

4. Alternate Off-site Water Source (Recycled Water)

It should also be noted that the requirement for vineyard irrigation water is currently able to be met entirely by the use of recycled (tertiary treated processed) wastewater from the nearby off-site Reservoirs 2 & 3 (See Figure 2 attached hereto and Subsection 3 immediately above) as provided by the Sonoma Valley County Sanitation District. A copy of this existing contract is provided in Attachment 4 hereto. This recycled water is provided via an existing pipeline to Reservoir 2, and (as above) transferred to Bouchaine Vineyards, Inc. via Reservoir 3 and dedicated pump and pipeline.

For clarity, at the present time, and using the approaches described in Subsections 3 and 4, no on-site groundwater is used for winery irrigation. These forward thinking, "green" solutions (described in Subsections 3 & 4) to concerns about groundwater availability in the Carneros Region should be viewed as a very positive action by Bouchaine Vineyards, Inc. in their current and future operation of the facility.

Bouchaine Vineyards, Inc. is also negotiating a contract (see Attachment 5 hereto) for an additional source of recycled wastewater for vineyard (and possibly landscape) irrigation uses from the Napa County Wastewater District and the Los Carneros Water District when delivery lines (now under

construction) are completed to the area of Las Amigas Road (in late 2015). This recycled water should serve as "back-up" to the water from the Sonoma Valley County Sanitation District and increase the likelihood of "guaranteed" water availability from "green sources" and substantially reduce the likelihood of using any groundwater pumped at the site for vineyard irrigation use. Therefore, using this source of vineyard irrigation water, there is actually a further reduction in vineyard irrigation water uses (from groundwater) to zero (0) in both the Existing and Future cases.

Actual water use for vineyard irrigation at the Bouchaine Vineyards, Inc. property has been documented and recently provided by Josef Shepard of Walsh Vineyard Management. That data is summarized on the following table:

ACTUAL VINEYARD IRRIGATION WATER USE BY YEAR & SOURCE (in acre-feet/year)

Year	Diverted Surface Water	Pumped to Irrigation Tank	Sonoma County Recycled Water	Total	Related Factors
2007	9.85	1.46	N/A	11.31	
2008	5.39	2.15	N/A	7.54	
2009	10.53	1.81	N/A	12.34	
2010	7.19	1.53	N/A	8.72	
2011	1.79	1.01	N/A	2.80	Last wet year
2012	7.72	1.93	N/A	9.65	Drought
2013	5.89	0.55	N/A	6.46	Drought
2014	0	0	8.47	8.47	Drought
2015 (to date)	5.56	0	0	5.56	4th Year of Drought
Total Actual Vineyard Irrigation Use (8+ years)	53.92 Avg: 6.74/year	10.44 Avg: 1.16/year	8.47 Avg: 8.47/year	72.83 Avg: 8.09/year	

If converted to a use factor, the average factor over the years 2007 to 2015 (assuming the entire 102.28 acre property was planted to grapes) would be 0.079 acre-feet/acre-year. These very low vineyard irrigation uses, even in our ongoing drought conditions (compared to volumes generated with the "worst case" case Napa County factor of 1.0 acre-feet per acre) reflect many of the site specific aspects of vineyard irrigation at Bouchaine Vineyards, Inc. as discussed above.

5. Potential Use of Process Water Plus Process Area Stormwater from the on-site Process Water Pond)

An additional on-site source of vineyard irrigation water is the on-site Process Water Pond. Although some of this water does come from groundwater (i.e., Process Water), the rest is from captured storm water from the open process area (south from the Production Building) that enters the process water system., Use of groundwater for Process Water is already addressed/included in our overall estimates of water use, and using water from the Process Water Pond for vineyard irrigation does not require any additional groundwater pumping. This approach has been discussed with the Planning, Engineering, and Environmental Health Divisions and will require

additional improvements to the existing Process Water System (e.g., lining the pond, relocating the process water sump, monitoring irrigation water quality and quantity, etc.) which can be accomplished via Use Permit Modification Conditions.

In summary, and to account for variations in weather, future replanting of portions of the vineyards, etc., we recommend for this evaluation the maximum historical (in past eight plus years) use of 12.34 acre-feet per year of vineyard irrigation water. This would be equivalent to 0.121 acre-feet/acre-year for the vineyard irrigation element of total water use if the entire property was planted to grapes.

Landscape Irrigation Use

The project Landscape Architect has evaluated existing and proposed landscape plans for the project and has estimated the landscaping, lawn areas, and proposed landscape improvements and tree planting will require 1.5 acre-feet/acre-year water for turf, 0.8 acre-feet/acre-year water for landscaping/trees, and 0.4 acre-feet/acre-year for the "hydroseeded area" irrigation.

In addition, as noted previously, the entire landscape irrigation water use may be supplied by recycled water in the future. Given that the pipeline from Napa County Wastewater District and the Los Carneros Water District is under construction at present and is not yet available to the Bouchaine property, we have not included this additional "reduction in use/mitigation" in Section 4 below.

Staff Water Use

Based on historic on-site research about actual water use/wastewater generation data conducted in Fall, 2014 (to support our efforts to demonstrate that the existing septic system is adequate for current and future use at the Bouchaine Vineyards, Inc. facility; see Attachment 5 hereto) and historic rule of thumb ratios between potable water use and waste water generation, we've developed factors to convert waste water generation to domestic/potable water use. These factors are applicable to both the Existing and Future cases.

Values developed (using the above information and staff counts in the UP MOD application) for wastewater generation (see Attachment 2, Tables 1A and 1) are converted to domestic water supply use by multiplying by:

A. Conversion factor to account for water efficient devices and actual use vs. estimated use (as recommended by Theodore J. Walker, REHS in his October 13, 2014 report included in the original UP MOD and Variance Application): 1.00 - 0.30 = 0.70.
B. Conversion factor to account for water use vs. waste water generation: 1.0/0.9 = 1.11.

Visitor Water Use

Existing

The existing visitor facilities, and the existing permitted Marketing Plan (including two very large two-day events of up to 150 persons per day), is discussed in detail in the Use Permit Modification Application. That discussion, and the October 13, 2014 "Septic System Feasibility Report for Domestic Wastewater," were used to estimate the waste water generation analysis shown in Table 1A (dated February 13, 2015 and previously submitted on February 18, 2015; Attachment 2

hereto) provides background information and use factors (based on actual measure on-site data) for water use by staff, visitors, and Marketing Plan activities.

The same conversion factors for generating potable water use as was used in the "Staff Water Use" section above will be used for "Visitor Water Use" calculations.

Future

The improvement of the visitor facilities, and the upgrade of the visitor service approach to include wine and food pairings (with the tasting experience) and sit-down tastings with dinner or lunch activities, will increase visitor water use over present operations (due to food preparation uses and an increase in visitor time on-site). Partly off-setting these changes is the elimination of very large events (up to 150 persons per day) that have been previously permitted. The new Marketing Plan is discussed in detail in the Use Permit Modification Application (as modified on February 18, 2015). That discussion, and the October 13, 2014 "Septic System Feasibility Report for Domestic Wastewater" (Attachment 5 hereto) were used to estimate the waste water generation analysis shown in Table 1 (Attachment 2).

The same conversion factors for generating potable water use as was used in the "Staff Water Use" section above have been used for "Visitor Water Use" calculations.

SECTION 4—CALCULATIONS AND SUMMARY TABLES

"WORST CASE" WATER CONSUMPTION USING NAPA COUNTY FACTORS

Presented below are the calculations used to complete this WAA with the a) assumed County Values and b) more detailed use estimates for groundwater consumption at the site. This revision to the WAA assumes "worst case" conditions with regard to water use for vineyard irrigation (based on County of Napa "factors") as requested by Mr. Hade on June 25, 2015. Further, as agreed in our meeting with Planning Division staff on June 29, 2015, this WAA provides a clear and complete summary table for this "worst case" evaluation.

Vineyard Irrigation Use

Existing

Current Vineyard Acreage = 102.28 acres minus 3.49 acres for existing Production/Accessory Uses/Parking = 98.79 acres

County Factor for "worst case" vineyard water use: Irrigation--0.2 to 0.5 acre-feet/acre-year; Heat Protection—0.25 acre-feet/acre-year, and Frost Protection—0.25 acre-feet/acre-year. Adding these numbers results in a composite factor of 0.7 to 1.0 acre-feet/acre-year. Using the "worst case" factor of 1.0 acre-feet/acre-year results in:

TOTAL ESTIMATED EXISTING VINEYARD IRRIGATION USE = 98.79 acres x 1.0 acre-feet/acre-year (total) = 98.79 acre-feet/year

Future

The area of the new Hospitality Center/Office Building, parking lot and proposed landscape improvements on the south and west sides of the existing Winery area is currently planted in

vineyards and/or existing dirt & gravel roads. As noted above, for this worst case evaluation, vineyards are assumed to consume 1.0 acre-feet/acre-year for irrigation and frost protection. The amount of water which will be saved by removal of these vineyards is estimated as follows:

Vineyards removed = 1.23 acres

A portion of the vineyard is expected to be replanted as part of the landscaping plan:

New vineyards replanted = 0.10 acres

Net Vineyards removed: 1.23 acres – 0.10 acres = 1.13 acres

1.13 acres X 1.0 acre-feet/acre-year = 1.13 acre-feet/year

TOTAL ESTIMATED FUTURE VINEYARD IRRIGATION USE = 98.79 – 1.13 = 97.66 acre-feet/year.

Landscape Irrigation Use

Existing

Using the Napa County Factor for "Domestic and Landscaping" of 0.5 acre-feet/year per 100,000 gallons of wine produced, and recent (2013) actual wine production of 134,819 gallons, domestic and landscape uses would be:

TOTAL ESTIMATED EXISTING DOMESTIC AND LANDSCAPE IRRIGATION USE = 0.5 acre-feet/year per 100,000 gallons of wine x 134,819 gallons = 0.67 acre-feet/year

Future

Similarly, using the same Napa County Factor and the projected future maximum (currently permitted) wine production of 225,000 gallons per year:

TOTAL ESTIMATED FUTURE DOMESTIC AND LANDSCAPE IRRIGATION USE = 0.5 acre-feet/year per 100,000 gallons of wine x 225,000 gallons = 1.12 acre-feet/year

Winery Process Use

Using the Napa County Factor for process water use (washing tanks, floor washing, cleaning equipment, etc.; 2.15 acre-feet/100,000 gallons of production), the total Winery Process Use is estimated as:

Existing

Estimated Current Water Use: 134,819 gallons of wine production/year x 2.15 acre-feet/100,000 gallons = 3.22 acre-feet/year

Future

Estimated Future/Permitted Production Water Use: 225,000 gallons/year x 2.15 acre-feet/100,000 gallons = 4.84 acre-feet/year

Staff Water Use

Existing

As noted above, we believe the Napa County Factor used for Landscape Irrigation ("Domestic and Landscaping") includes all domestic water uses, including Staff Water Use and Visitor Water Use. Hence, there is no additional estimated use for this category.

Future

See above regarding the Existing situation.

Visitor Water Use.

Existing

See above discussion under Staff Water Use.

Future

See above discussion under Staff Water Use.

Worst Case Total Estimated Water Use

The following paragraphs provide a narrative for the vales in Table A at the end of this section.

Existing

The total estimated existing water demand at Bouchaine project is the Existing Vineyard Use (worst case estimate of 98.79 acre-feet per year), Landscape Irrigation (and Domestic) Use (0.67 acre-feet/year), and Winery Process Water Use (3.22 acre-feet/year). As noted above, Staff Water Use and Visitor Water Use are included in the Landscape Irrigation category. That Total Water Use is 102.68 acre-feet/year, as summarized in Table A at the end of this Section.

If we a) assumed that this entire water usage came from on-site groundwater wells and b) converted this use to an "availability factor" (acre-foot/acre) for this property of 102.28 acres, that factor would be:

Availability Factor = Annual water use/property acreage = 102.68 acre-feet/102.28 acres = 1.004 acre-feet/acre, just barely more than is available per historic Napa County standards.

Future

Similar to the Existing case, the total estimated future water demand from the project is the sum of the Net Vineyard Use (98.79 – 1.13 = 97.66 acre-feet per year), Landscape Irrigation (including Domestic) Use (1.12 acre-feet/year), and Winery Process Water Use (4.84 acre-feet/year). As before, Staff Water Use and Visitor Water Use are included in the Landscape Irrigation category. That Total Water Use is 103.62 acre-feet/year (as summarized in Table A below), also more than is available per Napa County standards. Using the same assumptions as for current use, the "availability factor" for this property would be:

Availability Factor = Annual groundwater use/property acreage = 103.62 acre-feet/102.28 acres = 1.013 acre-feet/acre.

Table A—Summary of "Worst Case" Estimated Total Water Use (Existing and Future)

Type of Estimated Water Use	Existing (in acre-feet/year)	Future (in acre-feet/year)
Vineyard Irrigation Use	98.79	97.66
Landscape Irrigation Use	0.67	1.12
Winery Process Water Use	3.22	4.84
Staff Water Use	--	--
Visitor Water Use	--	--
Total Worst Case Estimated Use	102.68	103.62

REASONABLE ASSUMPTIONS/ALTERNATE SOURCES/SITE SPECIFIC USE

The use of more reasonable assumptions, alternative sources of water currently and potentially available at Bouchaine, and actual water use data from the facility, are considered in the following subsections.

Vineyard Irrigation Use

As described in Section 3 above, we evaluated four alternative approaches to estimated vineyard irrigation use; each is described (with calculations) in the following three subsections.

A. Revised Factor:

The total amount of existing vineyard water use was estimated to be 98.79 acre-feet/year using the "worst case" Napa County water use factors. However, in this case (both existing and future operations), it should be noted that the factor used includes irrigation, heat protection and frost protection. This is a substantial overestimate of water use in the vineyards at Bouchaine Vineyards, Inc. because the Carneros facility does not use water for either heat protection (due to the cooler Carneros region weather) or frost protection (due to the more moderate weather in the Carneros region and the absence of required/appropriate facilities/equipment in the vineyards). Eliminating the factors for heat protection and frost protection (each 0.25 acre-feet/acre-year, or a total of 0.5 acre-feet/acre-year), results in a reduced water use for irrigation in the vineyards for the Existing and Future cases. Using only this factor results in estimated groundwater uses for Vineyard Irrigation only of:

Existing

TOTAL ESTIMATED EXISTING VINEYARD IRRIGATION USE = 0.5 acre-feet/acre-year x 98.79 acres = 49.39 acre-feet/year

Future

TOTAL ESTIMATED FUTURE VINEYARD IRRIGATION USE = 0.5 acre-feet/acre-year x 97.66 acres = 48.83 acre-feet/year

It should also be noted that the majority of vines at the Bouchaine Vineyards, Inc. facility are 11 to 31 years old. Due to the vine ages and, as a result of developing a very deep root system and being in a very mild climatological area (due to proximity to San Pablo Bay), irrigation rates have

been, in practice, dramatically less than the standard Napa County vineyard irrigation factor of 0.5 acre-feet/acre. We have chosen not to take further "credit" for this reality at this point.

B. Alternate Sources/Diverted and/or Recycled Water:

It should also be noted that the current requirement for vineyard irrigation water is currently met entirely by the use of a) water diverted from a local "Blue Line" stream through a series of off-site reservoirs and/or b) recycled (tertiary treated processed) wastewater from a nearby off-site reservoir as provided by the Sonoma Valley County Sanitation District. That is, at the present time, no on-site groundwater is used for winery irrigation. These forward thinking, "green" solutions to concerns about groundwater availability in the Carneros Region should be viewed as a very positive action by Bouchaine Vineyards, Inc. in their current and future operation of the facility.

As noted above, a copy of the Division of Water Rights Order from the State Water Resources Control Board is provided in Attachment 3 hereto. Similarly, a copy of the signed agreement between Bouchaine Vineyards, Inc. and the Sonoma County Sanitation District is provided in Attachment 4 hereto.

The property is also negotiating for an additional source of recycled wastewater for vineyard (and possibly landscape) irrigation uses from the Napa County Wastewater District and the Los Carneros Water District when delivery lines (currently under construction) are completed to Las Amigas Road (hopefully in late 2015). A copy of the latest draft agreement is provided in Attachment 5 hereto. This recycled water should serve as back-up to the water from the Sonoma Valley County Sanitation District and increase the likelihood of "guaranteed" water availability from "green sources" and substantially reduce the likelihood of using groundwater pumped at the site for vineyard irrigation use. Therefore, there is actually a further reduction in vineyard water uses in both the Existing and Future cases described in this Section.

Existing

ESTIMATED EXISTING VINEYARD IRRIGATION USE (from groundwater) = 0 acre-feet/year

Future

ESTIMATED FUTURE VINEYARD IRRIGATION USE (from groundwater) = 0 acre-feet/year

C. Alternate Source/Process Water and Stormwater from the Process Water Pond:

As described previously above, we are also evaluating the use of this source of vineyard irrigation water. Per ongoing discussions, minor improvements to the process water system will need to be made, but the capacity is available, and we'd like to have the option of using this source in the future.

In summary, in Section 3 herein, historic use of off-site water (diverted or recycled) has been documented for the years 2007 to 2015, and averaged 8.09 acre-feet/year, even during our current drought. The Process Water estimate follows below.

Existing

ESTIMATED EXISTING VINEYARD IRRIGATION USE (from Off-site Water Sources) = 8.09 acre-feet/year

Future

ESTIMATED FUTURE VINEYARD IRRIGATION USE (from Off-site Water Sources) = 8.00 acre-feet/year

D. SUMMARY—Based on the information provided above in Section 3, Subsections 1 through 5, and responding to concerns expressed by the County of Napa Planning Division regarding the "non-guaranteed" nature of the "recycled water" source (due to an existing 5-year length of the contract), and to account for variations in future weather, crop age/replanting, etc., we are choosing to use the maximum recent irrigation use values (2007 to 2015) identified above (12.34 and 12.12 acre-feet per year, respectively) for the Existing and Future case.

Landscape Irrigation Use

Existing

The existing turf and landscaping areas, and associated water uses, are estimated to be:

Turf: 0.09 acres X 1.5 acre-feet/acre-year = 0.14 acre-feet/year

Landscaping/trees: 0.33 acres X 0.8 acre-feet/acre-year = 0.27 acre-feet/year

TOTAL ESTIMATED EXISTING LANDSCAPE IRRIGATION USE = 0.14 + 0.27 = 0.41 acre-feet/year

Future

There will be minimal modifications to existing on-site landscaping. The project Landscape Architect's estimate for landscape irrigation water use noted above (1.5 acre-feet/acre/year water for turf, and 0.8 acre-feet/acre/year water for landscaping/trees) are applicable here as well.

The proposed new areas of turf, landscaping/trees, and hydroseeding, and associated water use (using Section 3 Factors), are estimated to be:

Turf: 0.09 acres X 1.5 acre-feet/acre-year = 0.135 acre-feet/year

Landscaping/trees: 0.085 acres X 0.8 acre-feet/acre-year = 0.07 acre-feet/year

Hydroseeded: 0.15 acres X 0.4 acre-feet/acre-year = 0.06 acre-feet/year

ESTIMATED FUTURE LANDSCAPE IRRIGATION USE = 0.135 + 0.07 + 0.06 = 0.27 acre-feet/year for new areas.

TOTAL ESTIMATED FUTURE LANDSCAPE IRRIGATION USE = Existing + Future = 0.41 + 0.27 = 0.68 acre-feet/year.

As noted previously, the entire 0.68 acre-feet/year use may be supplied by recycled water in the future. Given that the pipeline from Napa County Wastewater District and the Los Carneros Water District is under construction at present and is not yet available to the Bouchaine property, we have not included this "mitigation" in Table B below.

Winery Process Use

In the absence of other more specific and actual data, we will use the Napa County Factor for process water use (washing tanks, floor washing, cleaning equipment, etc.; 2.15 acre-feet/100,000 gallons of production) for both the Existing and Future cases. The total Winery Process Use is estimated as:

Existing

TOTAL ESTIMATED EXISTING WINERY PROCESS WATER USE: 134,819 gallons of wine production/year x 2.15 acre-feet/100,000 gallons = 3.22 acre-feet/year

Future

TOTAL ESTIMATED FUTURE WINERY PROCESS WATER USE: 225,000 gallons/year x 2.15 acre-feet/100,000 gallons = 4.84 acre-feet/year

Staff Water Use

Existing

Staffing is currently (and has been for a while) at 15 total employees (12 full time and 3 part time) except during harvest/crush season, when an additional 1 full time and 2 part time staff are added. Total (by weekday, weekend, and crush periods) wastewater generation is estimated in Table 1.a. previously submitted (see Attachment 2 hereto). These estimated use numbers are provided below:

Current Weekday: 52,853 gallons/year

Current Weekend: 6,240 gallons/year

Current Crush: 2,250 gallons/year

Therefore, Total Estimated Current Staff Waste Water Generation: 61,343 gallons/year x 3.069 acre-feet/1,000,000 gallons = 0.19 acre-feet/year

Based on historic on-site research about actual water use/wastewater generation data conducted in Fall, 2014 (to support our efforts to demonstrate that the existing septic system is adequate for current and future use at the Bouchaine Vineyards, Inc. facilty) and historic rule of thumb ratios between potable water use and waste water generation, we've developed factors to convert waste water generation to domestic/potable water use. These factors are applicable to both the Existing and Future cases, as described in Section 3 above.

Values for wastewater generation (see Table 1.A attached) are converted to domestic water supply use by multiplying by:

Conversion factor to account for water efficient devices and actual use vs. estimated use (as recommended by Theodore J. Walker, REHS in his October 13, 2014 report included in the original UP MOD and Variance Application): 1.00 - 0.30 = 0.70.

Conversion factor to account for water use vs. waste water generation: 1.0/0.9 = 1.11.

TOTAL ESTIMATED EXISTING STAFF DOMESTIC WATER USE = 0.19 acre-feet/year x 0.7 x 1.1 = 0.14 acre-feet/year

Future

When the Use Permit Modification is granted, and the new Hospitality Center/Office Building (with kitchen) constructed, an additional 4 full time and 2 part time employees will be hired for those operations (for a total of 21 employees; 16 full time and 5 part time). It is also anticipated that crush employees will remain at 1 full time and 2 part-time. This results in a total of 24 employees. Using the same approach as above, that results in an estimate of waste water generation (see Table 1 attached) as follows:

Future Weekday: 72,248 gallons/year

Future Weekend: 8,580 gallons/year

Future Crush: 2,250 gallons/year

Total Estimated Future Staff Waste Water Generation: 83,258 gallons/year x 3.069 acre-feet/1,000,000 gallons = 0.26 acre-feet/year

TOTAL ESTIMATED FUTURE STAFF DOMESTIC WATER USE = 0.26 acre-feet/year x 0.7 x 1.1 = 0.20 acre-feet/year

Visitor Water Use.

Existing

The existing visitor facilities, and the existing permitted Marketing Plan (including two very large two-day events of up to 150 persons per day), is discussed in detail in the Use Permit Modification Application. That discussion, and the October 13, 2014 "Septic System Feasibility Report for Domestic Wastewater," were used to estimate the waste water generation analysis shown in Table 1A (dated February 13, 2015 and previously submitted on February 18, 2015; Attachment 2 hereto) and below provides background information and use factors (based on actual measure on-site data) for water use by staff, visitors, and Marketing Plan activities.

1. Walk-in Wine Tastings: 47,655 gallons/year
2. Private Promotions & Dinners: 320 gallons/year
3. Annual Wine Auction Activities: 800 gallons/year
4. Wine Related Groups w/ Meal & Tasting: 300 gallons/year
5. Meetings with Lunch or Dinner: 20,000 gallons/year
6. April in Carneros: 720 gallons/year
7. Holiday in Carneros: 720 gallons/year

Total Estimated Current Visitor Waste Water Generation = 70,515 gallons/year x 3.069 acre-foot/1,000,000 gallons = 0.22 acre-feet/year.

Using the same conversion factors as was used immediately above for staff water use yields:

TOTAL ESTIMATED EXISTING VISITOR DOMESTIC WATER USE = 0.22 acre-feet/year x 0.7 x 1.11 = 0.17 acre-feet/year

Future

The improvement of the visitor facilities, and the upgrade of the visitor service approach to include wine and food pairings (with the tasting experience) and sit-down tastings with dinner or lunch activities, will increase visitor water use over present operations (due to food preparation uses and an increase in visitor time on-site). Partly off-setting these changes is the elimination of very large events (up to 150 persons per day) that have been previously permitted. The new Marketing Plan is discussed in detail in the Use Permit Modification Application (as modified on February 18, 2015). That discussion, and the October 13, 2014 "Septic System Feasibility Report for Domestic Wastewater" (Attachment 5 hereto) were used to estimate the waste water generation analysis shown in Table 1 (Attachment 2) and below:

1. Walk-in Wine Tastings: 70,320 gallons/year
2. By Appointment Wine Tastings with "Flavor Bites": 21,900 gallons/year
3. Private Promotions & Dinners: 6,000 gallons/year
4. Annual Wine Auction Activities: 800 gallons/year
5. Wine Related Groups w/ Meal & Tasting: 7,200 gallons/year
6. Meetings with Lunch or Dinner: 20,000 gallons/year
7. Special Wine and Food Events: 20,800 gallons/year
8. Chef's Dinner Series: 33,600 gallons/year

Total Estimated Future Visitor Waste Water Generation = 180,620 gallons/year x 3.069 acre-foot/1,000,000 gallons = 0.55 acre-feet/year

Using the same conversion factors as was used for Staff Domestic Water Use yields:

TOTAL ESTIMATED FUTURE VISITOR DOMESTIC WATER USE = 0.55 acre-feet/year x 0.7 x 1.11 = 0.43 acre-feet/year.

The following paragraphs provide a narrative for the figures in Table B at the end of this section.

Existing

The Total Estimated Water Use provided in Table B is the sum of the More Reasonable Assumption evaluation above.

The major reduction (compared to Table A) comes from the reality that a) the 1.0 acre-foot/acre factor overestimates Bouchaine vineyard irrigation use dramatically, b) all Vineyard Irrigation Use remaining is currently (and in the Future, will be) provided by using recycled, tertiary-treated wastewater from the Sonoma Valley County Sanitation District (and other "off-site" sources described herein), and c) per direction by County of Napa Planning Division, we have used historic (2007 to 2015) actual vineyard irrigation uses. The Total Water Use (from groundwater; see footnote) is estimated to be 16.28 (Existing) and 18.10 (Future) acre-feet/year as shown in Table B at the end of this Section. If this use was converted to an "Availability Factor" (acre-foot/acre) for this property of 102.28 acres, that factor (for comparison) would be:

Availability Factor = Annual groundwater use/property acreage = 16.28 acre-feet/102.28 acres = 0.159 acre-feet/acre.

Future

Again, remembering that (for this evaluation) all Vineyard Irrigation Use is provided by non-groundwater sources (e.g., using a) diverted stream water flows and/or "recycled water" from Sonoma County and/or Process Water and stormwater runoff from the Process Water pond), the actual Total Water Use is estimated to be 18.23 acre-feet/year. If this use was converted to an "Availability Factor" (acre-foot/acre) for this property of 102.28 acres, that factor (for comparison) would be:

Availability Factor = Annual groundwater use/property acreage = 18.23 acre-feet/102.28 acres = 0.178 acre-feet/acre

Table B—Summary of "Reasonable Case" Estimated Total Water Use (Existing and Future)

Type of Estimated Water Use	Existing (in acre-feet/year)	Future (in acre-feet/year)
Vineyard Irrigation Water Use*	12.34	12.12**
Landscape Irrigation Use	0.41	0.68
Winery Process Water Use	3.22	4.84
Staff Water Use	0.14	0.20
Visitor Water Use	0.17	0.43
Total More Reasonable Case Estimated Use	16.28	18.27

Footnotes:

*The Vineyard Irrigation water uses (in both the Existing and Future cases) do not result in additional well pumping because the water comes from a) off-site source of diverted stream water, b) recycled water, or c) pumping Winery Process Water (already accounted for in Table B) and stormwater runoff (from the open portions of the process area) out of the existing Process Water Pond.

**The Future case is slightly less than the Existing case due to a reduction in total vineyard area.

The incremental increase in water use for the Future case is 1.99 acre-feet per year, or a 11.18% increase over Existing, using this approach.

Even including the redundant Vineyard Irrigation Water Use above, the overall factor for the Existing Bouchaine property is only about 53.0% of the 0.3 acre-foot/acre factor used for the heavily impacted MST region. Similarly, the factor for the Future case is about 59.5% of the MST factor.

SECTION 5--WATER SOURCES

Existing

The existing water system consists of:

1. Four On-Site Water Wells (with only Wells #1 and #3 providing water for potable and domestic uses) with a total capacity of 15,840 gallons/day of groundwater for potable uses. Irrigation uses

for groundwater from Wells #2 and #4 are not included in this total. All on-site wells are shown in Figure 1 previously submitted. See also previously submitted well logs and well investigation reports (also provided as Attachment 6 hereto).

2. One large winery process water pond with pump and aeration (currently used for process wastewater and stormwater (from the open areas of the crush pad area) treatment only; historic use for vineyard irrigation)

3. Five 10,000 gallon concrete tanks for potable water storage (in the Production Building)

4. Large (71,000 gallon) firewater tank

5. Smaller (10,000 gallon) irrigation storage tank (not currently used).

6. There is also a direct connection to a nearby offsite reservoir (Reservoir 3 to the south of the Bouchaine property; see Figure 2) that can supply either or both 1) diverted stream water from the unnamed "Blue Line Stream to the east and south from the Bouchaine facility (see also creek diversion point 1 and Reservoir 2 on Figure 2) and 2) Sonoma Valley County Sanitation District recycled water (for vineyard irrigation only) which is received via pipeline at Reservoir 2 (see Figure 2). Per Mr. Hade's direction, these valuable sources of water have not been included in this analysis, for either the "Existing" or "Future" cases. In the table immediately above, the volumes of water used from those sources are assumed to be pumped from existing Bouchaine wells.

The controlled use of all these sources of water can satisfy the present "Worst Case" daily use and annual demand for the facility.

Finally, as a) part of the Use Permit Modification Application and, b) as part of Bouchaine's compliance with the recent Environmental Health "approval" of the Bouchaine Winery Water System (and when permitted and constructed), Bouchaine will add a new well (Well #6--completed) and pump with a capacity of 7,200 gallons per day of groundwater, for a total supply of 23,040 gallons per day for potable water from on-site Wells #1, #3, and #6. Building Permit Applications have been filed (July 9, 2015) and a resubmittal/response to comments filed (August 27, 2015). The permit was granted September 1, 2015.

Future

As noted above, Well #6 is being added to the system; when completed it will have a capacity of 7,200 gallons per day of groundwater, for a total supply of 23,040 gallons per day for potable water from on-site Wells #1, #3, and #6. In addition, a new 12,000 gallon fire water tank will be added for the new Hospitality Center. We are also submitting data and facility improvement information that will allow Process Water and stormwater runoff from the open process areas (that flow to the existing Process Water Pond) to be used as vineyard irrigation water. Also, as noted previously, for additional vineyard irrigation needs/flexibility, Bouchaine is currently in negotiations to add a future connection to the Napa County Sanitation District/Los Carneros Water District recycled water system (for vineyard irrigation and possible landscape irrigation only). Again, this potential source has not been considered in this analysis.

SECTION 6—RECHARGE EVALUATION

Firma Design Group contracted with O'Connor Environmental, Inc. (OE-I) to perform the necessary evaluation of recharge for the Bouchaine Vineyards, Inc. project. Their final report, dated September 17, 2015, is attached hereto as Attachment 8. The OE-I recharge estimation (pages 5-13 of the noted report) evaluated both a "normal precipitation" scenario (year 2010) and a "drought" scenario (year 2014) and, applying the Soil Water Balance (SWB) model to the project recharge area, concluded that average water year recharge was approximately 3.9 inches per year, or 301.3 acre-feet per year over the recharge area. During drought conditions, recharge was significantly lower at approximately 0.7 inches per year, or 54.1 acre-feet per year over the recharge area. OE-I further stated that "the recharge estimates are conservative in that they represent recharge from infiltration of precipitation only. Significant additional recharge may occur through streambed infiltration, groundwater inflows from outside the defined project recharge area, and/or from excess irrigation."

It should also be noted that both the "normal precipitation" and "drought condition" recharge quantities far exceed, by 1,665 per cent and 299 per cent, respectively, anticipated groundwater use (e.g., 18.10 acre-feet/year; see Table B above) from the Bouchaine Winery Improvement Project.

SECTION 7--LOCAL WELL LOCATION/DATA RESEARCH AND WELL INTERFERENCE EVALUATION

Over the past few weeks, we have conducted additional outreach efforts with surrounding property owners/occupants to assist in identifying any existing wells within a 500-foot radius of the three primary wells on the Bouchaine Vineyards, Inc. site. We attempted to contact the owners/occupants of 10 nearby, surrounding properties (and actually talked with 8 owners or owner representatives of those properties). In summary, the data available from this research identified two nearby off-site wells within 500' of any of the three active wells on-site.

The two wells identified were on Assessor Parcel Numbers 047-330-026 and 047-390-001, both due north from the Bouchaine Vineyards, Inc. parcel. See Figure 3 attached hereto. These identified wells are both nominally upgradient of the Bouchaine wells and are, respectively, approximately 286 feet and 447 feet from the Bouchaine wells and 280 feet deep and 125 feet deep, respectively. The nearest Bouchaine well (Well #1) is, in comparison, 162 feet deep. Pumping rates for the two nearest off-site wells are reported to be 20 gallon per minute (gpm) and 5-10 gpm, respectively, as compared to the nearest Bouchaine well at 6 gpm.

Consistent with the WAA Guidance Document, we also requested information about the off-site wells' seal depth and screened interval, as well as soil conditions at each well location. That data was not available from the property owners, or from other non-confidential sources.

Following the WAA Guidance Document, we evaluated the potential for well to well interference from future use of the Bouchaine wells. We considered the projected use of those three on-site wells (the future case is significantly less than historic uses) and the relative ground elevation and depth of the 2 identified off-site wells within 500'.

We also reviewed the five (5) example evaluations presented in tabular form on pages 36-38 (Tables F-6 to F-10) of Appendix F to the WAA Guidance Document and noted that, even with pumping rates of 30, 100 and 300 gpm in those examples, in none of the five cases were well drawdown estimates more than the significance level of 10 to 15 feet at distances (from the potentially impacted well) of over 100 feet. Given the Bouchaine pumping rate of 6 gpm, and distances from the two off-site wells of 286 and 447 feet, we do not believe either of those 2 nearby local wells will be significantly impacted after completion of the proposed project.

Finally, O'Connor Environmental, Inc. (OE-I) was contracted to perform a site- and well-specific "Well Interference Analysis." That work is presented on pages 14 to 17 of their September 17, 2015 report (Attachment 8 hereto). OE-I concluded that "the magnitudes of drawdown at neighboring wells at expected pumping rates and durations will not exceed 4.6 feet, significantly less than the 10 to 15 feet criteria specified in the Napa County WAA Guidance Document. The evaluation is based on analysis of the drawdown resulting from pumping each of the project wells individually at the pumping rates noted…"

SECTION 8--SUMMARY AND CONCLUSIONS

As presented above, the "reasonable case" estimated overall water use for the Bouchaine Vineyards, Inc. property after approval of the Use Permit Modification for the Bouchaine Winery Improvement Project is substantially less than (approximately 53% to 60% of) the parcel's potential allowable water allotment if calculated with the MST water deficient area value of 0.3 acre-foot/acre. With a variety of sources of water for the project site now and in the future (as described above) the facility should have no trouble meeting its water needs with very minimal impacts to groundwater resources. Recharge analysis and well interference evaluations demonstrate that the proposed project will not exceed WAA Guidance Document levels of impact. Therefore, this Water Availability Analysis should be sufficient to satisfy the requirements of the Public Works Department and the Planning Division.

Attachment 1

Drawings & Figures:
UP0.0, UP1.0, UP1.1, UP2.0, UP3.1
and Figures 1,2 & 3

USE PERMIT MODIFICATION
for
BOUCHAINE VINEYARDS, INC.
1075 Buchli Station Road, Napa, CA 94559

PROJECT DATA

Assessor's Parcel Number:
047-320-031

PROJECT TEAM

Owner:
Bouchaine Vineyards Inc.
1075 Buchli Station Road
Napa, Ca 94559
(707) 252-9065
Attn: Mr. and Mrs. Copeland

Applicant:
Firma Design Group
1425 N. McDowell Blvd, Ste 130
Petaluma, Ca 94954
(707) 792-1800
Attn: Mike Cook

Landscape Architect/Design/Planners:
Firma Design Group
1425 N. McDowell Blvd, Ste 130
Petaluma, Ca 94954
(707) 792-1800
Attn: Mike Cook

Civil Engineer:
Firma Design Group
1425 N. McDowell Blvd, Ste 130
Petaluma, Ca 94954
(707) 792-1800
Attn: Martin Goldsbrough

Surveyor:
Cinquini & Passarino Inc.
1360 N Dutton Ave.,
Santa Rosa, CA 95401
(707) 542-6268
Attn: Anthony G. Cinquini

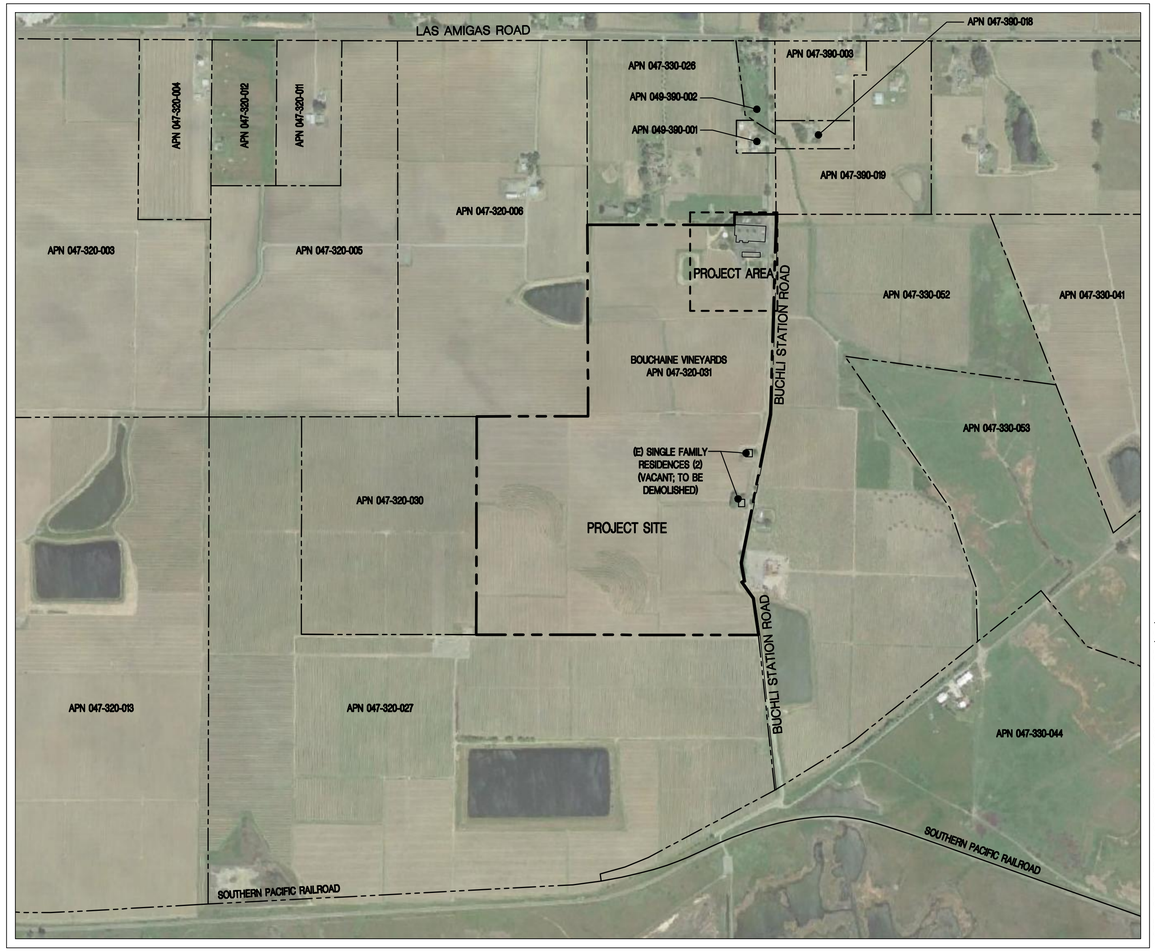
Traffic Engineer:
W-Trans
490 Mendocino Avenue, Ste 201
Santa Rosa, CA 95401
(707) 542-9500
Attn: Dalene J. Whitlock

GENERAL LEGEND

SYMBOL	DESCRIPTION
———	*PROPERTY LINE*
- - - - - -	*EASEMENT LINES*
——— – ——— – ———	*ROADWAY CENTERLINE*
— — — — — — —	*SETBACK LINES*
——— · · · ——— · · · ———	*WDO SETBACK LINES*

ABBREVIATIONS

AB	AGGREGATE BASE	LIP	LIP OF GUTTER
AC	ASPHALT CONCRETE	LP	LOW POINT
AD	AREA DRAIN	LT	LEFT
ANG PT OR AP	ANGLE POINT	MAX	MAXIMUM
APPROX	APPROXIMATE	MH	MANHOLE
BFW	BACK FACE OF WALL	MIN	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
BNDY	BOUNDARY	(N)	NEW
BSW	BACK OF SIDEWALK	NG	NATURAL GROUND
BW	BOTTOM OF WALL	NTS	NOT TO SCALE
CATV	CABLE TELEVISION	OH	OVERHEAD
CB	CATCH BASIN	PG&E	PACIFIC GAS & ELECTRIC
C,G OR C&G	CURB & GUTTER	P/L, PL	PROPERTY LINE
CL	CLASS	PP	POWER POLE
C/L	CENTERLINE	PVC	POLYVINYL CHLORIDE PIPE
CLR	CLEAR(ANCE)	PVMT	PAVEMENT
CO	CLEANOUT	R	RADIUS
CONC	CONCRETE	RCE	REGISTERED CIVIL ENGINEER
CONST	CONSTRUCTION	RCP	REINFORCED CONCRETE PIPE
CU FT OR CF	CUBIC FEET	RDWD	REDWOOD
CY	CUBIC YARDS	REINF	REINFORCED
DI	DROP INLET	REQ'D	REQUIRED
DS	DOWNSPOUT	RET WALL	RETAINING WALL
DWG	DRAWING	RT	RIGHT
DWY OR D/W	DRIVEWAY	R/W OR ROW	RIGHT OF WAY
EG	EXISTING GRADE	RWL	RAIN WATER LEADER
EL OR ELEV	ELEVATION	SAD	SEE ARCHITECTS DRAWINGS
ELEC	ELECTRIC	SCH	SCHEDULE
EP	EDGE OF PAVEMENT	SD	STORM DRAIN
ESMT	EASEMENT	SDMH	STORM DRAIN MANHOLE
EXIST OR EX OR (E)	EXISTING	SDCO	STORM DRAIN CLEANOUT
FG	FINISH GRADE	SF	SQUARE FEET
FFE	FINISH FLOOR ELEVATION	SLAD	SEE LANDSCAPE ARCHITECTS DWGS
FH	FIRE HYDRANT		
FL	FLOWLINE	SO	SIDE OPENING
FS	FINISHED SURFACE	SS	SANITARY SEWER
FT	FOOT	SSCO	SANITARY SEWER CLEAN OUT
G	GAS MAIN	SSD	SEE STRUCTURE DRAWINGS
GB	GRADE BREAK	SSMH	SANITARY SEWER MANHOLE
GM	GAS METER	STA	STATION
GR	GRATE	STD	STANDARD
GRND	GROUND	SW, S/W OR SWK	SIDEWALK
GV	GATE VALVE	TC	TOP OF CURB
H	HORIZONTAL	TELE OR TEL	TELEPHONE
H.C.	HOSPITALITY CENTER	TG	TOP OF GRATE
HDPE	HIGH DENSITY POLYETHYLENE	TS	TURNING STRUCTURE
HP	HIGH POINT	TRANS	TRANSFORMER
HW	HEADWALL	TW OR TOW	TOP OF WALL
HYD	HYDRANT	TYP	TYPICAL
IFO	IN FAVOR OF	W	WATER LINE
IG OR INV	INVERT GRADE	WCR	WHEEL CHAIR RAMP
JP OR J	JOINT POLE	WDO	WINERY DEFINITION ORDINANCE
JT	JOINT TRENCH	WM	WATER METER
L	LENGTH	WV	WATER VALVE
LF	LINEAL FEET		



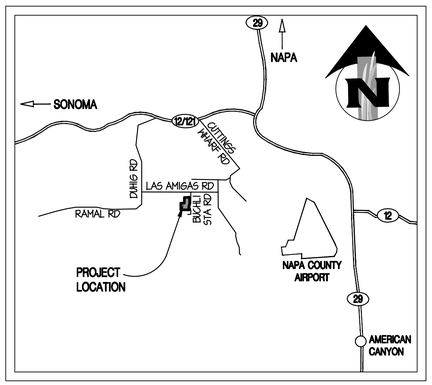
PROPERTY SITE PLAN
N.T.S.

NOTE: SITE AERIAL ACCESSED FROM GOOGLE EARTH 05/16/14

TOPOGRAPHY

Topography is per the topographic map by Cinquini & Passarino, dated May 15, 2014. Boundary is from record information, and has been located on the topography by Firma Design Group. There is not a boundary survey.

SHEET INDEX



VICINITY MAP
N.T.S.

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Prepared Under the Direction of:

LICENSED LANDSCAPE ARCHITECT — Michael A. Cook — R.L.A. 5123 — Signature — 11/30/16 Renewal Date — Date — STATE OF CALIFORNIA

Michael A. Cook
RLA 5123 Exp. 11/30/16

BOUCHAINE VINEYARDS, INC. APN 047-320-031
1075 BUCHLI STATION ROAD, NAPA, CALIFORNIA 94559

USE PERMIT MODIFICATION

TITLE SHEET, PLOT PLAN & NOTES

#	Date	By	Revision
3	7/24/2015	KFW	Revised Per County Completeness Letter & Client Direction
2	4/15/2015	KFW	Revised Per County Completeness Letter & Client Direction
1	2/17/2015	NCC	Revised per County comments

Designed MAC, NCC
Checked MAC
Date 02/18/15
Sheet

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of 34 Sheets
Job No. 0460-020

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R.L.A. 5123
Signature
11/30/16
Renewal Date
Date
STATE OF CALIFORNIA

Michael A. Cook
RLA 5123 Exp. 11/30/16

BOUCHAINE VINEYARDS, INC. APN 047-320-031
1075 BUCHLI STATION ROAD, NAPA, CALIFORNIA 94559

USE PERMIT MODIFICATION
OVERALL EXISTING PROPERTY LAYOUT

#	Date	By	Revision
3	7/24/2015	KFW	Revised Per County Completeness Letter & Client Direction
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Job No. 0460-020

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R.L.A. 5123
Signature
11/30/16
Renewal Date
Date
STATE OF CALIFORNIA

Michael A. Cook
RLA 5123 Exp. 11/30/16

BOUCHAINE VINEYARDS, INC. APN 047-320-031
1075 BUCHLI STATION ROAD, NAPA, CALIFORNIA 94559

USE PERMIT MODIFICATION
PROJECT AREA-EXISTING SITE PLAN

#	Date	By	Revision
3	7/24/2015	KFW	Revised Per County Completeness Letter & Client Direction
2	4/15/2015	KFW	Revised Per County Completeness Letter & Client Direction
1	2/17/2015	NCC	Revised per County comments

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Date 02/18/15
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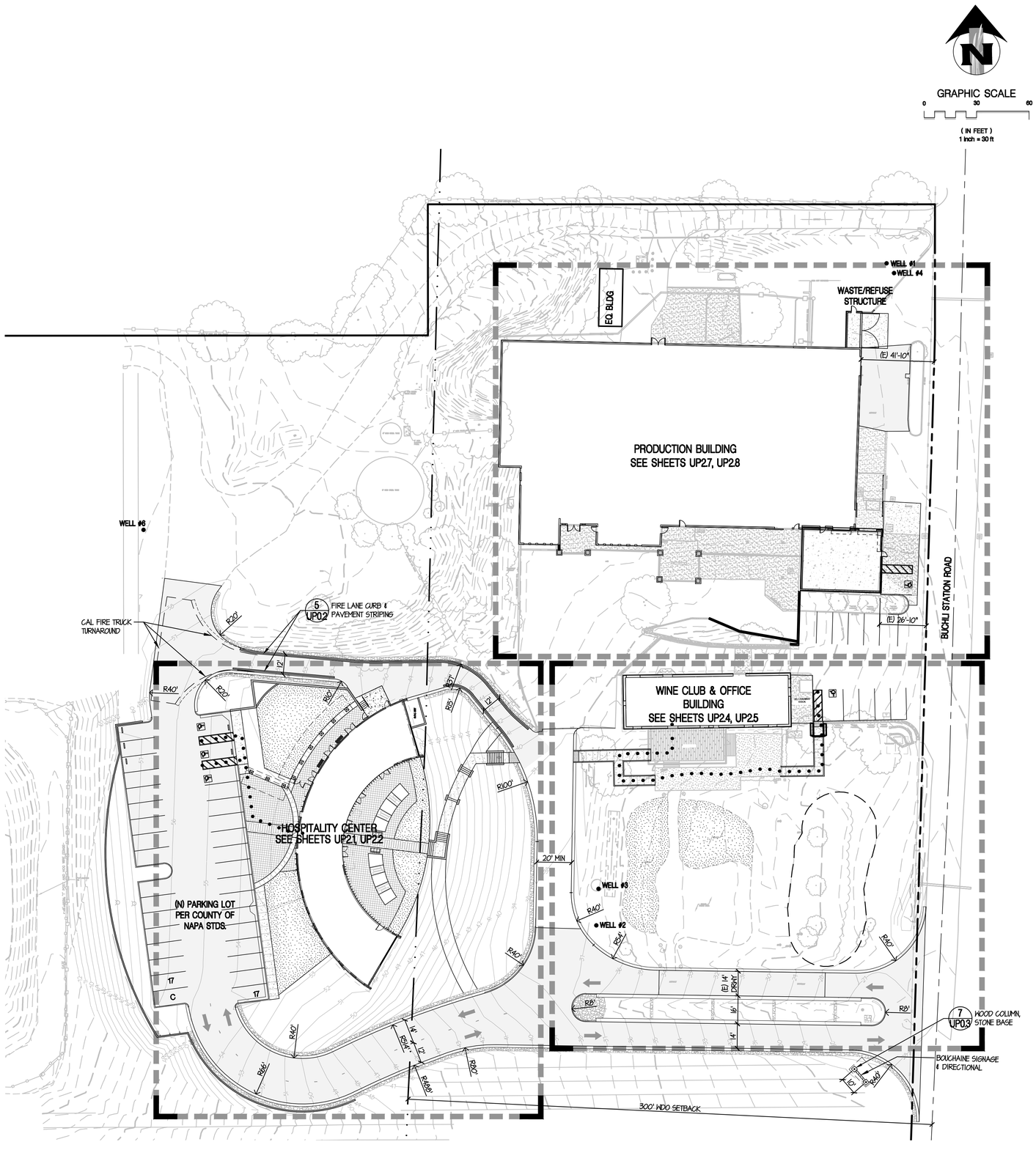
Job No. 0460-020



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Michael A. Cook
R.L.A. 5123
Signature
11/30/16
Renewal Date
Date
STATE OF CALIFORNIA

Michael A. Cook
RLA 5123 Exp. 11/30/16

BOUCHAINE VINEYARDS, INC. APN 047-320-031
1075 BUCHLI STATION ROAD, NAPA, CALIFORNIA 94559

USE PERMIT MODIFICATION
PROJECT AREA-PROPOSED SITE PLAN

#	Date	By	Revision
3	7/24/2015	KFW	Revised Per County Completeness Letter & Client Direction
2	4/15/2015	KFW	Revised Per County Completeness Letter & Client Direction
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of 34 Sheets
Job No. 0460-020

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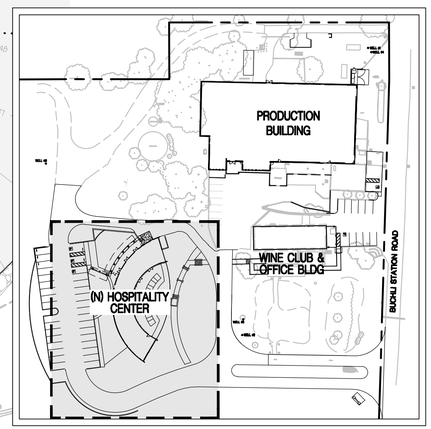

LOCATION MAP N.T.S.

GRAPHIC SCALE
0 10 20
(IN FEET)
1 inch = 10ft

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Prepared Under the Direction of:

LICENSED LANDSCAPE ARCHITECT Michael A. Cook R.L.A. 5123 Signature 11/30/16 Renewal Date STATE OF CALIFORNIA

Michael A. Cook
RLA 5123 Exp. 11/30/16

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USE PERMIT MODIFICATION
HOSPITALITY CENTER-PRELIMINARY PLANTING PLAN

#	Date	By	Revision
3	7/24/2015	KFW	Revised Per County Completeness Letter & Client Direction
2	4/15/2015	KFW	Revised Per County Completeness Letter & Client Direction
1	2/17/2015	NCC	Revised per County comments

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Date 02/18/15
Sheet

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of 34 Sheets
Job No. 0460-020

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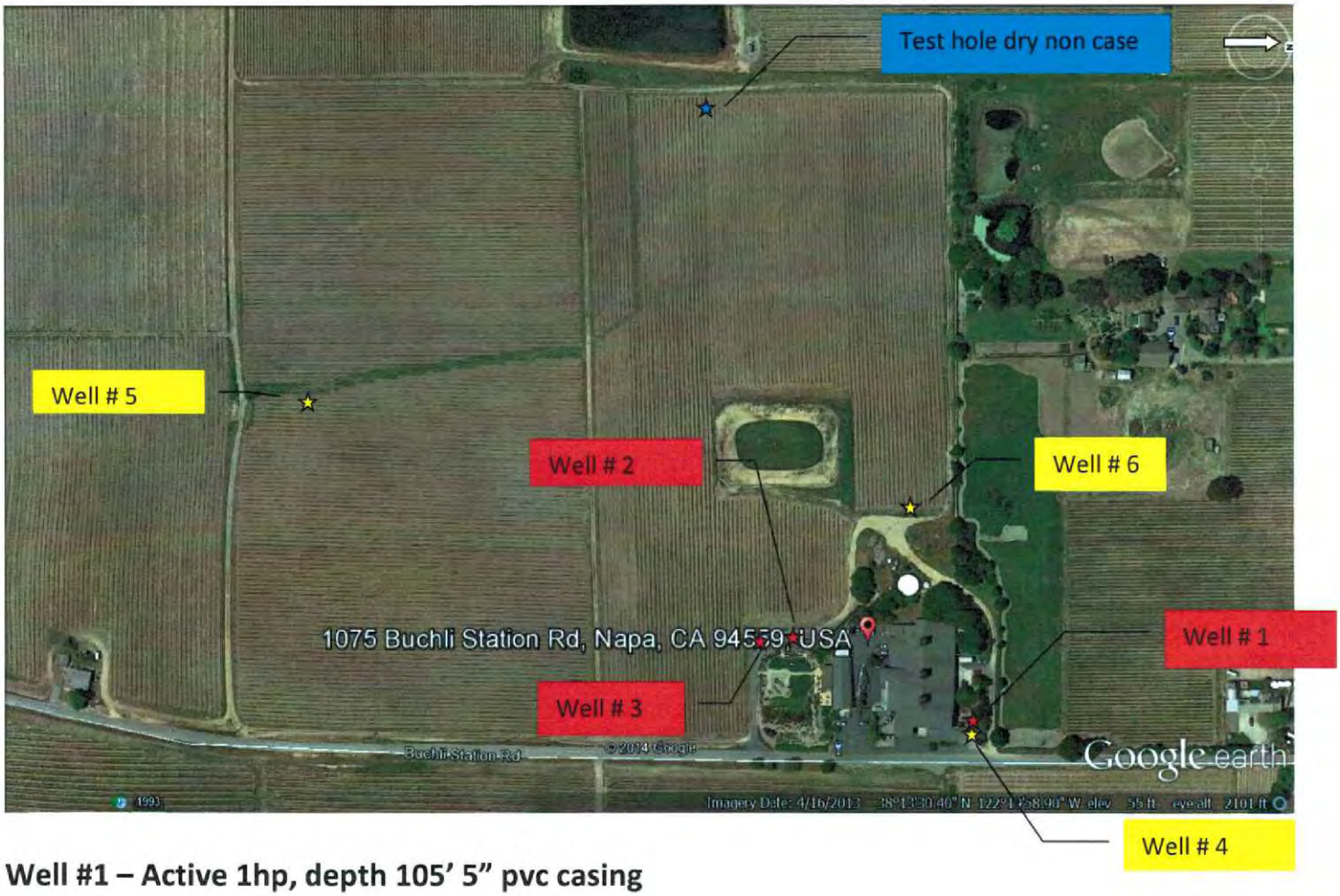
McLEAN & WILLIAMS
SINCE 1949

Well Drilling & Pump Service
878 El Centro Ave. Napa Ca, 94558
Office 707-255-6450
Fax 707-255-6489
Lic. #396352



Well #1 – Active 1hp, depth 105' 5" pvc casing
Well #2 – Active 1.5hp, depth 210' 6" pvc casing
Well #3 – Active 5hp, depth 435' 8" pvc casing
Well #4 – Active 3hp, depth 440' 6" pvc casing
Well #5 – No pump, depth 220' 6" pvc casing
Well #6 – No pump, depth 180' 6" pvc casing

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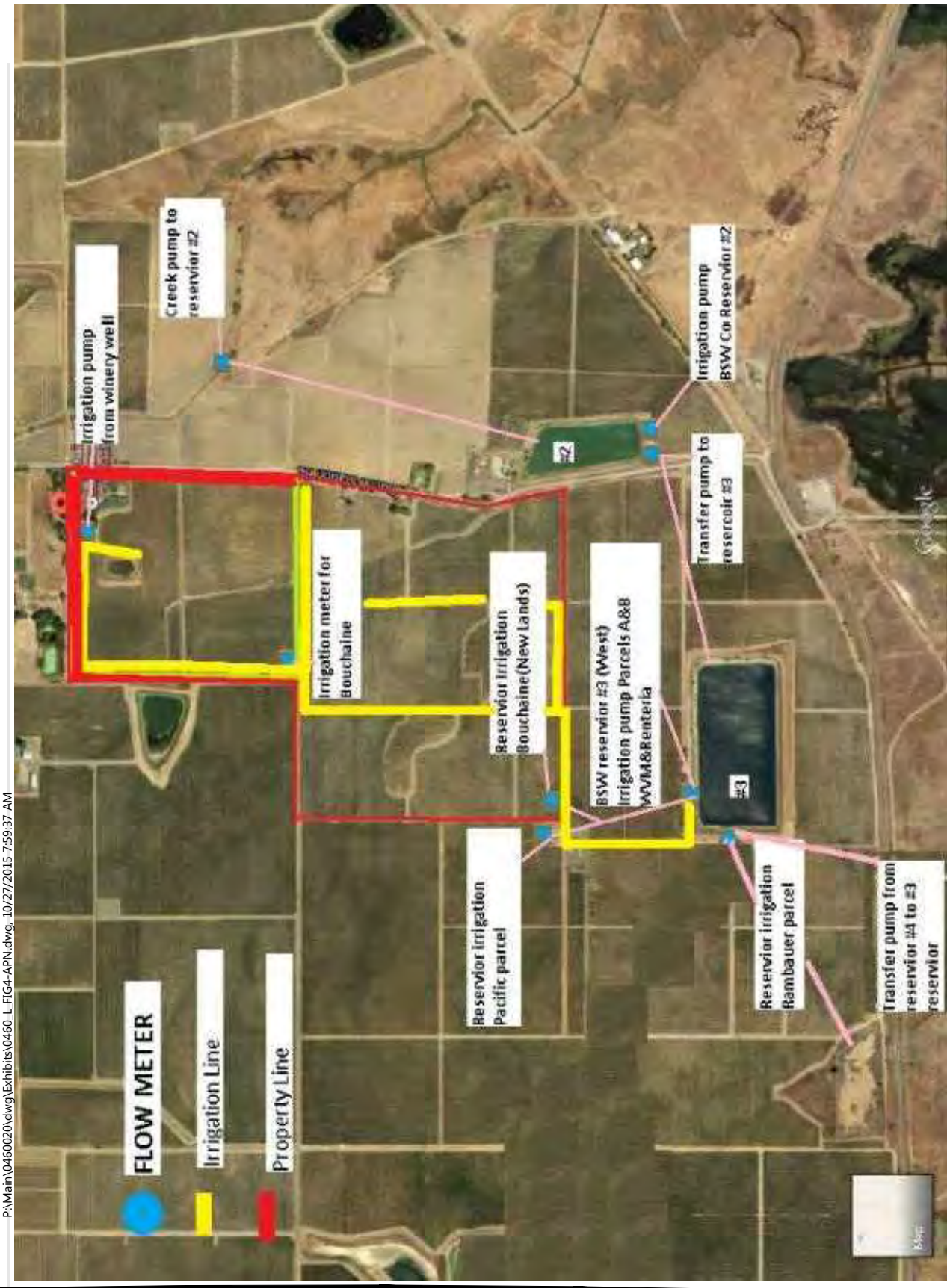
BOUCHAINE VINEYARDS, INC. APN 047-320-031
1075 BUCHLI STATION ROAD, NAPA, CALIFORNIA 94559

WATER AVAILABILITY ANALYSIS
EXISTING WELL LOCATIONS

Job No. 0460-020
Date 10/27/2015
Scale NTS
Sheet
FIGURE 1



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BOUCHAINE VINEYARDS, INC. APN 047-320-031
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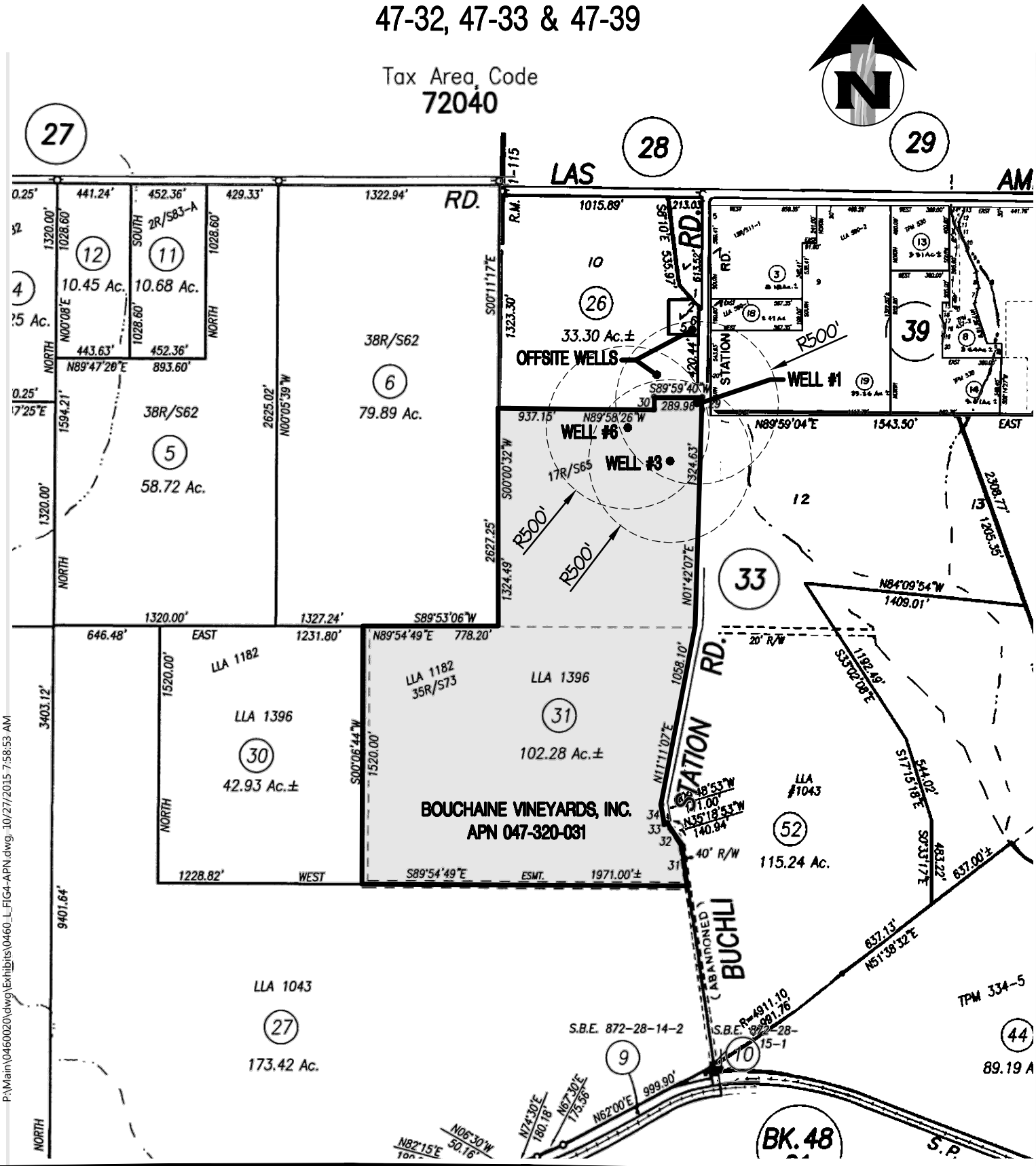
WATER AVAILABILITY ANALYSIS
OFF-SITE SOURCES OF VINEYARD IRRIGATION WATER

Job No. 0460-020
Date 10/27/2015
Scale NTS
Sheet

FIGURE 2

47-32, 47-33 & 47-39

Tax Area Code
72040



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WATER AVAILABILITY ANALYSIS
APN MAP WITH WELL LOCATIONS WITHIN 500-FEET

Job No. 0460-020
Date 10/27/2015
Scale 1" 800
Sheet
FIGURE 3

Attachment 2

Tables 1a and 1
Domestic Waste Water Generation Estimates

Friday, February 13, 2015
Project 0460-020
Bouchaine Vineyards, Inc.
Bouchaine Winery Improvement Project

TABLE 1A
Water Availability Analysis
Current Domestic Waste Water Generation From Permitted Marketing Plan

Type of Use	Weekday/ Weekend	Type of Persons/ Employees	Number of Persons/ Employees	Gallons/ Person/ Day	Gallons/ Day	Days/Year	Gallons/ Year	Average Day	Peak Day
Existing									
Staff	Weekday	Full Time Employees (FTE)	12	15	180	261	46980	150	180
		Part Time Employees (PTE)	3	7.5	22.5	261	5873	15	23
		Total					52853	165	203
	Weekend	FTE	2	15	30	104	3120	30	30
		PTE	4	7.5	30	104	3120	15	30
		Total					6240	45	60
	Crush	FTE	1	15	15	75	1125	15	15
		PTE	2	7.5	15	75	1125	15	15
		Total					2250	30	30
	Staff Total						61343	241	294
Marketing Plan									
Wine Tastings	Weekday	Max	30	3	90	261			90
(not regulated; PreWDO)		Average	25	3	75	261	19575	75	
	Weekend	Max	100	3	300	104			300
		Average	90	3	270	104	28080	270	
	Wine Tasting Total						47655	345	390
Events									
Private Promotions & Dinners		Max	12	10	120				120
		Average	4	10	40	8	320	40	
Annual Wine Auction (with food)		Max	50	10	500				500
		Avg	40	10	400	2	800	400	
Wine Related Groups (with food)		Max	24	5	120				120
		Avg	15	5	75	4	300	75	
Additional Meetings (with lunch or dinner)		Max	50	10	500				500
		Avg	40	10	400	50	20000	400	
April in Carneros		Max	150	3	450				450
		Avg	120	3	360	2	720	360	
Holiday in Carneros		Max	150	3	450				450
		Avg	120	3	360	2	720	360	
	Events Total						22860	1635	2140
	Total Annual/Average Day/Peak Day Water Use						131858	2221	2824
	Overall Average Use Per Day						361		

Friday, February 13, 2015
Project 0460-020
Bouchaine Vineyards, Inc.
Bouchaine Winery Improvement Project

TABLE 1
Water Availability Analysis (WAA)
Domestic Waste Water Generation From Marketing Plan

Type of Use	Weekday/ Weekend	Type of Persons/ Employees	Number of Persons/ Employees	Gallons/ Person/ Day	Gallons/ Day	Days/Year	Gallons/ Year	Average Day	Peak Day
Post UP MOD									
Staff	Weekday	Full Time Employees (FTE)	16	15	240	261	62640	160	240
		Part Time Employees (PTE)	5	7.5	37.5	261	9788	23	38
		Total					72428	183	278
	Weekend	FTE	3	15	45	104	4680	30	45
		PTE	5	7.5	37.5	104	3900	23	38
		Total					8580	53	83
	Crush	FTE	1	15	15	75	1125	15	15
		PTE	2	7.5	15	75	1125	15	15
		Total					2250	30	30
	Staff Total						83258	266	391
Wine Tastings									
Wine Tastings	Weekday	Max	45	3	135	261			135
		Average	40	3	120	261	31320	38	
	Weekend	Max	130	3	390	104			390
		Average	125	3	375	104	39000	375	
	Sub-Total						70320	413	525
Wine Tasting with Food Pairings		Max	40	2	80				80
		Avg	30	2	60	365	21900	60	
	Sub-Total						21900	60	80
	Wine Tasting Total						92220	473	605
Marketing Plan									
Events									
Private Promotions & Dinners		Max	50	10	500				500
		Average	40	10	400	15	6000	400	
Annual Wine Auction (with food)		Max	50	10	500				500
		Avg	40	10	400	2	800	400	
Wine Related Groups (with food)		Max	50	5	250				250
		Avg	40	5	200	36	7200	200	
Additional Meetings (with lunch or dinner)		Max	50	10	500				500
		Avg	40	10	400	50	20000	400	
Special Wine & Food Events		Max	60	10	600				600
		Avg	40	10	400	52	20800	400	
Chef's Dinner Series		Max	80	10	800				800
		Avg	70	10	700	48	33600	700	
	Events Total						88400	700	800
	Grand Total Annual Waste Water Generation						263878		
	Overall Average Waste Water Generation Per Day						723		

Attachment 3

State Water Resources Control Board water rights agreement
dated September 5, 1995

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

ORDER

Application 29096 Permit 20436 License _____

ORDER APPROVING A NEW DEVELOPMENT SCHEDULE

WHEREAS:

1. Permit 20436 was issued to Carneros Hills Wine Company on March 12, 1990, pursuant to Application 29096.

2. The permit was subsequently assigned to Avatar Wine Partners, L.P.

3. A petition for an extension of time within which to develop the project and apply the water to the proposed use has been filed with the State Water Resources Control Board.

4. The permittee has proceeded with diligence and good cause has been shown for said extension of time.

NOW, THEREFORE, IT IS ORDERED THAT:

Condition 9 of the permit be amended to read:

COMPLETE APPLICATION OF THE WATER TO THE PROPOSED USE SHALL BE MADE ON OR BEFORE December 31, 2005 (0000009)

Dated: September 5, 1995

for Edward C. Anton, Chief
Division of Water Rights

P 20436

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

ORDER

Application 29096 Permit 20436 License _____

ORDER CORRECTING
POINT OF DIVERSION DESCRIPTIONS

WHEREAS:

1. A request to correct the point of diversion descriptions under Permit 20436 has been filed with the State Water Resources Control Board.

2. Point of diversion No. 1 should also be described as a point of diversion to offstream storage in Reservoirs No. 2 and No. 3; Point of diversion No. 2 should also be described as a point of offstream storage and as a point of rediversion of water diverted from Point of diversion No. 1 to offstream storage in Reservoir No. 3.

3. Reservoir No. 3 was incorrectly described as a point of rediversion.

4. The State Water Resources Control Board has determined that said correction in the description of points of diversion will not initiate a new right nor operate to the injury of any other lawful user of the water and that good and sufficient cause has been shown for said correction.

NOW, THEREFORE, IT IS ORDERED THAT:

1. Paragraph 2 (The location of point of diversion:) under Permit 20436 be changed to read as follows:

ONSTREAM STORAGE AND DIVERSION TO OFFSTREAM STORAGE

1) South 2,300 feet and East 2,200 feet from NW corner of projected Section 5, being within the SE¼ of NW¼ of projected Section 5, T4N, R4W, MDB&M.

ONSTREAM STORAGE, OFFSTREAM STORAGE, DIVERSION TO OFFSTREAM STORAGE AND REDIVERSION TO OFFSTREAM STORAGE

2) North 900 feet and East 1,350 feet from SW corner of projected Section 5, being within the SE¼ of SW¼ of projected Section 5, T4N, R4W, MDB&M.

ONSTREAM STORAGE AND DIVERSION TO OFFSTREAM STORAGE

4) South 400 feet and West 2,050 feet from NE corner of projected Section 7, being within the NW¼ of NE¼ of projected Section 7, T4N, R4W, MDB&M.

Dated: JANUARY 20 1995

for David R. Berlinger
Edward C. Anton, Chief
Division of Water Rights

Permit F

STATE OF CALIFORNIA
WATER RESOURCES CONTROL BOARD
DIVISION OF WATER RIGHTS

PERMIT FOR DIVERSION AND USE OF WATER

PERMIT 20436

(OVER)

Application 29096 of Carneros Hills Wine Company

P.O. Box 3989, Napa, CA 94558

filed on August 17, 1987, has been approved by the State Water Resources Control Board SUBJECT TO VESTED RIGHTS and to the limitations and conditions of this Permit.

Permittee is hereby authorized to divert and use water as follows:

1. Source: Three Unnamed Streams

Tributary to: Mud Slough thence Napa River

2. Location of point of diversion:	40-acre subdivision of public land survey or projection thereof	Section *	Township	Range	Base and Meridan
ONSTREAM STORAGE AND DIVERSION TO OFFSTREAM STORAGE (1) SOUTH 2,300 FEET AND EAST 2,200 FEET FROM NW CORNER OF PROJECTED SECTION 5	SE¼ OF NW¼	5	4N	4W	MD
(2) NORTH 900 FEET AND EAST 1,350 FEET FROM SW CORNER OF PROJECTED SECTION 5	SE¼ OF SW¼	5	4N	4W	MD
(4) SOUTH 400 FEET AND WEST 2,050 FEET FROM NE CORNER OF PROJECTED SECTION 7	NW¼ OF NE¼	7	4N	4W	MD
POINT OF REDIVERSION (3) NORTH 650 FEET AND EAST 200 FEET FROM SW CORNER OF PROJECTED SECTION 5	SW¼ OF SW¼	5	4N	4W	MD

County of Napa

*projected

3. Purpose of use:	4. Place of use:	Section *	Township	Range	Base and Meridan	Acre
RECREATIONAL AND WILDLIFE ENHANCEMENT	AT THE RESERVOIRS WITHIN PROJECTED SECTION 5, 6 & 7					
IRRIGATION	NW¼, NE¼, SE¼ AND SW¼	5	4N	4W	MD	161
	NE¼ & SE¼	6	4N	4W	MD	168
	NE¼	7	4N	4W	MD	26
	NW¼	8	4N	4W	MD	5
					TOTAL	360

The place of use is shown on map on file with the State Water Resources Control Board.

WRCB 14 (6-89)

5. The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed a total of 297 acre-feet per annum to be collected from October 15 of each year to April 30 of the succeeding year as follows: (1) 49 acre-feet per annum in #1 reservoir, (2) 49 acre-feet per annum in #2 reservoir, (3) 150 acre-feet per annum in #3 reservoir and (4) 49 acre-feet in #4 reservoir. (0000005)

This permit does not authorize collection of water to storage outside of the specified season to offset evaporation and seepage losses or for any other purpose. (000005I)

The maximum rate of diversion to offstream storage shall not exceed 10 cubic feet per second. (000005J)

6. The amount authorized for appropriation may be reduced in the license if investigation warrants. (0000006)

7. Construction work shall begin within two years of the date of this permit and shall thereafter be prosecuted with reasonable diligence, and if not so commenced and prosecuted, this permit may be revoked. (0000007)

8. Construction work shall be completed by December 31, 1993. (0000008)

9. Complete application of the water to the authorized use shall be made by December 31, 1994. (0000009)

10. Progress reports shall be submitted promptly by permittee when requested by the State Water Resources Control Board until license is issued. (0000010)

11. Permittee shall allow representatives of the State Water Resources Control Board and other parties as may be authorized from time to time by said Board, reasonable access to project works to determine compliance with the terms of this permit. (0000011)

12. Pursuant to California Water Code Sections 100 and 275, and the common law public trust doctrine, all rights and privileges under this permit and under any license issued pursuant thereto, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Resources Control Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use or unreasonable method of diversion of said water.

The continuing authority of the Board may be exercised by imposing specific requirements over and above those contained in this permit with a view to eliminating waste of water and to meeting the reasonable water requirements of permittee without unreasonable draft on the source. Permittee may be required to implement a water conservation plan, features of which may include but not necessarily be limited to: (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this permit and to determine accurately water use as against reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the Board also may be exercised by imposing further limitations on the diversion and use of water by the permittee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the Board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution Article X, Section 2; is consistent with the public interest and is necessary to preserve or restore the uses protected by the public trust. (0000012)

13. The quantity of water diverted under this permit and under any license issued pursuant thereto is subject to modification by the State Water Resources Control Board if, after notice to the permittee and an opportunity for hearing, the Board finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to Division 7 of the Water Code. No action will be taken pursuant to this paragraph unless the Board finds that (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges which have any substantial effect upon water quality in the area involved, and (2) the water quality objectives cannot be achieved solely through the control of waste discharges. (0000013)

14. Permittee shall install and maintain an outlet pipe of adequate capacity in each dam as near as practicable to the bottom of the natural stream channel in order that water entering the reservoirs which is not authorized for appropriation under this permit may be released. Before starting construction, permittee shall submit plans and specifications of the outlet pipes to the Chief of the Division of Water Rights for approval. Before storing water in the reservoirs, permittee shall furnish evidence which substantiates that the outlet pipes have been installed in the dams. Evidence shall include photographs showing completed works or certification by a registered Civil or Agricultural Engineer. (0050043)

15. Permittee shall install and maintain devices satisfactory to the State Water Resources Control Board to measure water diverted into each reservoir from Unnamed Streams at diversion points 1, 2 and 4, and water released from or flowing out of each reservoir. (0000046)

16. Permittee shall install and properly maintain in the reservoirs staff gages, satisfactory to the State Water Resources Control Board, for the purpose of determining water levels in the reservoirs.

Permittee shall record the staff gage readings on or about October 1 of each year. Such readings shall be supplied to the State Water Resources Control Board with the next progress report submitted to the Board by permittee. (0070047) (0100047)

This permit is issued and permittee takes it **subject to the following provisions of the Water Code:**

Section 1390. A permit shall be effective for such time as the water actually appropriated under it is used for a useful and beneficial purpose in conformity with this division (of the Water Code), but no longer.

Section 1391. Every permit shall include the enumeration of conditions therein which in substance shall include all of the provisions of this article and the statement that any appropriator of water to whom a permit is issued takes it subject to the conditions therein expressed.

Section 1392. Every permittee, if he accepts a permit, does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefor shall at any time be assigned to or claimed for any permit granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any permittee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any permittee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

Dated: MARCH 1 2 1990

STATE WATER RESOURCES CONTROL BOARD

Roger K. Mueller

for Chief, Division of Water Rights

67809-962 2-79 4M ◇ OBP

Attachment 4

Sonoma County Valley Sanitation District
"Recycled Water Agreement"

Per California Government Code 27383, there shall be no fee for recording

Recording Requested By
Sonoma County Water Agency

When recorded return conformed copy to:
Executive Secretary
Sonoma County Water Agency
404 Aviation Blvd.
Santa Rosa, CA 95403-9019

2015011609
Official Records Of Sonoma County
William F. Rousseau

02/13/2015 02:46 PM
Fee: $ 0.00 23 Pages

CONFORMED COPY

smk: document2 3/14/2014 10:40 AM

Space above this line reserved for Recorder's use

"Working Today for Water Tomorrow"
The Sonoma County Water Agency's Integrated Management Policy for ISO 9001 and 14001 states that we are committing to always improving, achieving customer satisfaction, total regulatory compliance, environmental stewardship, and resource management.

Recycled Water Use Agreement between Sonoma Valley County Sanitation District and **Bouchaine Vineyards Inc.**, a California Corporation; **Koerner Rombauer,** as Trustee of the Koerner Rombauer Revocable Trust u/a/d 7/6/95 as amended; and **Koerner Rombauer,** as Trustee of the Joan K. Rombauer Marital Trust B u/a/d 7/6/95; **Buchli Station Vineyards, LLC,** formerly known as Napa Big Horn Vineyards, LLC, a California Limited Liability Company; and **Midnight Sun Inc. III, a Delaware Corporation** (Recycled Water User)

This Agreement is between Sonoma Valley County Sanitation District (hereinafter "District"), and Bouchaine Vineyards Inc., a California Corporation; Koerner Rombauer, as Trustee of the Koerner Rombauer Revocable Trust u/a/d 7/6/95 as amended; and Koerner Rombauer, as Trustee of the Joan K. Rombauer Marital Trust B; Buchli Station Vineyards, LLC, formerly known as Napa Big Horn Vineyards, LLC, a California Limited Liability Company; and Midnight Sun Inc. III, a Delaware Corporation , (collectively hereinafter "Recycled Water User"). The District is operated by the Sonoma County Water Agency ("Agency") pursuant to Contract.

RECITALS

A. Bouchaine Vineyards Inc., a California Corporation owns approximately 102.28 acres of real property identified as Assessor's Parcel No(s). 047-320-031 located at (physical address) 1075 Buchli Station Road, Napa CA (hereinafter "Lands") as shown on Attachment A. Attachment A is herein incorporated by reference. Lands are used for rural and/or premium grape and/or agricultural purposes. District has allocated a maximum of 37.8 acre feet of off season recycled water for Bouchaine Vineyards Inc. purchase and use subject to this Recycled Water Use Agreement.

Bouchaine Vineyards Inc.'s allocation equates to 35% of the combined Recycled Water User allocation

B. Koerner Rombauer, as Trustee of the Koerner Rombauer Revocable Trust u/a/d 7/6/95 as amended; and Koerner Rombauer, as Trustee of the Joan K. Rombauer Marital Trust B owns approximately 42.93 acres of real property identified as Assessor's Parcel No(s). 047-320-030 located at (physical address) 1194 Buchli Station Road, Napa CA (hereinafter "Lands") as shown on Attachment A. Attachment A is herein incorporated by reference. Lands are used for rural and/or premium grape and/or agricultural purposes. District has allocated a maximum of 18.7 acre feet of off season recycled water for Koerner Rombauer purchase and use subject to this Recycled Water Use Agreement. Koerner Rombauer's allocation equates to 18% of the combined Recycled Water User allocation.

C. Buchli Station Vineyards, LLC, formerly known as Napa Big Horn Vineyards, LLC, a California Limited Liability Company owns approximately 173.42 acres of real property identified as Assessor's Parcel No(s). 047-320-027 located at (physical address) Buchli Station Road, Napa CA (hereinafter "Lands") as shown on Attachment A. Attachment A is herein incorporated by reference. Lands are used for rural and/or premium grape and/or agricultural purposes. District has allocated a maximum of 23.4 acre feet of off season recycled water for Buchli Station Vineyards LLC's purchase and use subject to this Recycled Water Use Agreement. Buchli Station Vineyards LLC's allocation equates to 22% of the combined Recycled Water User allocation.

D. Midnight Sun Inc. III, a Delaware Corporation owns approximately 115.24 acres of real property identified as Assessor's Parcel No(s). 047-320-027 located at (physical address) 1183 Buchli Station Road, Napa CA (hereinafter "Lands") as shown on Attachment A. Attachment A is herein incorporated by reference. Lands are used for rural and/or premium grape and/or agricultural purposes. District has allocated a maximum of 27.0 acre feet of off season recycled water for Midnight Sun Inc. III purchase and use subject to this Recycled Water Use Agreement. Midnight Sun Inc. III's allocation equates to 25% of the combined Recycled Water User allocation.

E. Recycled Water User is subject to the Amended and Restated Carneros-West Water Sharing and Easement Agreement recorded on February 24, 2004 under Document Number 2004-0005391 of Official Records of the County of Napa which governs use of the existing storage reservoirs to be used for delivery of off season recycled water as reasonably approved by Recycled Water User.

F. District owns and operates certain wastewater treatment and disposal facilities (hereinafter referred to as "Facilities") known the Sonoma Valley County Sanitation District Treatment Plant, which generate tertiary-treated recycled water that District must dispose of during certain times of the year.

G. Recycled water produced by the District meets the State of California standards for tertiary-treated recycled water.

H. District is willing to provide, and Recycled Water User is willing to accept, delivery of certain quantities of recycled water for irrigation and disposal on all or portions of the lands subject to the terms and conditions herein.

I. Recycled Water User is responsible for the proper use of the recycled water accepted.

J. References to "District" employees are understood to be Sonoma County Water Agency employees acting on behalf of the District.

K. The General Manager of the Sonoma County Water Agency has been authorized by District Board of Directors resolution to enter into certain agreements for the District.

L. District is currently pursuing certification for International Organization for Standardization (ISO) 9001 and 14001. ISO provides a program for documentation and consistent implementation of an organization's processes in order to ensure repeatability, accuracy, and predictability while achieving optimal customer satisfaction. ISO 9001 refers to Quality Management Systems (QMS) and ISO 14001 refers to Environmental Management Systems (EMS). The QMS focuses on business performance and achieving success, while the EMS focuses on reducing District's environmental impact. District has integrated the two management systems into one system referred to as District's EMS/QMS.

AGREEMENT

District and Recycled Water User agree as follows:

1. RECITALS

A. The above recitals are true and correct.

2. LIST OF ATTACHMENTS

A. The following attachments are hereby made an integral part of this Agreement:

1. Attachment A: Location Map
2. Attachment B: Recycled Water Use Requirements

3. TERM

A. The term of this agreement is for a period of 5 years commencing upon on the date the agreement is signed by all parties.

4. RECYCLED WATER COMMITTED USE

A. **Water use:** Recycled Water User agrees to use and District agrees to deliver, subject to the conditions and limitations specified in this Agreement, a maximum of 106.9 acre-feet of Off Season recycled water, herein referred to as "Committed Use," of each year. It is understood that 106.9 acre-feet represents the *maximum obligation* of Recycled Water User and District. It is further understood that the actual amount of recycled water use may, subject to conditions and limitations specified in this Agreement, exceed the minimum obligation depending on the Recycled Water User's current operations and District need for disposal of recycled water.

B. **Requests for additional water during the Off Season:** Requests by either party to have Recycled Water User take additional recycled water during the Off Season as defined in Paragraph 5 (Recycled Water Delivery) may be made and approved verbally by the Operations Superintendent-East or designee, and Recycled Water User, subject to the conditions and limitations specified in this Agreement.

5. RECYCLED WATER DELIVERY

A. **Location of water delivery:** During the Off Season of each year, District will deliver recycled water from District's recycled water pipeline system turnout to Recycled Water User at location shown on Attachment A.

B. **Delivery period:** Recycled Water User understands that the recycled water delivery period is the Off Season identified in the table below and that the Committed Use refers to water

deliveries during the Off Season; however, recycled water may also be available to Recycled Water User during the Irrigation Season identified in the table below.

Facility	Irrigation Season	Off Season
Sonoma Valley County Sanitation District	May 1 to October 31 (Summer Water)	Nov. 1 to April 30 (Winter Water)

C. Coordination for water delivery: Recycled Water User shall coordinate with District's Operations and Maintenance Division at (707) 523-1070 for all water delivery.

D. Limitations precluding delivery of recycled water: Notwithstanding the requirements for District to deliver recycled water as stated in this Agreement, both parties to this Agreement recognize and agree that such delivery of water may at times be precluded for unanticipated reasons or for reasons beyond the control of District. District will not be obligated to provide water when delivery is prevented by Acts of God, shortage of recycled water, reduction in transmission capacity, malfunction of District's system, temporary imbalance of recycled water in the various storage ponds, changes in operations, discharge or monitoring requirements, a determination by any regulatory agency that recycled water is not suitable for the intended use, a determination that the activity is unlawful, a determination that the activity may violate any operations permits, including but not limited to any National Pollutant Discharge Elimination System Permits and/or permits under state authority issued to the District as these permits currently exist or may be revised in the future (hereinafter "Permits"), or a determination that a constituent of the recycled water is harmful to the plants being irrigated, or any other unanticipated cause or cause outside the control of District.

E. Limitations precluding receipt of recycled water: Recycled Water User shall not be obligated to accept all or any of the recycled water if receipt of the recycled water would be harmful to Recycled Water User because of any adverse impact on vineyards, unreasonable costs, the quantity exceeds storage capacity or is prevented by Acts of God.

6. OTHER COOPERATING CUSTOMERS

A. Recycled Water User recognizes and understands that District is obligated to deliver recycled water to other cooperating recycled water customers. District will endeavor to supply recycled water to Recycled Water User so that the maximum specified amount can be used by Recycled Water User, and, in the event of shortage for any reason, to be equitable between Recycled Water User and all other cooperating recycled water customers, as reasonably determined by District in supplying recycled water. District intends that delivery of recycled water to the cooperating recycled water customers will have preference, when reasonably possible, over delivery to District owned land. However, District cannot assure uninterrupted supply of recycled water to Recycled Water User.

7. RECYCLED WATER QUALITY

A. The recycled water delivered to the Recycled Water User by District will be treated to the tertiary level, and will generally be of quality in compliance with the District's applicable National Pollutant Discharge Elimination System permit and any accompanying Waste Discharge Permits administered by the San Francisco Bay Regional Water Quality Control Board (hereinafter "SFRWQCB"). District also maintains compliance with the current California Department of Health Services regulations. District will make available for informational purposes to Recycled Water User such test reports as are periodically required

of District by regulatory agencies to characterize the recycled water. The results of these tests are maintained at the Sonoma County Water Agency Operations Office, 404 Aviation Boulevard, Santa Rosa, California, and may be obtained by Recycled Water User telephoning (707) 523-1070. No warranty as to suitability of the recycled water for any particular use is given.

8. RECYCLED WATER APPLICATION RESTRICTIONS

A. Recycled Water User agrees to irrigate in such a manner that is compatible with good farming practices on Recycled Water User's land, consistent with runoff, ponding, and environmental restrictions specified in Attachment B to this Agreement or otherwise required pursuant to law, regulation or Permits, and not harmful to the crop.

B. Recycled Water User shall not allow the recycled water to be used in violation of any law, regulation, ordinance, or provision of the Permits. Recycled Water User's attention is directed to the regulations contained in the California Code of Regulations, Title 22. Recycled Water User acknowledges that he has read Title 22 and is familiar with its content. Recycled Water User shall comply with the parts of said regulations that are pertinent to Recycled Water User's use of the recycled water. Current excerpts from the California Department of Health Services regulations, which may be applicable to Recycled Water User, and other requirements, are included in Attachment B for Recycled Water User's convenience only and should not be relied upon by Recycled Water User as a statement of current or future law. In addition, Recycled Water User acknowledges receipt of Attachment B attached hereto which contains information regarding restrictions that may be applicable to Recycled Water User's use of recycled water.

C. Recycled Water User agrees to notify District's Operations and Maintenance Section (707-523-1070) of Title 22 violations or damage to District irrigation facilities within 24 hours of discovery of such violation or damage. Recycled Water User shall be solely responsible for the cost of repair for damage occurring to District equipment as a result of Recycled Water User's activities.

D. If Recycled Water User does not comply with laws, regulations, ordinances, or Permit provisions governing the use of recycled water, District may immediately curtail recycled water delivery, notify Recycled Water User of such infraction in writing, and, if Recycled Water User does not rectify the infraction within two (2) calendar days after notice, District may immediately terminate this Agreement.

9. PERMISSION TO ENTER

A. Recycled Water User agrees to provide to District a right of access to the Lands for the purpose of operation, equipment maintenance, sampling, meter reading, and observation as needed.

B. Recycled Water User agrees to allow District to install pipelines, meters, and equipment on land controlled by Recycled Water User and intended for recycled water distribution. In addition, Recycled Water User hereby grants District, acting through its duly authorized employees, agents, representatives, or contractors, reasonable access to Recycled Water User's property to do any necessary work associated with installation of equipment required by this Agreement or pursuant to the Permits, meter reading, verification or recycled water use, or any other monitoring of recycled water-related activity on said Lands. When entering Recycled Water User's Lands, District will interfere as little as possible with Recycled Water User's operations and usage of the Lands.

C. District agrees to provide a minimum of 48 hour notice prior to accessing Recycled Water User's land for any routine access required by this agreement. District shall have the right to access Recycled Water User's without prior notification for emergency repairs but shall notify Recycled Water User of said access as soon as practical following said access.

10. PAYMENT

A. At the time of execution of this Agreement, the District has established a charge (cost per 1000-gallons) for delivery of recycled water. The initial annual charge imposed by District is $0.91 per 1000-gallons for water delivered during the Irrigation Season and $0.23 per 1000-gallons for water delivered in the Off Season. For each subsequent year, this amount may be compounded by 5% per year. The District will prepare an invoice for each party to this agreement at the end of the irrigation season in the year which charges for recycled water are assessed. Within thirty (30) days of receipt of an invoice, Recycled Water User shall pay District the sum of money due, calculated by multiplying the volume of water delivered to Recycled Water User during the previous year by the cost per 1000-gallons as established by the District by the percentage of the party's Recycled Water User allocation. Bouchaine Vineyards Inc.'s percentage is 35%. Koerner Rombauer's percentage is 18%. Buchli Station Vineyards Inc.'s percentage is 22%. Midnight Sun Inc. III's percentage is 25%.

11. TAXES

A. Recycled Water User recognizes that this Agreement may create a possessory interest subject to property taxation and that Recycled Water User may be subject to the payment of property taxes levied on such interest (Revenue and Taxation Code Section 107.6). Recycled Water User shall pay, before delinquency, all taxes, assessments, license fees, and other charges (hereinafter referred to as "taxes") that are levied or assessed during the term of this Agreement against Recycled Water User's interest in personal property installed or located in or upon Recycled Water User's premises and any such taxes measured by the value of District's interest in such personal property. Upon the District's demand, Recycled Water User shall furnish District with satisfactory evidence of any such tax payments. If any taxes are levied against District or if, as a consequence of this Agreement, District incurs a tax obligation greater than, or in addition to, that which would be borne by District in the absence of this Agreement, Recycled Water User, upon demand of District, shall immediately reimburse District for the sum of taxes so levied against or borne by District.

12. CHANGES TO AGREEMENT

A. Changes to the Agreement may be authorized by written amendments to this Agreement or by separate written agreements signed by the Chair of the District's Board of Directors. The parties expressly recognize that, except to the extent authorized herein, District personnel are without authorization to waive agreement terms.

B. Verbal authorization: Requests for additional water, as referred to in Paragraph 4 (Recycled Water Committed Use), may be authorized verbally.

C. Written amendments by General Manager: Changes to the Committed Use, or requests for additional water during Irrigation Season, as referred to in Paragraph 4 (Recycled Water Committed Use),may be authorized by written amendments to this Agreement signed by Recycled Water User and the General Manager of the Agency.

D. Written amendments by Chair of District's Board of Directors: All other changes to the Agreement may be authorized only by written amendments to this Agreement, or by separate written agreements, signed by the Recycled Water User and Chair of the District's

Board of Directors. The parties contemplate an amendment to this Agreement when the Facilities are upgraded and are able to deliver disinfected tertiary recycled water. The parties expressly recognize that, except to the extent authorized herein, District personnel are without authorization to waive Agreement terms.

13. SUCCESSORS/USE

A. The right and benefit to receive and the obligation to take recycled water shall be a covenant running with the Lands, and the obligation to provide recycled water shall be that of District. Recycled Water User shall provide District with thirty (30) days advance written notice of any transfer of title or interest of the Facilities or Lands. Upon transfer of title or interest of the Facilities or Lands, all rights, duties, and obligations undertaken by this Agreement shall succeed to the new owner(s), lessees, heirs, executors, or assigns.

B. Recycled Water User agrees that recycled water will be used only on the Lands.

14. MUTUAL INDEMNIFICATION

A. Each party shall indemnify, defend, protect, hold harmless, and release the other, its officers agents, and employees, from and against any and all claims, loss, proceedings, damages causes of action, liability, costs, or expense (including attorneys' fees and witness costs) arising from or in connection with, or caused by any act, omission, or negligence or willful misconduct of such indemnifying party. This indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages or compensation payable to or for the indemnifying party under worker's compensation acts, disability benefit acts, or other employee benefit acts.

15. METHOD AND PLACE OF GIVING NOTICE, SUBMITTING BILLS AND MAKING PAYMENTS

All notices, bills, and payments shall be made in writing and may be given by personal delivery or by mail. Notices, bills, and payments sent by mail shall be addressed as follows:

Sonoma Valley County Sanitation District:
Operations Superintendent, East
Sonoma County Water Agency
404 Aviation Blvd.
Santa Rosa, CA 95403-9019

Recycled Water User:
Bouchaine Vineyards Inc.
Attn: Michael Richmond
1075 Buchli Station Road
Napa, CA 94559-9706
Ph#: 707-252-9065
Koerner Rombauer, Trustee
Attn: Mr. James C. Davis
3522 Silverado Trail North
St. Helena, CA 94574-9663
Ph#: 707- 479-3858

Buchli Station Vineyards Inc.
Attn: Mr. Phil Borgmeyer
1091 Larkmead Lane
Calistoga, CA 94515-9675
Ph#: 707- 942-0859

Midnight Sun Inc. III
Attn: Mr. Erik Roget
1920 Tienda Drive, Suite 204
Lodi, CA 95242-3932
Ph#: 209-368-8874

And when so addressed, shall be deemed given upon deposit in the United States mail, postage prepaid. In all other instances, notices, bills, and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to whom notices, bills, and payments are to be given by giving notice pursuant to this paragraph.

16. MISCELLANEOUS PROVISIONS

A. No Waiver of Breach: The waiver by District of any breach of any term or promise contained in this Agreement shall not be deemed to be a waiver of such term or provision or any subsequent breach of the same or any other term or promise contained in this Agreement.

B. Construction: To the fullest extent allowed by law, the provisions of this Agreement shall be construed and given effect in a manner that avoids any violation of statute, ordinance, regulation, or law. The parties covenant and agree that in the event that any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.

Recycled Water User and District acknowledge that they have each contributed to the making of this Agreement and that, in the event of a dispute over the interpretation of this Agreement; the language of the Agreement will not be construed against one party in favor of the other. Recycled Water User and District acknowledge that they have each had an adequate opportunity to consult with counsel in the negotiation and preparation of this Agreement.

C. Third Party Beneficiaries: Nothing contained in this Agreement shall be construed to create and the parties do not intend to create any rights in third parties.

D. Captions: The captions in this Agreement are solely for convenience of reference. They are not a part of this Agreement and shall have no effect on its construction or interpretation.

E. Merger: This writing is intended both as the final expression of the agreement between the parties hereto with respect to the included terms and as a complete and exclusive statement of the terms of the agreement, pursuant to Code of Civil Procedure Section 1856. No modification of this Agreement shall be effective unless and until such modification is evidenced by a writing signed by both parties.

F. Time of Essence: Time is and shall be of the essence of this Agreement and every provision hereof.

17. TERMINATION

A. Except as expressly set forth in Paragraph 8 Recycled Water Application Restrictions herein, should one party breach any of the terms and conditions in this Agreement, written notice of such breach shall be given to the other party. If the breach is not cured within twenty-one (21) calendar days of the breach, the other party may, in addition to any remedies provided by this Agreement or by law, terminate this Agreement on an additional fifteen (15) calendar day's written notice to the breaching party.

18. RESTRICTIONS ON DISCHARGE INTO WATERS OF THE STATE

A. Recycled Water User understands and acknowledges that District is legally required to dispose of recycled water on land during the Irrigation Season as defined in Paragraph 5 (Recycled Water Delivery) and is not permitted to release it into the San Pablo Bay or its tributaries during this period. Therefore, District is relying on a good-faith performance of Recycled Water User in accepting and using recycled water. If Recycled Water User, as reasonably determined by District, fails to accept and dispose of the recycled water as agreed herein, Recycled Water User and District agree that District will suffer irreparable harm and will not be adequately compensated by money damages for said harm. The parties to this Agreement agree that District may obtain an injunction compelling specific performance of this Agreement together with such other relief as may be allowed under this Agreement or by law.

19. MEDIATION OF DISPUTES PRIOR TO ARBITRATION

Except as provided in Paragraphs 8 (Recycled Water Application Restrictions), 17 (Termination), and 18 (Restrictions On Discharge Into Waters Of The State), if a dispute arises out of or relates to this Agreement, or an alleged breach of it, and if the dispute cannot be settled through negotiation, then before resorting to arbitration, the Recycled Water User and District agree first to try in good faith to settle the dispute by mediation. Costs for the mediation shall be borne equally by the parties, except costs for witnesses, preparation materials and evidence incurred by a party for its own benefit. If the parties cannot agree on a mediator or mediation rules to use the parties shall use the construction industry mediation procedures developed by the American Arbitration Association, with the following exceptions or terms in addition to those procedures:

A. The mediation shall be conducted at Santa Rosa, California.

B. Unless otherwise agreed in writing by the parties, the mediation shall be concluded no later than ninety (90) days after initiation of the mediation. At the end of the mediation period, any party may elect to initiate arbitration pursuant to Paragraph 20 (Arbitration) of this Agreement.

C. The parties shall exchange all relevant non-privileged documents fifteen (15) days before the first mediation session.

Any mediation proceeding shall be confidential and shall not be admissible in a subsequent proceeding. If any party commences an arbitration or court action based on a dispute or claim to which this section applies without first attempting to resolve the matter through mediation, then the other party may apply to such arbitrator or judge for an order staying the arbitration or court action pending mediation.

20. ARBITRATION

Except as provided in Paragraphs 8 (Recycled Water Application Restrictions), 17 (Termination), and 18 (Restrictions On Discharge Into Waters Of The State), any claims,

disputes, or controversies arising out of or relating to this Agreement, or breach thereof, if not previously resolved by negotiation or mediation pursuant to Paragraph 19 (Mediation of Disputes Prior to Arbitration) of this Agreement, shall be settled by arbitration administered by the American Arbitration Association under its Commercial Arbitration Rules (except as modified by A and B immediately below) and judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof, provided, however, that:

A. All arbitration proceedings shall take place in Santa Rosa, California.

B. In order to expedite matters and limit costs consistent with the purposes of arbitration, the number of depositions and other discovery shall be appropriate to the amount in dispute and the complexity of the issues, and the arbitrator shall have express authority to limit the number of depositions and other discovery if the parties cannot agree. Written interrogatories will not be permitted. With these exceptions Commercial Arbitration Rules regarding discovery shall apply.

21. COUNTERPART

This Agreement may be executed and acknowledged in any number of counterparts and each such counterpart shall for all purposes be deemed to be an original and all such counterparts shall together constitute but one and the same instrument.

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IN WITNESS WHEREOF, the parties hereto have executed this Agreement as set forth below.

Reviewed as to funds by District:

Division Manager - Administrative Services

Reviewed as to form by County Counsel:

County Counsel

RECYCLED WATER USER:

Koerner Rombauer, as Trustee of the Koerner Rombauer Revocable Trust u/a/d 7/6/95 as amended

By: _____
(Signature)

KOERNER ROMBAUER
(Please print name here)

Title: TRUSTEE

Date: 10/24/14

Koerner Rombauer, as Trustee of the Joan K. Rombauer Marital Trust B u/a/d 7/6/95

By: _____
(Signature)

KOERNER ROMBAUER
(Please print name here)

Title: TRUSTEE

Date: 10/24/14

Bouchaine Vineyards Inc., a California Corporation

By: _____
(Signature)

_____
(Please print name here)

Title: _____

Date: _____

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as set forth below.

Reviewed as to funds by District:

_____

Division Manager - Administrative Services

Reviewed as to form by County Counsel:

_____

County Counsel

RECYCLED WATER USER:

Koerner Rombauer, as Trustee of the Koerner Rombauer Revocable Trust u/a/d 7/6/95 as amended

By: _____
(Signature)

_____
(Please print name here)

Title: _____

Date: _____

Koerner Rombauer, as Trustee of the Joan K. Rombauer Marital Trust B u/a/d 7/6/95

By: _____
(Signature)

_____
(Please print name here)

Title: _____

Date: _____

Bouchaine Vineyards Inc., a California Corporation

By: _____
(Signature)

GERRET COPELAND
(Please print name here)

Title: CHAIRMAN

Date: Nov. 12, 2014

Buchli Station Vineyards Inc.

By: _____
(Signature)

Richard French
(Please print name here)

Title: Owner

Date: 11/14/14

Midnight Sun Inc. III

By: _____
(Signature)

_____
(Please print name here)

Title: _____

Date: _____

Sonoma Valley County Sanitation District

By: _____
Grant Davis, General Manager
Authorized per Board Action on
January 15, 2002

Date: 1/16/15

Buchli Station Vineyards Inc.

By: _____
(Signature)

_____
(Please print name here)

Title: _____

Date: _____

Midnight Sun Inc. III

By: _____
(Signature)

ERIK C. ROBET
(Please print name here)

Title: VICE PRESIDENT

Date: _____

Sonoma Valley County Sanitation District

By: _____
Grant Davis, General Manager
Authorized per Board Action on
January 15, 2002

Date: _____

State of CALIFORNIA

County of NAPA

On October 24, 2013 before me, Lynn S. Sletto, NOTARY PUBLIC
DATE NAME, TITLE OF OFFICER -- E.G. "JANE DOE, NOTARY PUBLIC"

Personally appeared Koerner Rombauer
NAME(S) OF SIGNER(S)

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.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

LYNN S. SLETTO
Commission # 2004481
Notary Public - California
Napa County
My Comm. Expires Jan 18, 2017

WITNESS my hand and official seal.

SIGNATURE OF NOTARY

DESCRIPTION OF ATTACHED DOCUMENT

DESCRIPTION OF DOCUMENT (OPTIONAL)

State of Delaware

County of New Castle

On November 12, 2014 before me, Kathleen P. Liedel, Notary Public
DATE NAME, TITLE OF OFFICER -- E.G. "JANE DOE, NOTARY PUBLIC"

Personally appeared Gerret Copeland
NAME(S) OF SIGNER(S)

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.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

KATHLEEN P. LIEDEL NOTARY PUBLIC STATE OF DELAWARE My Comm Expires October 22, 2016 20141022000009

WITNESS my hand and official seal.

Kathleen P. Liedel
SIGNATURE OF NOTARY

DESCRIPTION OF ATTACHED DOCUMENT

DESCRIPTION OF DOCUMENT (OPTIONAL)

State of California

County of Napa

On 11/14/14 before me, Rachelle Logan, Notary Public
DATE NAME, TITLE OF OFFICER – E.G. "JANE DOE, NOTARY PUBLIC"

Personally appeared Richard H. Frank
NAME(S) OF SIGNER(S)

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.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

RACHELLE ANNE LOGAN
Commission # 1937370
Notary Public - California
Napa County
My Comm. Expires Jun 4, 2015

WITNESS my hand and official seal.

SIGNATURE OF NOTARY

DESCRIPTION OF ATTACHED DOCUMENT

Sonoma Cty Water Agency
DESCRIPTION OF DOCUMENT (OPTIONAL)

Recycled Water Use Agreement

State of CALIFORNIA

County of SAN JOAQUIN

On NOVEMBER 7, 2014 before me, SEAN TULLY, NOTARY PUBLIC

DATE NAME, TITLE OF OFFICER -- E.G. "JANE DOE, NOTARY PUBLIC"

Personally appeared ERIC C. ROGET

NAME(S) OF SIGNER(S)

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.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

SEAN TULLY
COMM. # 2061086
NOTARY PUBLIC-CALIFORNIA
SAN JOAQUIN COUNTY
My Commission Expires MARCH 14, 2018

SIGNATURE OF NOTARY

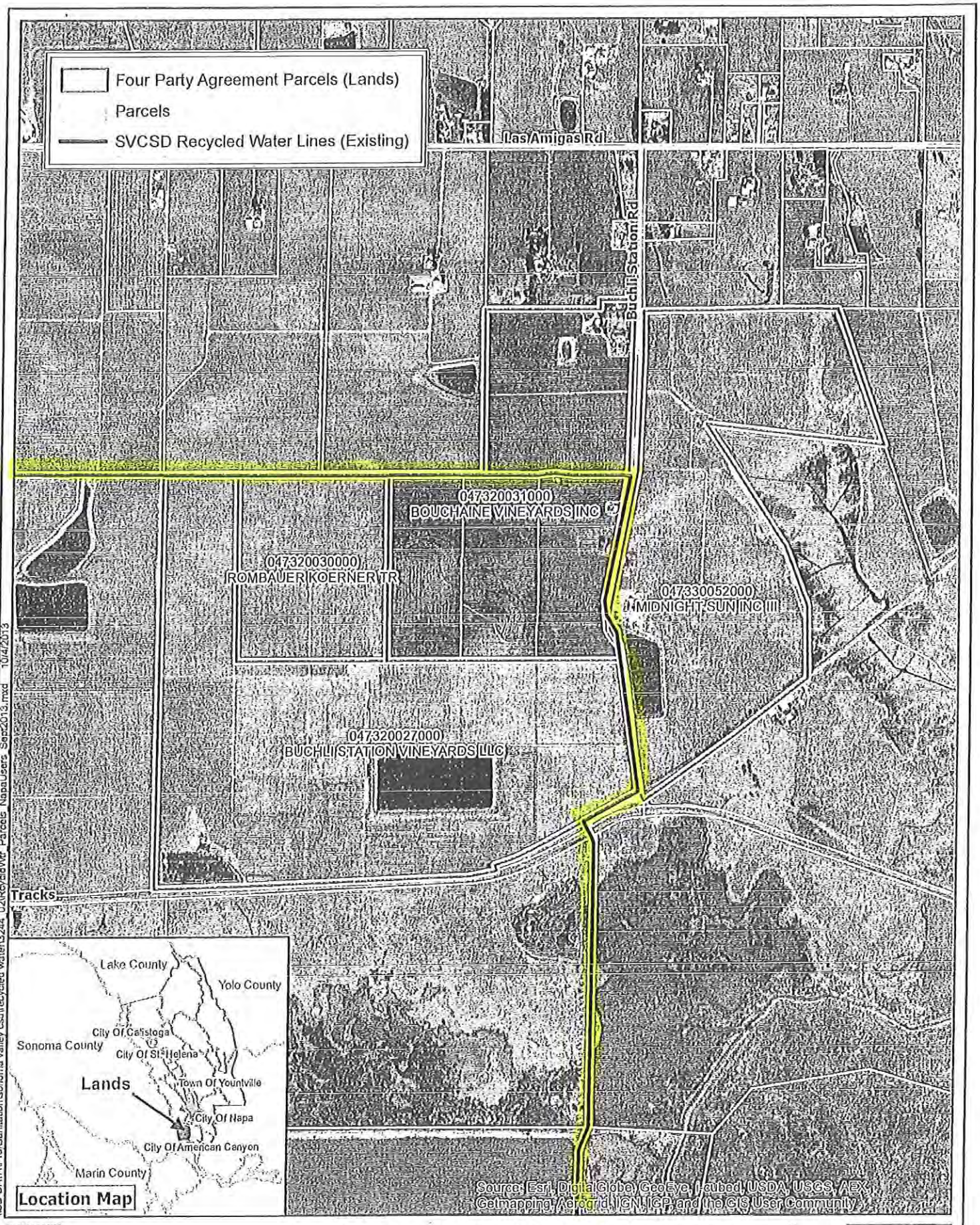
DESCRIPTION OF ATTACHED DOCUMENT

RECYCLED WATER USE AGREEMENT

DESCRIPTION OF DOCUMENT (OPTIONAL)

ATTACHMENT A

Map



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SONOMA COUNTY WATER AGENCY

Four Party Agreement Lands (Napa County)
Recycled Water Use Agreement
Sonoma Valley County Sanitation District

ATTACHMENT B
RECYCLED WATER USE REQUIREMENTS

Recycled water produced at the Facilities by District generally meets the requirements for disinfected tertiary recycled water as defined by California Code of Regulations (CCR) Title 22, Division 4, and Chapter 3.

Irrigation with recycled water shall be performed in accordance with CCR Title 22 and the applicable National Pollutant Discharge Elimination System (NPDES) Permit or other operating permit. The treatment, storage, distribution, or reuse of recycled water shall not create a condition of pollution or nuisance as defined in Section 13050(m) of the California Water Code.

Irrigation Area Requirements

Irrigation area requirements specified in CCR Title 22, Section 60310, which pertain to disinfected tertiary recycled water include, but are not limited to the following:

- No irrigation with disinfected tertiary recycled water shall take place within 50 feet of any domestic water supply well.
- Any use of recycled water shall comply with the following: (1) Any irrigation runoff shall be confined to the recycled water use area unless otherwise authorized by the regulatory agency; (2) Spray, mist, or runoff shall not enter a dwelling or a food handling facility; (3) Drinking water fountains and designated outdoor eating areas shall be protected against contact with recycled water spray, mist, or runoff.
- No spray irrigation of any recycled water, other than disinfected tertiary recycled water, shall take place within 50 feet of a residence or a place where public exposure could be similar to that of a park, playground, or school yard.
- All areas where recycled water is used and that are accessible to the public shall be posted with conspicuous signs, in a size no less than 4 inches high by 8 inches wide that include the following wording: "RECYCLED WATER - DO NOT DRINK".
- Except as allowed under Section 7604 of Title 17, no physical connection shall be made or allowed to exist between any recycled water system and any separate system conveying potable water.
- The recycled water system shall not include any hose bibs. Quick couplers that are different from that used on the potable water system may be used.
- Recycled water shall not be applied to irrigation areas during periods when uncontrolled runoff may occur.
- Recycled water shall be applied in such a manner so as not to exceed vegetative demand or field capacity.
- No impoundment of disinfected recycled water shall occur within 100 feet of any domestic water supply well.
- Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitoes and other disease vectors, and to avoid creation of a public nuisance or health hazard. Irrigation water shall infiltrate completely within a 24-hour period.

If necessary, the Recycled Water User shall construct a groundwater monitoring well for the collection and analysis of groundwater samples. District will, at no cost to the Recycled Water User, collect and analyze groundwater samples, as necessary.

Allowable Uses of Recycled Water

Allowable uses of recycled water are specified in CCR Title 22, Section 60303. According to CCR Title 22, disinfected tertiary recycled water can be used for irrigation of the following:

- Food crops, surface-irrigated, above-ground edible portion, and not contacted by recycled water.
- Orchards where the recycled water does not come into contact with the edible portion of the crop.
- Vineyards where the recycled water does not come into contact with the edible portion of the crop.
- Non food-bearing trees. Christmas tree farms are included in this category provided no irrigation with recycled water occurs for a period of 14 days prior to allowing public access.
- Fodder and fiber crops.
- Seed crops not eaten by humans.
- Food crops that must undergo commercial pathogen-destroying processing before being consumed by humans.
- Cemeteries.
- Freeway landscaping.
- Restricted-access golf courses.
- Ornamental nursery stock and sod farms.
- Pasture for milk animals.

Any inedible vegetation where access is controlled so that the irrigated area cannot be used as if it were part of a park, playground, or school yard.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT **CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Sonoma)

On January 16, 2015 before me, Jane Gutierrez, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Grant Davis
Name(s) of Signer(s)

who 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.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

JANE GUTIERREZ
Commission # 2008346
Notary Public - California
Sonoma County
My Comm. Expires Mar 22, 2017

Signature Jane Gutierrez
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

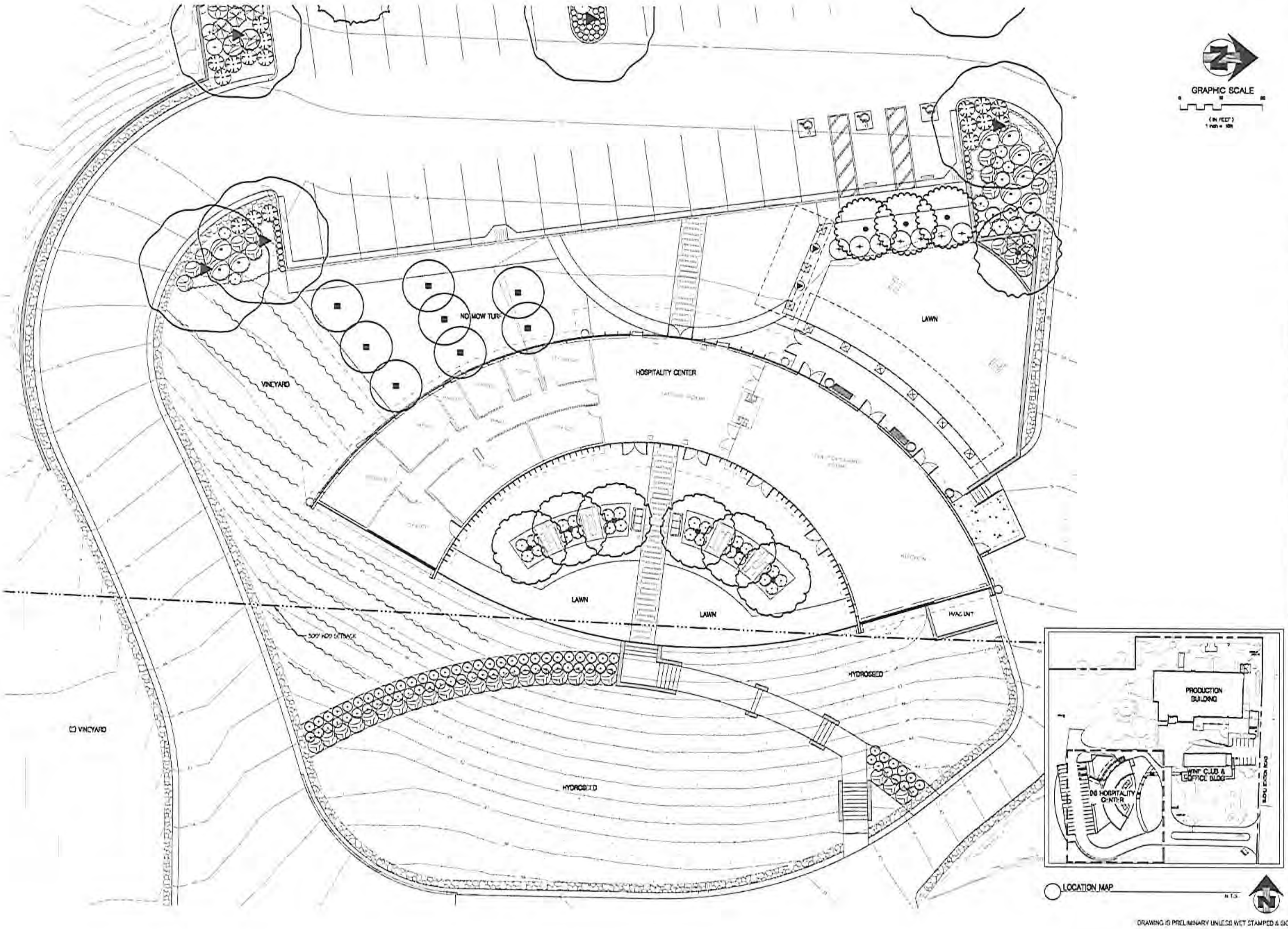
Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: Recycled Water Use Agreement Document Date: _____
Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____



DRAWING IS PRELIMINARY UNLESS WET STAMPED & SIGNED

FIRMA DESIGN GROUP

www.firmadesigngroup.com
1425 N. McDowell Blvd, Suite 130
Petaluma, California 94954
telephone • 707.792.1800
fax • 707.792.1852

Prepared Under the Direction of:

Michael A. Cook
RLA 5123 Exp. 11/30/16

BOUCHAINE VINEYARDS, INC. APN 047-320-031
1075 BUCHLI STATION ROAD, NAPA, CALIFORNIA 94559

USE PERMIT MODIFICATION
HOSPITALITY CENTER-PRELIMINARY PLANTING PLAN

#	Date	By	Revision
3	7/24/2015	KFW	Revised Per County Completeness Letter & Client Direction
2	4/15/2015	KFW	Revised Per County Completeness Letter & Client Direction
1	3/17/2015	NCC	Revised per County comments

Designed KFW, NCC
Checked MAC
Date 02/18/15
Sheet

UP3.1

of 34 Sheets
Job No. 0460-020

Attachment 5

Napa Sanitation District/Los Carneros Water District "Recycled Water Agreement"

AGREEMENT FOR THE PURCHASE AND SALE OF RECYCLED WATER (METERED SERVICE)

This Agreement is made and entered into in Napa, California, as of this ___ day of _____, **20**__, between NAPA SANITATION DISTRICT, a special district of the State of California (Producer), and _____ _____ (User), and provides as follows:

RECITALS:

A. Producer owns and operates a wastewater treatment plant in Napa County, California, which is in the San Francisco Bay Region of the California Regional Water Quality Control Board (the Regional Water Board), and collects and treats wastewater, discharges treated wastewater to the Napa River and recycles wastewater generated within Producer's service area.

B. User owns approximately _____acres of land in Napa County, California, more particularly described in Exhibit "A" attached hereto and incorporated herein by reference, which land has been improved with _____. (Property).

C. Producer employs wastewater reclamation as a means of promoting beneficial reuse of limited water resources.

D. Producer is authorized to sell recycled water, pursuant to Order 96-011 adopted by the Regional Water Board on January 17, 1996, together with all attachments thereto.

E. User is interested in purchasing recycled water from Producer for use in_____, to be used and applied only in such ways as are specifically permitted.

F. Producer desires to sell to User, and User desires to purchase from Producer, recycled water on the terms and conditions hereinafter set forth.

AGREEMENT:

1. Term. This Agreement shall become effective on the date first above written and shall remain in effect through December 31, 2022.

2. Purchase Price; Payment.

A. From the commencement of delivery of recycled water through the end of the contract term, the cost of recycled water shall be as established by the Board of the Napa Sanitation District, and as adjusted from time to time by the Board of the Napa Sanitation District. It is understood that the Producer intends to adjust the cost of recycled water annually for inflation and as necessary to recover the costs of recycled water production, distribution, and system maintenance and repair.

B. User shall be billed monthly or bimonthly, and payment shall be due and payable within thirty (30) days of the date of the invoice. Interest shall accrue on any amount not paid within thirty (30) days of the date of the invoice at the rate of one (1%) percent per month. If User fails to pay any amount due within ninety (90) days of the date of an invoice, Producer may at its option suspend deliveries of recycled water until the account is brought current.

3. Compliance With Water Quality Control Board Order 96-011; Compliance With Requirements of Producer.

A. Producer and User shall comply with all of the provisions and requirements of Order 96-011 adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on January 17, 1996, and all attachments and amendments thereto and reissuance thereof. A copy of Order 96-011 is

attached hereto as Exhibit "B" and incorporated herein by this reference. User acknowledges to Producer that User is aware that the water sold pursuant to this Agreement is recycled water to be used for only specified and limited uses, that User has received a copy of Order 96-011 attached as Exhibit "B" to this Agreement, that User is familiar with and understands all of the provisions and requirements contained in Order 96-011 and that those provisions and requirements are reasonable, and that User covenants and warrants that it shall comply with all the provisions and requirements of Order 96-011 in the purchase and use of the recycled water.

B. User also shall comply with all of the additional provisions and requirements established by Producer, in the purchase and use of the recycled water, which are set forth in the Producer's Water Reuse Program Manual, Exhibit "C", attached hereto and incorporated herein by this reference.

C. User shall use the recycled water delivered hereunder only for those uses authorized herein, in Order 96-011, in the Water Reuse Program Manual, and in District Code, with all infrastructure for recycled water constructed according to the District's Standard Specifications for recycled water improvements.

D. User acknowledges that the Producer is subject to changes in federal law, state law, regulations and requirements, and that these changes may conflict with the terms of this agreement. In the event that the agreement is not in compliance with current law, regulations or requirements, the User agrees to accept a modification to this agreement that incorporates necessary changes to maintain compliance with these requirements.

4. Quality of Recycled Water Sold.

A. User understands that the recycled water that will be delivered to User hereunder has undergone a tertiary treatment process at Producer's Soscol Water

Recycling Facility and is commonly referred to as "Unrestricted Use Recycled Water".

B. User understands that the recycled water to be purchased and used by User is wastewater that has been reclaimed as a result of sewerage treatment operations, and is suitable only for these uses, and in those areas specified in this agreement. The quality of the recycled water sold pursuant to this Agreement shall comply in all respects with the quality criteria established by Order 96-011 for tertiary recycled water. Producer shall test the recycled water as required by the Regional Water Board to ensure that it meets the quality criteria set forth in Order 96-011. The results of this testing program shall be available to User for its review upon request at any time during Producer's normal business hours.

C. In addition to the monitoring and testing requirements of the Regional Water Board, Producer will test the recycled water delivered to User for the parameters listed in Table 1.

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TABLE 1

Parameter	Testing Frequency	Units
Chlorine Residual	Continuous	mg/L
Turbidity (NTU)	Continuous	NTU
D.O. (oxygen)	Continuous	mg/L
pH (hydrogen)	Continuous	SU
Total Coliform	Daily	MPN/100ml
Adjusted SAR	Monthly	N/A
SAR	Monthly	N/A
Aluminum	Monthly	ug/L
Ammonium-N plus	Monthly	mg/L
Arsenic	Monthly	ug/L
Boron	Monthly	mg/L
Calcium	Monthly	mg/L
Chloride	Monthly	mg/L
Chromium	Monthly	ug/L
Copper	Monthly	ug/L
Iron	Monthly	mg/L
Lead	Monthly	ug/L
Magnesium	Monthly	mg/L
Molybdenum	Monthly	ug/L
Nickel	Monthly	ug/L
Nitrate-N	Monthly	mg/L
Nitrite-N	Monthly	mg/L
Phosphorus	Monthly	mg/L
Potassium	Monthly	mg/L
Sodium	Monthly	mg/L
Sulfate	Monthly	mg/L
TDS	Monthly	mg/L
TOC (Carbon)	Monthly	mg/L
Total Alkalinity	Monthly	mg/L
Zinc	Monthly	ug/L
Flouride	Semi-annual	mg/l
Lithium	Semi-annual	ug/L
Manganese	Semi-annual	ug/L

The tests shall be performed according to the "Standards For The Examination of Water And Wastewater" as published jointly by APHA, AWWA, and WEF latest edition.

The results of said tests shall be maintained at Producer's treatment plant and may be reviewed or a copy obtained by User by telephoning Producer. Each February an Annual Report will be prepared by the Producer that includes the test values and shall be made available upon request to User.

5. Delivery and Availability of Recycled Water; Interruption of Service.

A. Producer will deliver up to _____ acre-feet of recycled water annually to User through a pipeline extension from Producer's reclamation site, located at the end of Soscol Road, Napa, California, to the "Delivery Point" on or near User's Property shown on Exhibit "A". The recycled water shall be delivered to the Delivery Point between _____ and _____ pounds per square inch and at a rate of between _____ and ____ gallons per minute. User may have its own irrigation pump stations and reservoirs located on the Property, to be paid for by User. User shall be responsible for the operation, maintenance and repair of any pressure regulator and the pipeline transporting the recycled water and for the recycled water from the Delivery Point to User's places of use. Producer shall be responsible for the operation, maintenance and repair of the pipeline transporting recycled water and for the recycled water to the Delivery Point. User may use water under the following conditions: _____ ____[customers will be restricted to certain hours or days based on the water master policy]_____ _____.

B. User understands that recycled water is a valuable commodity to the community, and that Producer has made reservations in its water availability policies to accommodate User's desire to use recycled water. Therefore, User understands and agrees that if User does not use recycled water, or uses only limited amounts of recycled water, User may be restricted by Producer to the amount used historically (defined as the average of the prior three calendar years) and that additional recycled water in excess of this historical use may not be available to User.

C. Producer will make good faith efforts to provide recycled water during the winter months (November through April) when desired by User, but User acknowledges and understands that the requirements of the Producer to meet its NPDES permit and other requirements imposed by the Regional Water Board, and District operational and maintenance needs, have supremacy in priority and may interfere with recycled water production, and that the risks associated with such failure to provide recycled water are completely understood and assumed by User.

D. User agrees to cooperate with Producer, at Producer's request, in the establishment of reasonable and mutually agreeable delivery schedules for the recycled water to meet specific requirements or goals related to maintenance or operating schedules, energy consumption, or reduced operating costs. User recognizes that the requests of various users may exceed the capacity of Producer's wastewater treatment plant and delivery system and that Producer therefore may need to reduce the rates of delivery at which recycled water is delivered to the various users from time to time. In the event that the Producer reduces User's requested rate of delivery, Producer shall use its best efforts to restore the requested rate of delivery as soon as possible and provide User with that amount of water it would have received had its rate of delivery not been reduced.

E. Producer has the right to restrict water delivery to specific days or hours of the day to maintain water pressure, system capacity, or other operational considerations, including to reduce operating costs.

F. Producer shall use its best efforts to ensure that service to User is provided consistent with the established delivery schedules, and User shall use its best efforts to accept recycled water as provided herein. However, both parties acknowledge that Producer's supply and delivery of recycled water and User's ability to take delivery of said water may occasionally be interrupted or curtailed due to Acts of God, power failures, accident, fire, strikes, riots, war, facility failures,

facility improvements, inspection, maintenance and repairs of plant, distribution system and/or equipment, actions or decisions by a governmental agency, or any condition outside of a party's control. Each party shall not be liable to the other for damages arising out of interruption or curtailment of service for these reasons. Insofar as feasible, the party whose performance hereunder is affected by such condition shall give the other party at least 72 hours advance notice of a temporary discontinuance or reduction in its delivery (in the case of Producer) or in its acceptance (in the case of User) of recycled water, except in the case of emergency, in which case notice need not be given.

G. **Conditions of Recycled Water Shortage.** User agrees and understands that weather patterns and other factors have a direct impact on the availability of the recycled water. Producer will make every effort to provide water at the quantities desired by the User, but Producer makes no guarantees of water availability.

(1) Whenever the Producer believes that weather conditions will produce a condition where the Producer's influent quantity and/or water storage is inadequate to meet projected demand for recycled water, the Producer shall declare that such conditions exist through a Declaration of Recycled Water Shortage.

(2) When a Declaration of Recycled Water Shortage is made by the Producer, User agrees to limit its use of recycled water to the limits established by the Producer in this agreement. User understands that this limit may be lower than the User's historical recycled water usage.

(3) When a Declaration of Recycled Water Shortage is made by the Producer, User shall be subject to the rates for recycled water established by the Producer in the Declaration and acknowledges that rates may be higher than those normally in place as established by ordinance or District Code.

(4) OPTIONAL PROVISION: USER REQUESTS AND PRODUCER AGREES TO RESERVE WATER FOR USER IN EXCESS OF THE PRIOR THREE YEAR AVERAGE FOR USE DURING PERIODS WHEN A DECLARATION OF RECYCLED WATER SHORTAGE IS MADE BY PRODUCER. THE USER REQUESTS THAT _____ GALLONS IN EXCESS OF ITS PRIOR THREE YEAR AVERAGE AMOUNT BE MADE AVAILABLE AT THE THEN CURRENT RECYCLED WATER RATE. IN YEARS WHERE THERE ARE NO DECLARATIONS OF RECYCLED WATER SHORTAGE, USER SHALL BE INVOICED DURING THE MONTH OF NOVEMBER FOR THE EXCESS GALLONS RESERVED AND IDENTIFIED HEREIN, AT THE THEN CURRENT RATE. THE INTENT OF THIS OPTIONAL PROVISION IS TO ALLOW USER TO USE MORE THAN THE AVERAGE OF THE THREE PRIOR YEARS OF RECYCLED WATER DURING CONDITIONS OF RECYCLED WATER SHORTAGE, BUT MUST COMPENSATE THE PRODUCER FOR MAKING THIS RESERVATION AND NOT BEING ABLE TO SELL THIS WATER TO OTHER CUSTOMERS.

USER'S INITIALS _____

PRODUCER'S INITIALS _____

6. Measurement of Delivered Recycled Water.

All recycled water delivered pursuant to this Agreement shall be measured by the Producer at the meter located at the Delivery Point. Producer shall own, inspect, operate, maintain, repair and replace the measuring equipment. All determinations relative to the measuring of recycled water shall be made by the Producer. Upon request by User, the accuracy of a measurement shall be investigated by the Producer and any error appearing therein shall be adjusted. User may inspect such measuring equipment for the purpose of determining the accuracy thereof.

7. Monitoring Reports.

User shall fill out monitoring reports on the form prescribed by the Producer on a weekly basis or as otherwise required by the Producer and submit them to Producer by the fifth (5th) day of each month with respect to the immediately preceding month. Excessive loss of recycled water off-site by spray or runoff shall be fully reported by User and such reports shall state what corrective action(s) have been taken to prevent the violation from occurring again.

8. User's Rights to Recycled Water Nontransferable.

User's rights to recycled water deliveries hereunder are not transferable or assignable, without the express written consent of the District. User shall not sell, give, transfer or distribute any of the recycled water purchased by it pursuant to this Agreement to any other party for any use, and User shall be the sole party using the recycled water.

9. Hold Harmless and Indemnification.

Each party hereto agrees to protect, indemnify, defend and hold harmless the other party and its directors, officers, employees, agents, successors and assigns from and against any and all actual or potential claims, liabilities, damages, losses, fines, penalties, judgments, awards, costs and expenses (including without limitation reasonable attorneys' fees and costs and all foreseeable, unforeseeable and consequential damages) asserted against, resulting to, imposed upon or incurred by said other party by reason of the first party's breach of any provisions of this Agreement or the Order. This indemnification shall survive the termination of this Agreement.

10. Notices.

Any notice, action, or demand by either party to the other in connection with this Agreement shall be deemed to have been fully given or made when such notice,

action, or demand is written and deposited in a sealed envelope postage prepaid, and addressed as designated at the end of this Agreement. Either party may change its address by giving the other party written notice of its new address as herein provided.

11. Entire Agreement.

This Agreement shall constitute the entire agreement between the parties relating to the rights granted and obligations assumed in this Agreement. Any oral representations or modifications concerning this Agreement shall be of no force and effect unless contained in a subsequent written modification signed by both parties.

12. Amendments.

This Agreement may not be amended except by a written instrument that is signed by both parties, except as provided in Section 3 (D) of this agreement.

13. Interpretation.

This Agreement shall be construed, interpreted, and applied according to the laws of the State of California.

14. Successors.

This Agreement shall be binding upon and inure to the benefit of the respective successors and assigns of the parties; but only to the extent that User has complied with paragraph 8 hereof.

15. Attorneys' Fees.

If either party commences an action at law or in equity, arbitration or other proceeding against the other party to enforce or interpret this Agreement, the

prevailing party shall be entitled to recover from the losing party reasonable attorneys' fees and costs of such proceeding, in addition to any other amounts which may be awarded.

16. Severability.

If any clause or provision of the Agreement is or becomes illegal, invalid, or unenforceable because of present or future laws, or any rules or regulations of any governmental body or entity, effective during its term, the intention of the parties is that the remaining parts of this Agreement shall remain in full force and effect if the fundamental purpose of the Agreement is not destroyed.

17. Covenants Running with the Land.

User declares that its covenants and obligations specified in this Agreement constitute covenants running with the land within the meaning of California Civil Code Section 1468, shall benefit the treatment works and lands of Producer, and shall burden the real property described in Exhibit "A" attached hereto and incorporated herein by reference.

In Witness Thereof, this Agreement is entered into as of the date first above written.

Producer:

Napa Sanitation District

By :_____
General Manager

Address:

Napa Sanitation District
1515 Soscol Ferry Road
Napa, CA 94558

ATTEST:

_____
Secretary - Board of Directors

APPROVED AS TO FORM:

_____
John Bakker, Esq.

User:

[Name]

By: _____

Title: _____

Address:

_____
_____
_____
_____

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Attachment 6

Theodore J. Walker, REHS Report
dated October 13, 2014

THEODORE J. WALKER
REGISTERED ENVIRONMENTAL HEALTH SPECIALIST
2280 PLEASANT HILL RD.
SEBASTOPOL, CA. 95472
(707) 486-1405

October 13, 2014

Kim Withrow, Supervising REHS
Napa County Department of Environmental Management
1195 Third Street, Suite 310
Napa, Ca. 94559

Re: Proposed Use Permit Modification for Bouchaine Vineyards, Inc., 1075 Buchli Station Rd., Napa, Ca. AP # 047-320-031
Septic System Feasibility Report for Domestic Wastewater

Dear Kim:

Bouchaine Vineyards Inc. (Bouchaine) will soon be submitting an application for a Use Permit Modification with Napa County through Firma Design Group of Petaluma. I was asked by Michael Cook of Firma Design Group to address the Septic System Feasibility for this application.

The Bouchaine property sits among 100 plus acres in the Carneros Region of Napa County. In this region of Napa County, we find a vast array of various site and soil conditions for septic systems. In this case, we are very fortunate to have encountered the Huachica Soils Series that is a well-drained soil, acceptable for septic systems. This area of Buchli Station Road is an uplifted soil, out of the valley floor of the Carneros Region.

In 2005, I was the designer of the current septic system that was installed in the summer of 2005. At that time, Bouchaine Winery wanted to voluntarily upgrade the previous standard trench septic system. Mark Phillips of P and R Septic Systems installed the upgraded Septic System that met current standards. The design was for an anticipated Peak Wastewater Flow of 600 gallons per day. The system design included:

- Two new septic tanks connected in series, (2,000 gal tank followed by a 1,500 gal tank),
- A new 1,500 gallon sump to dose treated wastewater to the disposal system,
- Two Orenco AX-20 Advantex Textile Filters to pre-treat the wastewater,
- Dual At-Grade Systems with enlarged gravel beds, and
- An alternating hydrotek valve to properly dose the At-Grade Systems

I was conservative in the design, and used a low infiltration rate for the At-Grade System. In addition, I had the winery retrofit all plumbing fixtures with water saving elements to reduce water consumption. The At-Grade System was installed and became operational. Since that time, there have not been any problems with the wastewater system. The owners have performed routine maintenance of the wastewater system by having the septic tanks and sump pumped and cleaned. And one year ago, the Advantex Textile Filters were cleaned and serviced for the second time in nine years. The owners and P and R Septic Systems have never observed any water in the monitoring wells of either At-Grade gravel bed.

PROCESS WASTEWATER PRODUCTION

As part of the Use Permit Modification, no increase in maximum approved production will be requested. Bouchaine may increase the winery process wastewater production with increases in wine production over current levels (less than permitted). Currently and in the future, process wastewater goes to a permitted and inspected wastewater pond system.

SIZING OF THE DOMESTIC WASTEWATER SYSTEM FOR THIS USE PERMIT MODIFICATION

The Feasibility Report is presented in two sections, to ease the review of the Domestic Wastewater System proposal. Please review the technical sizing details in Attachment #1.

Attachment #1 reviews 11 Marketing Plan elements of the Bouchaine Use Permit Modification proposal. Changes include the number of staff, the number, type and size of events, to the final item - the proposal to add a commercial kitchen to the property and provide food at selected functions.

The commercial kitchen will be completely new. However, the kitchen will not be like a conventional restaurant that serves multiple meals per seat per day. Instead, the kitchen will only provide small food items to pair with selected wines on most days. Occasionally, the kitchen will provide food for the Chef's Dinner Series of up to four events per month of up to 80 persons. There will also be Marketing Events, such as private dinners, lunches, and promotions with, and sometimes without, food.

Again, please review Attachment #1 to see the detailed breakdown of current and Use Permit Modification elements and the projected wastewater flow.

CAPACITY OF THE EXISTING SEPTIC SYSTEM

Nine years ago, when the owners voluntarily upgraded the septic system, there was discussion that someday modifications or other improvements may be proposed. So, using the best technology available, I designed the At-Grade System along with pre-treatment (Note: Subsurface drip systems were not allowed at that time).

For the Use Permit Modification Application, Firma Design Group requested an assessment of the capacity of the septic system. In response, I suggested using the Stress Test Model of hydraulically loading a wastewater system and observing monitoring wells to assess performance and capacity. I directed P and R Septic Systems to install a flow meter, and to "Stress and Load" the disposal field at flows of 600, 900, and 1200 gallons at a time, all within one hour. This is a true "Stress Test" (Note: typical wastewater flows envelope the disposal field over a period of 12 to 18 hours each day – loading an entire day's flow in one hour is a heavy Stress on the system).

You will read in Attachment #1 that all three Stress Tests passed, and I concluded that the Capacity of this septic system is in fact, 1,200 gallons per day peak flow (based on the maximum Stress Flow).

DO PORTIONS OF THE SEPTIC SYSTEM NEED MODIFICATIONS WITH USE PERMIT MODIFICATION?

The technical attachment explains in detail that the disposal field (the At-Grade Gravel Beds) do not need to be modified for this Use Permit Modification. The system can handle up to 1,200 gallons per day peak flow. The proposed Use Permit Modification will generate up to 1,028.25 gallons per day peak flow at large events such as the Chef's Dinner Series (for up to 80 persons per event) plus other events such as Wine Tasting up to 130 persons per day. The gravel beds are not impacted by well, site, or building setbacks. So, no changes are needed.

The septic tank arrangement is properly sized and also will not need changes.

With a kitchen, we will need to design, permit and install a minimum of a 2,000 gallon, UPC APPROVED concrete multi-chamber grease trap to properly capture Fats, Oils, and Grease that may be generated from the preparation and cooking of food items. In this case, I will suggest to the owners that the grease trap size be upgraded to 2,000 gallons. Larger grease traps are more efficient. Dual plumbing will be designed for the kitchen plumbing to properly lay out the exterior grease trap, as well as connecting the exit piping from the grease trap and to combine the raw waste plumbing into the septic tank system.

With a peak flow of 1,028.5 gallons per day, the existing sump may be considered undersized by plan checkers in the Environmental Health Department. With the requirement now for 24 hour retention plus peak flow, we will need to install a second sump unit, and intertie with the current sump, to provide adequate sump retention. I recommend the addition of a 2,000 gallon sump.

With the kitchen wastewater being added to the system, the BOD and Suspended Solids will be slightly higher. In consultation with Orenco Systems (they suggest and I concur), that a third AX-20 should be added and connected to the existing textile filters.

One last item: it is likely that the Chef will request an Ice Maker in his/her kitchen. Since the water serving the Ice Machine meets drinking water standards, it is a waste to have the Ice Machine Defrost and Spill Over line drain into the septic system. With permission from the County and a Kitchen Design Professional, I recommend that the kitchen plumbing system provide a "Green Waste Line" only for the Ice Machine. The ice machine spill water can be plumbed separately out to the garden and lawn areas for reuse.

SEPTIC SYSTEM EXPANSION AREA

This is perhaps the most important issue that a property owner faces with a Use Permit Modification. As I mentioned in the beginning, the project sits on a parcel that is slightly over 100 acres.

So, P and R Septic Systems and I performed a very thorough Site Evaluation on this parcel. The proposed expansion area is located just south of the current septic system, on the south side of the southerly access driveway. The date of the Site Evaluation was July 2, 2014. Kim Withrow, Supervising REHS, was the Environmental Health Staff person that visited the site and logged the test holes with me. The complete Site Evaluation Report was submitted August 4, 2014 to Napa County Environmental Management Department.

I am pleased to report that the test holes indicated acceptable soil conditions for expansion area for the septic system. Test holes A through F indicated acceptable soils for a septic system. In the area of test holes A, B, and C, the septic system will be a Subsurface Drip System. In the location of test holes D, E, and F, an At Grade System would be designed and installed. The slopes and topography are excellent for such a septic system. However, when the At-Grade System is installed, the existing vineyard in this area would have to be removed.

A second upper site was also tested. Test hole #1 was unacceptable, but test holes #2, 3, and 4 all passed.

The infiltration rate for both the test areas is 0.80 gallons per square feet per day.

To size a Drip System area, we use the following:

Assuming 2,000 gallons for 200% expansion area and
Infiltration rate of 0.80 gals/sq. ft. /day, we get:

$$\frac{2{,}000 \text{ gals}}{0.80 \text{ gals/sq./day}} = 2{,}500 \text{ square feet of area}$$

Using the drip line spacing of 2 foot center spacing of the drip line laterals,

2,500 sq. ft. = 1,250 lineal feet of subsurface drip line
2 foot center spacing

Subsurface drip lines would be installed along the natural contour of the ground. In this case of the Bouchaine site, it would much be much easier to install the drip system after removing a portion of the vineyard; however, the vineyard could remain. If the At-Grade System were to be installed, then a portion of the vineyard would have to be removed.

The land mass that was found acceptable (in the lower test site) is roughly 200 ft. x 100 ft., or 20,000 square feet. That area can easily handle the expansion area requirement of this project. Therefore, the Upper Test area is not needed for the Use Permit Modification.

Due to the large size of the expansion area, I do not believe that it is necessary that a design is needed at this time. However, the file should note that this area is the Designated Expansion Area for the Domestic Wastewater needs the Bouchaine property, and that no water wells can be drilled within 100 feet of this area. Please see the August 4, 2014 Site Evaluation Report.

OTHER ITEMS

1) A water supply permit is required for the project.
2) The existing septic system and the future expansion area septic systems are both Alternative Sewage Disposal Systems. As such, Napa County regulations now require that Alternative Systems follow the new Monitoring and Reporting Program by a certified provider. Monitoring must be performed every six months, with results provided to Napa County Environmental Health. In addition, the owner must apply for and received an Annual Operating Permit to own and properly operate the Alternative Septic System (Note: P and R Septic Systems is a certified installer and service provider).
3) The feed and return line to the Drip Expansion area would have to cross under the existing access driveway. So a decision to bore under or cut open the driveway would be made in the future.

SUMMARY

My inspections and findings of the existing septic system deem that it has adequate disposal capacity for the proposed Use Permit Modification. The following should be installed as part of the project: a 2,000 gallon multi chamber grease trap with service manholes, an additional Orenco AX-20 textile filter, and a second sump chamber. I also find that there is more than 200 percent expansion area for this project.

I support the project and the proposed uses in the Use Permit Modification Application. Should you have questions please contact me at 707-486-1405.

Yours truly,

Theodore J. Walker, REHS #4323

Attachments

Attachment #1: Bouchaine Winery Domestic Wastewater Estimation Sheet

Attachment #1:

Bouchaine Winery Domestic Wastewater Estimation Sheet:

Note: Wastewater flow numbers are from Napa County Wastewater Regulations that do not include credit for water saving devices. However, I have observed greater than 40% less wastewater use on a daily basis at this facility. These are based on observed metered flows. See review later at end of this section.

1. Staffing proposed with UPM (Use Permit Modification): 21 Employees

Weekday Staffing: 16 Full time persons (FTE) x 15 gals/person/day = 240 gals/day
Weekday Staffing: 5 Part time persons (PTE) x 7.5 gals/person/day = 37.5 gals/day
Total = 277.5 gals/day
Weekend Staffing 2 FTE x 15gals/person/day = 30 gals/d
Weekend Staffing 3 PTE x 7.5 gals/person/day = 22.5 gals/d
Total = 52.5 gals/day on weekend

2. Wine Tastings, walk ins with UPM

Average weekday: 35 - 45 persons/day (M-F) x 3 gals/person = 135 gals/day
Weekend day: 120 – 130 persons/day (Sat-Sun) x 3 gals/person = 390 gals/day (maximum loading)
Note: Actual Metered Flow at Bouchaine indicates less than 1.5 gals/person/day for wine tasting which would result in a maximum loading of 150 gals per day

3. Marketing Events

Current: private dinners/promotions up to 8 per year, @ 10 persons x 10 gals/person = 100 gals/event peak flow
UPM: Future: Private dinners/promotions up to 15/year, @ 50 persons max x 10 gal/p = 500 gals/event peak flow

4. Annual Wine Auction (current and post UPM):

2 times per year up to 50 persons x 10 gals/person with meal = 500 gals/event peak flow

5. April in Carneros: will be discontinued (post UPM) = 0 gals/year

6. Wine Related Groups

Current: With food, tasting speeches, currently 4/year with up to 24 persons @ 5 gals/person = 120 gallons/event
With UPM: up to 3/month with up to 50 persons @ 5 gals/person = 250 gals/event peak flow

7. Additional meetings with (lunch or dinner (not both).

Current: up to 12 events/year @ 24 persons/event = 240gals/event
With UPM: up to 50 events per year @ 50 persons at 10 gals/person = 500 gals/event peak flow

8. Holidays in Carneros: will be discontinued (post UPM) = 0 gals/year

9. Special wine and food events, with UPM up to 60 persons max @ 10 gals/person = 600 gals/event peak flow

10. Wine with food pairings, none currently
Post UPM: Wine with food pairings (small bites of food will be paired with wine being served), up to 30 persons per day x 2 gals = 60 gals/day

These wine with food pairings will offset some of the "Walk-in wine tastings" (section 2 above).

11. Chef's Dinner Series
Currently, there are no events specifically called out in the Use Permit as "Chef's Dinner Series", they are included in items 3 and 7 above.
Post UPM 4 events/month with up to 80 persons X 10 gals/person = 800 gals/event peak flow

Observed Metered Wastewater Flows:

After meeting with Firma Design Group, I suggested that a flow meter (water meter), be installed on the pressurized PVC pipe between the sump and the hydrotek valve, which alternates between the dual At-Grade Gravel Beds. In addition, I directed the Bouchaine managers to log and note the wastewater flow with employee counts and numbers of guests on a regular basis.

The wastewater flow that is pumped into the wastewater system is much lower than estimates. Note the following:

Weekend Use: (since the meter was installed in late June, 2014).
July 4th weekend, (Thursday July 3, 2014 through the end of Sunday July 6, 2014)

Volume of wastewater into the system was 365 gallons
Wine tasters visiting that weekend were 135 persons
Total Staff working the 4 days was 24

From Table 4. Napa County Wastewater Flow Chart:
135 guests at 3 gals/wine taster should have been 395 gallons, and
24 staff at 15 gallons/staff should have been 360 gallons for a net total of
755 gallons of wastewater flow

*The 365 gallons actual flow / 755 gallons estimated Table 4 flow = **48% of estimated flow**

The highest weekend water use that we have measured to date was the weekend of August 23, 2014 (Dinner on the 23rd), through the end of Sunday August 24th.

Volume of wastewater into the system was: 664 gallons (Friday through Sunday)
Visitors that weekend 114 guests at 3 gals/wine taster should have been 342 gallons, and
Persons eating dinner was 55 persons on Saturday, August 23rd should have been 550 gallons,
Total Staff working the two days was 29 at 15 gals/staff should have been 435 gallons for a net total of 1327 gallons.

*The 664 gallons actual flow / 1327gallons of estimated Table 4 flow = **50% of estimated flow**

Single day spot checks: We have performed single day spot checks on wastewater flow. Since the water meter was installed, there are few days that the wastewater flow exceeded 300 gallons (like the dinner event). Some days, the pump only cycled once (the pump is pre-set for a 100 gallon dose). We continue to monitor the actual wastewater flow, but I am observing that the actual wastewater flow is about 40% to 50% lower than the Table 4 design flow chart.

Therefore, I suggest that we utilize a conservation measure allowed by the Uniform Plumbing Code. The code allows for a design flow reduction of 25% or more, when it can be demonstrated that the owner maintains, utilizes, and incorporates any and all feasible water saving devices when possible. This is particularly important during drought years.

I propose a 30% reduction in the design wastewater flows. Note: water saving devices were installed nine years ago, and the owners are using water wisely.

Estimated Peak Wastewater Flows: Use Permit Modification:
(See table below page)

Following items #1 – 11 from the chart shown on page #1 of Attachment #1, we estimate the design Peak Flow as follows:

As per Table #4, Napa County ASTS Regulations	Peak Daily Flow	30% Reduction
1) Staffing (employees FTE and PTE)	277.5 gals	194.25 gals
2) Walk in Wine tasters (weekend)	390	273
Walk in weekday	135	94.5
3) Marketing Events (Private dinners, promotions etc.)	500	350
4) Annual wine auction w/meals	500	350
5) April in Carneros	0	
6) Related Wine Groups Up to 50 persons	250	175
7) Plus meeting w/lunch or dinner (not both)	350	245
8) April and Holidays in Carneros	0	
9) Special wine and food events	500	350
10) Wine with food parings	60	42
11) Chef's Dinner Series (up to 80 persons @ 2 times/month)	800	560

The most consistent wastewater flow is for staffing. Using the 30% estimated water savings credit; the daily flow should be at 194.25 gallons per day, or less.

Conversely, with the UPM, largest wastewater flow event is the Chef's Dinner Series of up to 80 persons. Again, with the water savings credit, the peak flow is 560 gallons. So, if the Chef's Dinner is going to occur, and the winery is fully staffed at 21 persons (for the entire day), the combined flow would be 560 + 194.25 = 754.25 gallons. Then if you add a high weekend day of wine tasters of up to 100 persons, you will add 273 gallons of flow to get 1028.25 gallons peak flow.

What is the Peak Wastewater Flow of the Existing Domestic Wastewater System?

Under my direction, P and R Septic System ran the existing At-Grade Domestic Wastewater System through a high volume Stress Test. The Stress Test covered three days. Water was manually added to the sump, and water was dosed to the At-Grade Beds at a flow of 100 gallons per dose. The pumped

dosed the water through the newly installed flow meter, through the alternating Hydrotek Valve, into each At-Grade Bed equally.

The first test was set for a 600 gallon Stress Test. Each gravel bed was dosed at 100 gallons per dose. Each gravel bed received three doses in sequence. The Stress Test lasted one hour. No water was observed in the downhill monitoring wells.

The Second Stress Test was setup for a total flow of 900 gallons. The same procedure was followed. The test lasted one hour. Again, no water appeared in the downhill monitoring wells.

A Third Stress Test was performed. This time we increased the flow up to 1200 gallons. The same procedure was followed. Just at the end of the one hour stress test, a small amount of water was observed in the monitoring wells of the Uphill At-Grade Gravel Bed. Within 10 minutes, the water was no longer in the monitoring well.

During these three Stress Tests, no signs of breakout occurred downgradient of the systems. The performance of the system during stressing of the hydraulic loading of the gravel beds in 60 minutes or less, demonstrates that (in my opinion), the existing system easily can handle a peak wastewater flow of 1200 gallons per day.

Attachment 7

Evidence of Water Supply for Existing and Proposed Wells

BERINGER BROS., INC.

WAA Attachment 7

well #1 behind winery by Buckley Station Rd.

TRIPLICATE
Retain this copy

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In

No 59031

State Well No. _____

Other Well No. _____

(1) OWNER:
Name Beringer Bros., Inc.
Address 1075 Buckley Station Rd.
St. Helena, Calif.

(2) LOCATION OF WELL:
County Napa Owner's number, if any 1075
Township, Range, and Section
Distance from cities, roads, railroads, etc.

(3) TYPE OF WORK *(check)*:
New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE *(check)*:
Domestic [ ] Industrial [ ] Municipal [ ]
Irrigation [X] Test Well [ ] Other [ ]

(5) EQUIPMENT:
Rotary [X]
Cable [ ]
Other [ ]

(6) CASING INSTALLED:
STEEL: OTHER:
SINGLE [X] DOUBLE [ ]

From ft.	To ft.	Diam.	Gage or Wall
	162'	8"	12 ga. 12½

If gravel packed

Diameter of Bore	From ft.	To ft.
	22	162'

Size of shoe or well ring: None
Size of gravel: Pea Gravel
Describe joint Butt Weld

(7) PERFORATIONS OR SCREEN:
Type of perforation or name of screen Machine Perf.

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
22	162'	20	3	1/8 X 3"

(8) CONSTRUCTION:
Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 22' ft.
Were any strata sealed against pollution? Yes [ ] No [X] If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing Neat Cement

(9) WATER LEVELS:
Depth at which water was first found, if known 6' ft.
Standing level before perforating, if known 8' ft.
Standing level after perforating and developing 8' ft.

(10) WELL TESTS: Tested by bailing.
Was pump test made? Yes [ ] No [ ] If yes, by whom? Drillers
Yield: 15 gal./min. with 118' ft. drawdown after 3 hrs.
Temperature of water Was a chemical analysis made? Yes [ ] No [X]
Was electric log made of well? Yes [ ] No [X] If yes, attach copy

(11) WELL LOG:
Total depth 165' ft. Depth of completed well 162' ft.
Formation: *Describe by color, character, size of material, and structure*

0	8	Soil & Gravel
8	17	Sand & Gravel
17	38	Clay & Gravel
38	47	Large Gravel w/Clay
47	61	Clay & Gravel
61	138	Brown Sticky Clay
138	165	Brown Sand & Clay

1 ϕ
3hp 11 DC 28 gpm
pedes
Pump setting 126 (1981)
15 gpm or less

Work started Oct. 20, 19 71 Completed Oct. 21, 19 71

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Doshier-Gregson, Inc.
(Person, firm, or corporation) (Typed or printed)
Address 5365 Napa-Vallejo Highway
Vallejo, Calif. 94590
[SIGNED] _____
(Well Driller)
License No. 258826 Dated Aug. 4, 19 69

SKETCH LOCATION OF WELL ON REVERSE SIDE

Bouchane Vineyards

Well # [illegible] Portner # from admin [illegible]

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Copy W3

Do not fill in

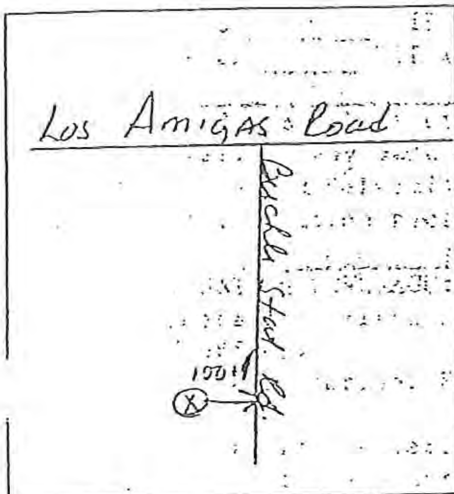
No. 342454

State Well No. ______
Other Well No. ______

Notice of Intent No. ______
Local Permit No. or Date ______

(1) OWNER: Name Bouchane Vineyards
Address 1075 Buchli Station Road
City Napa ZIP 94558

(2) LOCATION OF WELL (See instructions):
County Napa Owner's Well Number 047-330-10
Well address if different from above ______
Township ______ Range ______ Section ______
Distance from cities, roads, railroads, fences, etc. ______



WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe destruction materials and procedures in Item 12)

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

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

(6) GRAVEL PACK:
Yes ☒ No ☐ Size Pea
Diameter of bore 14
Packed from 500 to 42 ft.

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

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

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	80	8	160	80	140	.032
140	220	8	160	220	300	.032
300	360	8	160	360	500	.032

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 42 ft.
Were strata sealed against pollution? Yes ☐ No ☐ Interval ______ ft.
Method of sealing Concrete & bentonite pellers

(10) WATER LEVELS:
Depth of first water, if known ______ ft.
Standing level after well completion 30 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? pump crew
Type of test Pump ☒ Bailer ☐ Air lift ☐
Depth to water at start of test 30 ft. At end of test 500 ft.
Discharge 25 gal/min after 8 hours Water temperature ______
Chemical analysis made? Yes ☒ No ☐ If yes, by whom? Caltest Lab
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 500 ft. Completed depth 500 ft.

from ft. to ft.	Formation (Describe by color, character, size or material)
0– 50	Boulders & gravel
50– 90	Brown sticky clay
90– 100	Gravel and clay
100– 120	Brown clay
120– 130	sand
130– 190	Brown clay
190– 250	Gray clay
250– 260	Sand
260– 330	Gray sticky clay
350– 380	Blue clay
380– 410	Brown and blue shale
410– 425	Gravel
425– 500	Blue sticky clay and gravel

3rd to be installed

200V 3Ø
5 hp 25 gallon per min
full load - 16A
max load - 17.7A
6-17-00
Well depth 450'
Pump set: 430'

CONFIDENTIAL NOT FOR PUBLIC USE WATER CODE SEC. 13752

Work started 4/5/90 19__ Completed 4/20/90 19__

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Signed Raymond Webster (Well Driller)
NAME Coshier-Gregson, Inc. (Person, firm, or corporation) (Typed or printed)
Address 5365 Napa Vallejo Hwy
City Vallejo ZIP 94589
License No. 253026 Date of this report 4/23/90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DWR 188 (REV. 12/86)

...e Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

...Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0214178

Page ____ of ____

Owner's Well Number ____

...te Work Began 01/15/2014 Date Work Ended 1/29/2014

...al Permit Agency Napa County Environmental Services

Permit Number E13-00823 Permit Date ____

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ⊙ Vertical ○ Horizontal ○ Angle Specify ____

Drilling Method Direct Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	20	Gravel rock brown clay.
20	40	Gravel rock brown clay.
40	100	Gravel, multi color rock and sandy brown clay.
100	140	Gravel, multi color rock and some sandy brown clay.
140	220	Sandy brown and grey clay with some small gravel
220	280	Sandy grey clay.
280	300	Sandy grey clay with some multicolor rock.

Total Depth of Boring 300 Feet

Total Depth of Completed Well 180 Feet

Well Owner

Name Bouchaine Vineyards Inc.

Mailing Address 1075 Buchli Station Road

City Napa State CA Zip 94559

Well Location

Address 1075 Buchli Station Road

City Napa County Napa

Latitude ___ Deg. ___ Min ___ Sec. N Longitude ___ Deg. ___ Min. ___ Sec. W

Datum ____ Dec. Lat. ____ Dec. Long. ____

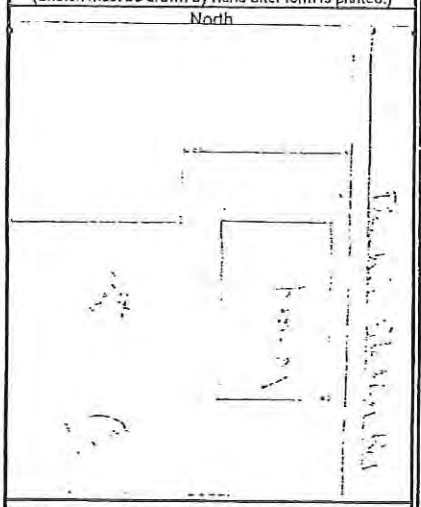
APN Book 047- Page 320- Parcel 031-000

Township ____ Range ____ Section ____

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

⊙ New Well

○ Modification/Repair

○ Deepen

○ Other ____

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

⊙ Water Supply

☑ Domestic ☐ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other ____

Water Level and Yield of Completed Well

Depth to first water ____ (Feet below surface)

Depth to Static Water Level 100 (Feet) Date Measured 01/29/2014

Estimated Yield * 10 (GPM) Test Type Air Lift

Test Length 14.0 (Hours) Total Drawdown ____ (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	60	12.75	Blank	F480 PVC	0.316	6.625		
60	180	9.875	Screen	F480 PVC	0.316	6.625	Milled Slots	0.032

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	59	Cement	
59	180	Filter Pack	#6 Sand 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 McLean & Williams, Inc.
Person, Firm or Corporation

878 El Centro Ave. Napa CA 94558
Address City State Zip

Signed ____
C-57 Licensed Water Well Contractor

02-16-2014 Date Signed

396352 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL DATA SHEET for Well #1 (Page 1 of 3)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
** Indicates items required for Source Water Assessment*		
*** Indicates additional items required for assessments and Ground Water Rule*		
	(separate multiple entries in field with semi-colon)	Actual, Estimated or Default?
DATA SHEET GENERAL INFORMATION		
System Name	Bouchaine Winery Water System	*Proposed by System*
System Number	28-00055	*Provided by NC PBES*
Source of Information *(well log, DHS/County files, system, etc)*	well log/site report	Actual
Organization Collecting Information *(DHS, County, System, other)*	System	Actual
Date Information Collected/Updated	2/13/2015	Actual
WELL IDENTIFICATION		
* Well Number or Name	Well #1	*System numbering*
* DHS Source Identification Number (FRDS ID No.)		
DWR Well Log on File? ("YES" or "NO")	Unknown	
State Well Number (from DWR)	Unknown	
Well Status (Active, Standby, Inactive)	Active	*Actual*
WELL LOCATION		
Latitude		*from DHS database*
Longitude		*from DHS database*
Ground Surface Elevation (ft above Mean Sea Level)	approx. 24.0 feet	Actual
Street Address	1075 Buchli Station Road	Actual
Nearest Cross Street	Las Amigas Road	Actual
City	Napa	Actual
County	Napa	Actual
* Neighborhood/Surrounding Area *(see Note 1)*	A, Ru, Re	Estimated
Site plan on file? ("YES" or "NO")	Yes	Actual
DWR Ground Water Basin	Napa-Sonoma Valley Basin	*to come from DWR*
DWR Ground Water Sub-basin	Napa-Sonoma Lowlands Subbasin	*to come from DWR*
SANITARY CONDITIONS		
** Distance to closest Sewer Line, Sewage Disposal, Septic Tank (ft)	40	Estimated
Distance to Active Wells (ft)	395	Estimated
Distance to Abandoned Wells (ft)	8	Estimated
Distance to Surface Water (ft)	550	on site process water pond
** Size of controlled area around well (square feet)	36	Estimated
* Type of access control to well site *(fencing, building, etc)*	in landscaped/garden area	Actual
* Surface Seal? (Concrete slab)("YES", "NO" or "UNKNOWN")	No	Actual
* Dimensions of concrete slab: Length(ft)/ Width(ft)/ Thick(in)	N.A.	Actual
* Within 100 year flood plain? ("YES", "NO" or "UNKNOWN")	No	Estimated
* Drainage away from well? ("YES" or "NO")	Yes	Actual
ENCLOSURE/HOUSING		
Enclosure Type *(building, vault, none, etc.)*	None	Actual
Floor material	N.A.	Actual
Located in Pit? ("YES" or "NO")	No	Actual
Pit depth (feet) (if applicable)	No	Actual
WELL CONSTRUCTION		
Date drilled	10/21/1971	Actual
Drilling Method	Rotary	Actual
Depth of Bore Hole (feet below ground surface)	165	Actual
Casing Beginning Depth/Ending Depth(ft below surface); 2nd Casing Beginning Depth/Ending Depth; 3rd Casing, etc.	0 to 162	Actual
Casing Diameter (inches); 2nd Casing Diameter; 3rd Casing, etc.	8 inches	Actual
Casing Material; 2nd Casing Material; 3rd Casing, etc.	Unknown	
WELL CONSTRUCTION (continued)		
Conductor casing used? ("YES", "NO" or "UNKNOWN") *(See Note 2)*	Unknown	
Conductor casing removed? ("YES", "NO" or "UNKNOWN")	Unknown	
* Depth to highest perforations/screens (ft below surface) (or "UNKNOWN")	22	Actual
Screened Interval Beginning Depth/Ending Depth (ft below surface); 2nd Screened Interval Beg. Depth/Ending Depth; 3rd Screened	22-162	Actual
* Total length of screened interval (ft) *(default = 10% pump capacity in gpm)* (or "UNKNOWN")	140	Actual
* Annular Seal?("YES", "NO" or "UNKNOWN") *(See Note 3)*	Yes	Actual
* Depth of Annular Seal (ft)	22	Actual
Material of Annular Seal *(cement grout, bentonite, etc.)*	neat cement	Actual
Gravel pack, Depth to top (ft below ground surface)	22	Actual
Total length of gravel pack (ft)	140	Actual

WELL DATA SHEET for Well #1 (Page 2 of 3)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
** Indicates items required for Source Water Assessment*		
*** Indicates additional items required for assessments and Ground Water Rule*		
AQUIFER		
* Aquifer Materials *(list all that apply: sand, silt, clay, gravel, rock, fractured rock)*	clay and gravel	Actual
* Effective porosity (decimal percent) *(default = 0.2)* (or "UNKNOWN")	unknown	
* Confining layer (Impervious Strata) above aquifer? ("YES", "NO" or "UNKNOWN")	No	Estimated
Thickness of confining layer, if known (ft)		
Depth to confining layer, if known (ft below ground)		
* Static water level (ft below ground surface)	8	Actual
Static water level measurement: Date/Method	10/21/71; unknown	Actual
Pumping water level (ft below ground surface)	126	Actual
Pumping water level measurement: Date/Method	10/21/71; unknown	Actual
WELL PRODUCTION		
Well Yield (gpm)	15 initial test; actual 5	Actual
Well Yield Based On (i.e., pump test, etc.)	pump test	Actual
Date measured	6/18-19/2014	Actual
Is the well metered? ("YES" or "NO")	Yes	Actual
Production (gallons per year)		
Frequency of Use (hours/year)		
Typical pumping duration (hours/day)		
PUMP		
Make	Grundfos	Actual
Type	Submersible	Actual
Size (hp)	1	Actual
* Capacity (gpm)	5	Actual
Depth to suction intake (ft below ground surface)	126	Actual
Lubrication Type		
Type of Power: *(i.e., electric, diesel, etc.)*	electric	Actual
Auxiliary power available? ("YES" or "NO")		
Operation controlled by: *(i.e., level in tank, pressure, etc.)*	level in tank	Actual
Pump to Waste capability? ("YES" or "NO")		
Discharges to: *(i.e., distribution system, storage, etc.)*	storage	Actual
NOTES		
1. Neighborhood/Surrounding Area (list all that apply): A= Agricultural, Ru = Rural, Re = Residential, Co = Commercial, I = Industrial, Mu = Municipal, P = Pristine, O = Other		
2. Conductor Casing - Oversized casing used to stabilize bore hole during well construction. Should be removed during installation of annular seal.		
3. Annular Seal - Seal of grout in the space between the well casing and the wall of the drilled hole. Sometimes called "sanitary seal".		
Please Note:		
The information on this Well Data Sheet is considered confidential. To allow the information to be included		
in the permit report, or made available subject to a public information act request, the waiver clause below has		
to to be signed and dated by the owner (public water system). In lieu of this signature, the WDS has to be		
retained in a confidential file, or the information shown in the shaded rows has to be "blacked out."		
I/We, (Name)_____, certify that I/Weam/are the present owners of the well described on this well data sheet. I/We have reviewed the information presented on this well data sheet and I/We take no exception to having the information inlcuded in the Department of Health Services' Engineering Report. I/We understand that by including the well data sheet in the Engineering Report, it will be part of a public document that can be reviewed and copied subject to a Public Information Act request.		
_____ _____		
(Signature) (Date)		

WELL DATA SHEET for Well #1 (Page 3 of 3)

Well Data Sheet Supplement		
REMARKS AND DEFECTS		
(Use or note these items as appropriate)		
(** indicates items pertinent to Ground Water Rule)		
Distance (ft) to other sanitary concerns:		
** Type of Sanitary Concern:		
** Type of Sanitary Concern:		
** Type of Sanitary Concern:		
** Type of Sanitary Concern:		
** Type of Sanitary Concern:		
Raw Water Quality concerns? (Yes or No)	No	Actual
** Microbiological (coliform)	No	Actual
Chemicals	No	Actual
Other (list)	No	Actual
** Continuous Chlorination provided? (Yes or No)	No	Actual
Condition of enclosure or housing	Good	Actual
Pit Drained? (if applicable)	N.A.	Actual
Pitless Adaptor? Make and Model		
Height of pump base (inches)		
Casing Vent? (yes or no)		
Air/Vacuum Release? (yes or no)		
Sampling Taps? (yes or no)		
Location of sampling taps		
Wellhead Riser? (yes or no); height above well	Yes; 2 feet	Actual
Other		

WELL DATA SHEET for Well #3 (Page 1 of 3)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
** Indicates items required for Source Water Assessment*		
*** Indicates additional items required for assessments and Ground Water Rule*		
	(separate multiple entries in field with semi-colon)	Actual, Estimated or Default?
DATA SHEET GENERAL INFORMATION		
System Name	Bouchaine Winery Water System	*Proposed by System*
System Number	28-00055	*Provided by NC PBES*
Source of Information *(well log, DHS/County files, system, etc)*	well log/site report	Actual
Organization Collecting Information *(DHS, County, System, other)*	System	Actual
Date Information Collected/Updated	2/13/2015	Actual
WELL IDENTIFICATION		
* Well Number or Name	Well #3	*System numbering*
* DHS Source Identification Number (FRDS ID No.)		
DWR Well Log on File? ("YES" or "NO")	Unknown	
State Well Number (from DWR)	Unknown	
Well Status (Active, Standby, Inactive)	Active	*Actual*
WELL LOCATION		
Latitude		*from DHS database*
Longitude		*from DHS database*
Ground Surface Elevation (ft above Mean Sea Level)	approx. 36.1 feet	Actual
Street Address	1075 Buchli Station Road	Actual
Nearest Cross Street	Las Amigas Road	Actual
City	Napa	Actual
County	Napa	Actual
* Neighborhood/Surrounding Area *(see Note 1)*	A, Ru, Re	Estimated
Site plan on file? ("YES" or "NO")	Yes	Actual
DWR Ground Water Basin	Napa-Sonoma Valley Basin	*to come from DWR*
DWR Ground Water Sub-basin	Napa-Sonoma Lowlands Subbasin	*to come from DWR*
SANITARY CONDITIONS		
** Distance to closest Sewer Line, Sewage Disposal, Septic Tank (ft)	60	Estimated
Distance to Active Wells (ft)	330	Estimated
Distance to Abandoned Wells (ft)	20	Estimated
Distance to Surface Water (ft)	210	on site process water pond
** Size of controlled area around well (square feet)	36	Estimated
* Type of access control to well site *(fencing, building, etc)*	in landscaped/garden area	Actual
* Surface Seal? (Concrete slab)("YES", "NO" or "UNKNOWN")	No	Actual
* Dimensions of concrete slab: Length(ft)/ Width(ft)/ Thick(in)	N.A.	
* Within 100 year flood plain? ("YES", "NO" or "UNKNOWN")	No	Estimated
* Drainage away from well? ("YES" or "NO")	Yes	Actual
ENCLOSURE/HOUSING		
Enclosure Type *(building, vault, none, etc.)*	None	Actual
Floor material	N.A.	Actual
Located in Pit? ("YES" or "NO")	No	Actual
Pit depth (feet) (if applicable)	N.A.	Actual
WELL CONSTRUCTION		
Date drilled	4/20/1990	Actual
Drilling Method	Rotary	Actual
Depth of Bore Hole (feet below ground surface)	500	Actual
Casing Beginning Depth/Ending Depth(ft below surface); 2nd Casing Beginning Depth/Ending Depth; 3rd Casing, etc.	0 to 360	Actual
Casing Diameter (inches); 2nd Casing Diameter; 3rd Casing, etc.	8 inches	Actual
Casing Material; 2nd Casing Material; 3rd Casing, etc.	"Plastic" (PVC?)	Actual
WELL CONSTRUCTION (continued)		
Conductor casing used? ("YES", "NO" or "UNKNOWN") *(See Note 2)*	Unknown	
Conductor casing removed? ("YES", "NO" or "UNKNOWN")	Unknown	
* Depth to highest perforations/screens (ft below surface) (or "UNKNOWN")	80	Actual
Screened Interval Beginning Depth/Ending Depth (ft below surface); 2nd Screened Interval Beg. Depth/Ending Depth; 3rd Screened	80-500	Actual
* Total length of screened interval (ft) *(default = 10% pump capacity in gpm)* (or "UNKNOWN")	420	Actual
* Annular Seal?("YES", "NO" or "UNKNOWN") *(See Note 3)*	Yes	Actual
* Depth of Annular Seal (ft)	42	Actual
Material of Annular Seal *(cement grout, bentonite, etc.)*	concrete & bentonite pellets	Actual
Gravel pack, Depth to top (ft below ground surface)	42	Actual
Total length of gravel pack (ft)	468	Actual

WELL DATA SHEET for Well #3 (Page 2 of 3)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
** Indicates items required for Source Water Assessment*		
*** Indicates additional items required for assessments and Ground Water Rule*		
AQUIFER		
* Aquifer Materials *(list all that apply: sand, silt, clay, gravel, rock, fractured rock)*	gravel, brown clay, sand, shale, gravel	Actual
* Effective porosity (decimal percent) *(default = 0.2)* (or "UNKNOWN")	unknown	
* Confining layer (Impervious Strata) above aquifer? ("YES", "NO" or "UNKNOWN")	Yes	Estimated
Thickness of confining layer, if known (ft)	40	Estimated
Depth to confining layer, if known (ft below ground)	50-90	Estimated
* Static water level (ft below ground surface)	30	Actual
Static water level measurement: Date/Method	4/20/90; unknown	Actual
Pumping water level (ft below ground surface)	430	Actual
Pumping water level measurement: Date/Method	4/20/90; unknown	Actual
WELL PRODUCTION		
Well Yield (gpm)	25 initial test; actual 6	Actual
Well Yield Based On (i.e., pump test, etc.)	pump test	Actual
Date measured	6/16-17/2014	Actual
Is the well metered? ("YES" or "NO")	Yes	Actual
Production (gallons per year)		
Frequency of Use (hours/year)		
Typical pumping duration (hours/day)		
PUMP		
Make	Grundfos	Actual
Type	Submersible	Actual
Size (hp)	5	Actual
* Capacity (gpm)		
Depth to suction intake (ft below ground surface)	420	Actual
Lubrication Type		
Type of Power: *(i.e., electric, diesel, etc.)*	electric	Actual
Auxiliary power available? ("YES" or "NO")		
Operation controlled by: *(i.e., level in tank, pressure, etc.)*	level in tank	Actual
Pump to Waste capability? ("YES" or "NO")		
Discharges to: *(i.e., distribution system, storage, etc.)*	storage	Actual
NOTES		
1. Neighborhood/Surrounding Area (list all that apply): A= Agricultural, Ru = Rural, Re = Residential, Co = Commercial, I = Industrial, Mu = Municipal, P = Pristine, O = Other		
2. Conductor Casing - Oversized casing used to stabilize bore hole during well construction. Should be removed during installation of annular seal.		
3. Annular Seal - Seal of grout in the space between the well casing and the wall of the drilled hole. Sometimes called "sanitary seal".		
Please Note:		
The information on this Well Data Sheet is considered confidential. To allow the information to be included in the permit report, or made available subject to a public information act request, the waiver clause below has to to be signed and dated by the owner (public water system). In lieu of this signature, the WDS has to be retained in a confidential file, or the information shown in the shaded rows has to be "blacked out."		
I/We, (Name)_____, certify that I/Weam/are the present owners of the well described on this well data sheet. I/We have reviewed the information presented on this well data sheet and I/We take no exception to having the information inlcuded in the Department of Health Services' Engineering Report. I/We understand that by including the well data sheet in the Engineering Report, it will be part of a public document that can be reviewed and copied subject to a Public Information Act request.		
_____ _____		
(Signature) (Date)		

WELL DATA SHEET for Well #3 (Page 3 of 3)

Well Data Sheet Supplement		
REMARKS AND DEFECTS		
(Use or note these items as appropriate)		
(** indicates items pertinent to Ground Water Rule)		
Distance (ft) to other sanitary concerns:		
** Type of Sanitary Concern: _____		
** Type of Sanitary Concern: _____		
** Type of Sanitary Concern: _____		
** Type of Sanitary Concern: _____		
** Type of Sanitary Concern: _____		
Raw Water Quality concerns? (Yes or No)		
** Microbiological (coliform)	No	Actual
Chemicals	No	Actual
Other (list)	Iron	Actual
** Continuous Chlorination provided? (Yes or No)	No	Actual
Condition of enclosure or housing	Good	Actual
Pit Drained? (if applicable)	N.A.	
Pitless Adaptor? Make and Model		
Height of pump base (inches)		
Casing Vent? (yes or no)		
Air/Vacuum Release? (yes or no)		
Sampling Taps? (yes or no)	Yes	Actual
Location of sampling taps	Top of well	Actual
Wellhead Riser? (yes or no); height above well	Yes; 2 feet	Actual
Other		

WELL DATA SHEET for Well #6 (Page 1 of 3)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
* *Indicates items required for Source Water Assessment*		
** *Indicates additional items required for assessments and Ground Water Rule*		
	(separate multiple entries in field with semi-colon)	Actual, Estimated or Default?
DATA SHEET GENERAL INFORMATION		
System Name	Bouchaine Winery Water System	*Proposed by System*
System Number		*Provided by NC PBES*
Source of Information *(well log, DHS/County files, system, etc)*	well log/site report	Actual
Organization Collecting Information *(DHS, County, System, other)*	System	Actual
Date Information Collected/Updated	2/13/2015	Actual
WELL IDENTIFICATION		
* Well Number or Name	Well #6	*System numbering*
* DHS Source Identification Number (FRDS ID No.)		
DWR Well Log on File? ("YES" or "NO")	Unknown	
State Well Number (from DWR)	Unknown	
Well Status (Active, Standby, Inactive)	Standby	*Actual*
WELL LOCATION		
Latitude		*from DHS database*
Longitude		*from DHS database*
Ground Surface Elevation (ft above Mean Sea Level)	approx. 57.9 feet	Actual
Street Address	1075 Buchli Station Road	Actual
Nearest Cross Street	Las Amigas Road	Actual
City	Napa	Actual
County	Napa	Actual
* Neighborhood/Surrounding Area *(see Note 1)*	A, Ru, Re	Estimated
Site plan on file? ("YES" or "NO")	Yes	Actual
DWR Ground Water Basin	Napa-Sonoma Valley Basin	*to come from DWR*
DWR Ground Water Sub-basin	Napa-Sonoma Lowlands Subbasin	*to come from DWR*
SANITARY CONDITIONS		
** Distance to closest Sewer Line, Sewage Disposal, Septic Tank (ft)	230	Estimated
Distance to Active Wells (ft)	330	Estimated
Distance to Abandoned Wells (ft)	345	Estimated
Distance to Surface Water (ft)	120	on site process water pond
** Size of controlled area around well (square feet)		
* Type of access control to well site *(fencing, building, etc)*	adjacent to active vineyard	Actual
* Surface Seal? (Concrete slab)("YES", "NO" or "UNKNOWN")	No	Actual
* Dimensions of concrete slab: Length(ft)/ Width(ft)/ Thick(in)	N.A.	
* Within 100 year flood plain? ("YES", "NO" or "UNKNOWN")	No	Estimated
* Drainage away from well? ("YES" or "NO")	Yes	YES
ENCLOSURE/HOUSING		
Enclosure Type *(building, vault, none, etc.)*	None	Actual
Floor material	N.A.	Actual
Located in Pit? ("YES" or "NO")	No	Actual
Pit depth (feet) (if applicable)	N.A.	Actual
WELL CONSTRUCTION		
Date drilled	1/29/2014	Actual
Drilling Method	Direct Rotary	Actual
Depth of Bore Hole (feet below ground surface)	300	Actual
Casing Beginning Depth/Ending Depth(ft below surface); 2nd Casing Beginning Depth/Ending Depth; 3rd Casing, etc.	0-60	Actual
Casing Diameter (inches); 2nd Casing Diameter; 3rd Casing, etc.	6.625	Actual
Casing Material; 2nd Casing Material; 3rd Casing, etc.	F480 PVC	Actual
WELL CONSTRUCTION (continued)		
Conductor casing used? ("YES", "NO" or "UNKNOWN") *(See Note 2)*	Unknown	
Conductor casing removed? ("YES", "NO" or "UNKNOWN")	Unknown	
* Depth to highest perforations/screens (ft below surface) (or "UNKNOWN")	60	Actual
Screened Interval Beginning Depth/Ending Depth (ft below surface); 2nd Screened Interval Beg. Depth/Ending Depth; 3rd Screened	60-180	Actual
* Total length of screened interval (ft) *(default = 10% pump capacity in gpm)* (or "UNKNOWN")	120	Actual
* Annular Seal?("YES", "NO" or "UNKNOWN") *(See Note 3)*	Yes	Actual
* Depth of Annular Seal (ft)	59	Actual
Material of Annular Seal *(cement grout, bentonite, etc.)*	cement	Actual
Gravel pack, Depth to top (ft below ground surface)	59	Actual
Total length of gravel pack (ft)	121	Actual

WELL DATA SHEET for Well #6 (Page 2 of 3)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.		
** Indicates items required for Source Water Assessment*		
*** Indicates additional items required for assessments and Ground Water Rule*		
AQUIFER		
* Aquifer Materials *(list all that apply: sand, silt, clay, gravel, rock, fractured rock)*	gravel, rock, sandy clay, gravel	Actual
* Effective porosity (decimal percent) *(default = 0.2)* (or "UNKNOWN")	unknown	
* Confining layer (Impervious Strata) above aquifer? ("YES", "NO" or "UNKNOWN")	Yes	Estimated
Thickness of confining layer, if known (ft)	40	Estimated
Depth to confining layer, if known (ft below ground)	0-40	Estimated
* Static water level (ft below ground surface)	100	Actual
Static water level measurement: Date/Method	1/29/14; unknown	Actual
Pumping water level (ft below ground surface)		
Pumping water level measurement: Date/Method		
WELL PRODUCTION		
Well Yield (gpm)	est. 10; actual 5	Actual
Well Yield Based On (i.e., pump test, etc.)	pump test	Actual
Date measured	1/29/2014	Actual
Is the well metered? ("YES" or "NO")	No	Actual
Production (gallons per year)	Never used	Actual
Frequency of Use (hours/year)	Not used at present	Actual
Typical pumping duration (hours/day)	Not used at present	Actual
PUMP		
Make	No pump at present	Actual
Type	No pump at present	Actual
Size (hp)	No pump at present	Actual
* Capacity (gpm)	No pump at present	Actual
Depth to suction intake (ft below ground surface)	No pump at present	Actual
Lubrication Type	No pump at present	Actual
Type of Power: *(i.e., electric, diesel, etc.)*	No pump at present	Actual
Auxiliary power available? ("YES" or "NO")	No pump at present	Actual
Operation controlled by: *(i.e., level in tank, pressure, etc.)*	No pump at present	Actual
Pump to Waste capability? ("YES" or "NO")	No pump at present	Actual
Discharges to: *(i.e., distribution system, storage, etc.)*	No pump at present	Actual
NOTES		
1. Neighborhood/Surrounding Area (list all that apply): A= Agricultural, Ru = Rural, Re = Residential, Co = Commercial, I = Industrial, Mu = Municipal, P = Pristine, O = Other		
2. Conductor Casing - Oversized casing used to stabilize bore hole during well construction. Should be removed during installation of annular seal.		
3. Annular Seal - Seal of grout in the space between the well casing and the wall of the drilled hole. Sometimes called "sanitary seal".		
Please Note:		
The information on this Well Data Sheet is considered confidential. To allow the information to be included		
in the permit report, or made available subject to a public information act request, the waiver clause below has		
to to be signed and dated by the owner (public water system). In lieu of this signature, the WDS has to be		
retained in a confidential file, or the information shown in the shaded rows has to be "blacked out."		
I/We, (Name)_____, certify that I/We am/are the present owners of the well described on this well data sheet. I/We have reviewed the information presented on this well data sheet and I/We take no exception to having the information inlcuded in the Department of Health Services' Engineering Report. I/We understand that by including the well data sheet in the Engineering Report, it will be part of a public document that can be reviewed and copied subject to a Public Information Act request.		
_____ _____		
(Signature) (Date)		

WELL DATA SHEET for Well #6 (Page 3 of 3)

Well Data Sheet Supplement		
REMARKS AND DEFECTS		
(Use or note these items as appropriate)		
(** indicates items pertinent to Ground Water Rule)		
Distance (ft) to other sanitary concerns:		
** Type of Sanitary Concern: _____		
** Type of Sanitary Concern: _____		
** Type of Sanitary Concern: _____		
** Type of Sanitary Concern: _____		
** Type of Sanitary Concern: _____		
Raw Water Quality concerns? (Yes or No)	No	**Actual**
** Microbiological (coliform)	No	**Actual**
Chemicals	No	**Actual**
Other (list)	Iron, Alumium, Manganese	**Actual**
** Continuous Chlorination provided? (Yes or No)	No	**Actual**
Condition of enclosure or housing	N.A.	
Pit Drained? (if applicable)	N.A.	
Pitless Adaptor? Make and Model	N.A.	
Height of pump base (inches)	N.A.	
Casing Vent? (yes or no)		
Air/Vacuum Release? (yes or no)		
Sampling Taps? (yes or no)	N.A.	**Actual**
Location of sampling taps	N.A.	**Actual**
Wellhead Riser? (yes or no); height above well	Yes; 2 feet	**Actual**
Other		

McLEAN & WILLIAMS
SINCE 1949

Well Drilling & Pump Service
878 El Centro Ave. Napa Ca, 94558
Office 707-255-6450
Fax 707-255-6489
Lic. #396352

WELL INSPECTION REPORT FOR:

Attn: Bouchaine c/o Mike Richmond **Date of test** June 18th – 19th, 2014
Upon your request, we have checked the well and/or pressure system at
1075 Buchli Station Rd., Napa Ca. - Well #1
Our findings are as follows:

WELL INFORMATION

Casing Size: 5" pvc well casing
Static Water Level: 26' from top of well casing at time of test
Well Depth: 105' **draw down during test:** 37.6'
Total water draw down in feet from static water level at end of flow test 11.6'
How tested: Open discharge using existing pumping equipment
Well yield after test: 5 gpm after 8hrs. @ 37.6' pumping level
Well Comments: Well located in the flower bed on the right of the winery by the road.

TEST EQUIPMENT INFORMATION

Pump Make: Grundfos **HP** 1 **Pump Setting:** 100'
Type: Submersible **Voltage:** 230 **Pipe Size:** 1 1/4" pvc sch.80
Pump Model: 16S10-10 **Phase:** 1 **Wire Size:** submersible pump cable #10-3/ wg
Pressure tank: None
Comments: Well pumps to the concrete storage tank in the winery. Approx. 30,000 gal.

WELL TEST INFORMATION

TIME:	WATER LEVEL:	GPM:	COLOR:	PUMP AMPS
10:00 a.m.	26'	14	cloudy	8.9
10:10	34'	5	cloudy	7.8
10:20	35.3'	5	cloudy	7.9
10:30	35.6'	5	cloudy	7.9
10:40	35.7'	5	clear	7.9
10:50	35.9'	5	clear	7.8
11:00	36.1'	5	clear	7.8
11:10	36.1'	5	clear	7.8
11:25	36.2'	5	clear	7.8
11:40	36.4'	5	clear	7.7
11:55	36.6'	5	clear	7.7
12:10p.m.	36.6'	5	clear	7.7
12:25	36.8'	5	clear	7.7
12:40	36.9'	5	clear	7.7
12:55	37'	5	clear	7.7
01:10	37'	5	clear	7.7

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WELL TEST INFORMATION

TIME:	WATER LEVEL:	GPM:	COLOR:	PUMP AMPS
01:25	37.1'	5	clear	7.8
01:40	37.2'	5	clear	7.8
01:55	37.2'	5	clear	7.8
02:10	37.2'	5	clear	7.8
02:25	37.3'	5	clear	7.8
02:40	37.3'	5	clear	7.7
02:55	37.3'	5	clear	7.7
03:05	37.4'	5	clear	7.8
03:20	37.5'	5	clear	7.8
03:50	37.6'	5	clear	7.8
04:20	37.6'	5	clear	7.8
04:50	37.6'	5	clear	7.8
05:20	37.6'	5	clear	7.8
05:50	37.6'	5	clear	7.7
06:00	37.6'	5	clear	7.7

Static moved 4.8" in final 4hours and 20 minutes of pumping.
Stop flow test and begin recovery

06:05	33.5'
06:10	29'
06:15	28'
06:20	27.7'
06:25	27.6'
06:30	27.5'
06:35	27.4'
06:40	27.3'
06:45	27.3'
06:50	27.2'
07:00	27.0'
07:30	26.9'
08:00	26.8'
08:30	26.7'
09:00	26.7'
09:30	26.7'
10:00	26.6'
10:30	26.6'
11:00	26.6'
11:30	26.6'
12:00a.m.	26.5'
12:30	26.5'
01:00	26.5'
01:30	26.5'
02:00	26.5'

5 gallons per minute is the final well flow test yield after 8 hours of continuous pumping. All measurements were taken to the top of wellhead using an electronic water level indicator 1-1/10th of an inch measurement.

FILTRATION

There is no filtration at the time of the test by well head

WATER SAMPLES

Please see attachment Lab Work # 4061736

FINAL COMMENTS

Please note that flow test results recorded by McLean and Williams Inc, represents the well water yield and system condition at the time of the test only.

If you have any questions please give me a call thank you.

Thank you, *Gonzalo Salinas*
Gonzalo Salinas

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SINCE 1949

Well Drilling & Pump Service
878 El Centro Ave. Napa Ca, 94558
Office 707-255-6450
Fax 707-255-6489
Lic. #396352

WELL INSPECTION REPORT FOR:

Attn: Bouchaine c/o Mike Richmond **Date of test** June 16th – 17th, 2014
Upon your request, we have checked the well and/or pressure system at
1075 Buchli Station Rd., Napa Ca. - Well #3
Our findings are as follows:

WELL INFORMATION

Casing Size: 8" pvc well casing
Static Water Level: 50' from top of well casing at time of test
Well Depth: 435' **draw down during test:** 53.8'
Total water draw down in feet from static water level at end of flow test 3.8'
How tested: Open discharge using existing pumping equipment
Well yield after test: 6 gpm after 8hrs. @ 53.8' pumping level
Well Comments: Well located along the driveway close to the truck scale

TEST EQUIPMENT INFORMATION

Pump Make: Grundfos **HP** 5 **Pump Setting:** 420'
Type: Submersible **Voltage:** 230 **Pipe Size:** 1 ½" galv.
Pump Model: 25S50-26 **Phase:** 3 **Wire Size:** submersible pump cable #6-3/ wg
Pressure tank: None
Comments: Well pumps to the concrete storage tank in the winery. Approx. 30,000 gal.

WELL TEST INFORMATION

TIME:	WATER LEVEL:	GPM:	COLOR:	PUMP AMPS
09:30 a.m.	50'	6	rusty	9.5
09:40	53.6'	6	rusty	9.3
09:45	53.6'	6	rusty	9.3
09:50	53.6'	6	rusty	9.3
09:55	53.6'	6	rusty	9.3
10:00	53.6'	6	rusty	9.3
10:10	53.6'	6	rusty	9.3
10:20	53.6'	6	rusty	9.3
10:30	53.6'	6	rusty	9.3
10:40	53.6'	6	rusty	9.3
10:50	53.6'	6	rusty	9.3
11:00	53.6'	6	rusty	9.3
11:30	53.7'	6	cloudy	9.3
12:00p.m.	53.7'	6	clear	9.3
12:30	53.7'	6	clear	9.3
01:00	53.7'	6	clear	9.3

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WELL TEST INFORMATION

TIME:	WATER LEVEL:	GPM:	COLOR:	PUMP AMPS
01:30	53.7'	6	clear	9.3
02:00	53.7'	6	clear	9.3
02:30	53.7'	6	clear	9.3
03:00	53.7'	6	clear	9.3
03:30	54.8'	6	clear	9.3
04:00	53.8'	6	clear	9.3
04:30	53.8'	6	clear	9.3
05:00	53.8'	6	clear	9.3
05:30	53.8'	6	clear	9.3

Static moved 3.6" in final 7 hours and 50 minutes of pumping.
Stop flow test and begin recovery

05:35	51.7'
05:40	51.6'
05:45	51.5'
05:50	51.5'
05:55	51.4'
06:00	51.4'
06:30	51.2'
07:00	51.1'
07:30	51.1'
08:00	51.0'
08:30	51.0'
09:00	50.9'
09:30	50.9'
10:00	50.8'
10:30	50.8'
11:00	50.7'
11:30	50.7'
12:00 a.m.	50.6'
12:30	50.6'
01:00	50.6'
01:30	50.5'

6 gallons per minute is the final well flow test yield after 8 hours of continuous pumping. All measurements were taken to the top of wellhead using an electronic water level indicator 1-1/10th of an inch measurement.

FILTRATION

There is no filtration at the time of the test.

WATER SAMPLES

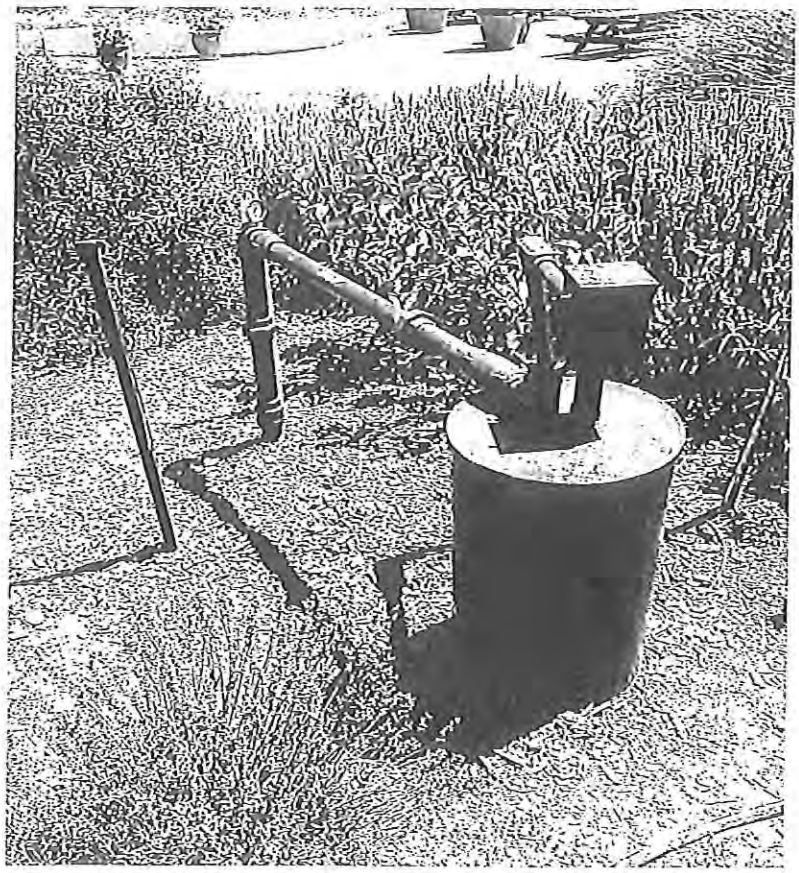
Please see attachment lab work 4061737

FINAL COMMENTS

Please note that flow test results recorded by McLean and Williams Inc, represents the well water yield and system condition at the time of the test only.

If you have any questions please give me a call thank you.

Thank you, *Gonzalo Salinas*
Gonzalo Salinas



Well # 3

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Well Drilling & Pump Service
878 El Centro Ave. Napa Ca, 94558
Office 707-255-6450
Fax 707-255-6489
Lic. #396352

WELL INSPECTION REPORT FOR:

Attn: Bouchaine c/o Mike Richmond **Date of test** February 13th – 14th, 2014
Upon your request, we have checked the well and/or pressure system at
1075 Buchli Station Rd., Napa Ca. - Well #6
Our findings are as follows:

WELL INFORMATION

Casing Size: 6" pvc well casing
Static Water Level: 93.4' from top of well casing at time of test
Well Depth: 180' **draw down during test:** 106.2'
Total water draw down in feet from static water level at end of flow test 12.8'
How tested: Open discharge using test pumping equipment
Well yield after test: 10 gpm after 8hrs. @ 106.2' pumping level
Well Comments: Well was constructed 01/29/2014 and was estimated to yield 10 gpm.

TEST EQUIPMENT INFORMATION

Pump Make: Grundfos **HP** 1 **Pump Setting:** 174'
Type: Submersible **Voltage:** 230 **Pipe Size:** 1 1/4" pvc sch.120
Pump Model: 10S10-15 **Phase:** 1 **Wire Size:** submersible pump cable #10-3/ wg
Pressure tank: None
Comments: Well has no system connection. All equipment was removed after testing.

WELL TEST INFORMATION

TIME:	WATER LEVEL:	GPM:	COLOR:	PUMP AMPS
08:00 a.m.	93.4'	14.2	cloudy	9.6
08:10	100.1'	10	cloudy	9.2
08:20	102.9'	10	cloudy	9.2
08:30	103.5'	10	cloudy	9.2
08:40	104.1'	10	cloudy	9.2
08:50	104.6'	10	cloudy	9.1
09:00	104.9'	10	cloudy	9.1
09:10	105'	10	cloudy	9.1
09:20	105.3'	10	cloudy	9.1
09:30	105.5'	10	cloudy	9.1
09:45	105.7'	10	cloudy	9.1
10:00	105.8'	10	cloudy	9.1
10:15	105.9'	10	cloudy	9.1
10:30	105.9	10	cloudy	9.1
10:45	106'	10	cloudy	9.1
11:00	106'	10	cloudy	9.1

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WELL TEST INFORMATION

TIME:	WATER LEVEL:	GPM:	COLOR:	PUMP AMPS
11:15	106'	10	cloudy	9.1
11:30	106'	10	cloudy	9.1
11:45	106.1'	10	cloudy	9.1
12:00p.m.	106.1'	10	cloudy	9.1
12:15	106.1'	10	cloudy	9.1
12:30	106.1'	10	cloudy	9.1
12:45	106.2'	10	cloudy	9.1
01:00	106.2'	10	cloudy	9.1
01:30	106.2'	10	cloudy	9.1
02:00	106.2'	10	cloudy	9.1
02:30	106.2'	10	cloudy	9.1
02:45	106.2'	10	cloudy	9.1
03:00	106.2'	10	cloudy	9.1
03:30	106.2'	10	cloudy	9.1
04:00	106.2'	10	cloudy	9.1
04:30	106.2'	10	cloudy	9.1
05:00	106.2'	10	cloudy	9.1
Stop flow test and begin recovery				
05:05	102.5'			
05:10	100.4'			
05:15	99.4'			
05:30	98.7'			
05:45	98.3'			
06:00	97.9'			
06:30	97.1'			
07:00	96.4'			
08:00	95.7'			
09:00	95.1			
10:00	94.5'			
11:00	94.1'			
12:00a.m.	93.8'			
01:00	93.8'			
02:00	93.7'			

10 gallons per minute is the final well flow test yield after 9 hours of continuous pumping. All measurements were taken to the top of wellhead using an electronic water level indicator 1-1/10th of an inch measurement.

Attachment 8

O'Connor Environmental, Inc. "Supplemental Water Availability Analysis; Tier 1 - Recharge Estimation & Tier II - Well Interference Analyses Dated September 17, 2017

Bouchaine Vineyards, Inc.
Supplemental Water Availability Analyses
Tier I--Recharge Estimation & Tier II--Well Interference Analysis

Prepared for:

Firma Design Group
1425 N. McDowell Boulevard
Suite 130
Petaluma, CA 94954

Prepared by:

O'Connor Environmental, Inc.
P.O. Box 794, 447 Hudson Street
Healdsburg, CA 95448
www.oe-i.com

Matthew O'Connor, PhD, CEG #2449
President

Jeremy Kobor, MS, CFM
Senior Hydrologist

September 17, 2015

Introduction

Bouchaine Vineyards, Inc. is located at 1075 Buchli Station Road, Napa, CA (APN 047-320-031). The property owners are seeking to modify their Use Permit to allow for improved efficiency of winery operations and improved visitor experience. In response to a July 24, 2015 revised submittal of the Use Permit Major Modification and Variance Application, the Napa County Department of Planning, Building, & Environmental Services requested some additional analysis consistent with the Water Availability Analysis (WAA) Guidance Document adopted in May of 2015.

This report is intended to supplement the primary WAA document being revised and re-submitted by Firma Design Group. Specifically, the report addresses two aspects of the WAA requirements: Tier I- a site specific estimation of the average annual recharge and drought condition recharge available to the project site, and Tier II- an analysis of the potential for well interference at neighboring wells located within 500-ft of the project wells.

Limitations

Groundwater systems of Napa County and the Coast Range are typically complex, and available data rarely allows for more than general assessment of groundwater conditions and delineation of aquifers. This analysis is based on limited available data and relies significantly on interpretation of data from disparate sources of disparate quality. Drillers' reports and water quality data available for this assessment were made available to us by the property owner. Additionally, groundwater resources in the Carneros Region have not been studied in detail the way they have in the neighboring Napa and Sonoma valleys. This places a limitation on the development of site specific WAAs such as this one in that no regional analysis is available to provide overall context for the WAA.

Background

The Bouchaine Vineyards, Inc. parcel is located in the Carneros region of Napa County about 6.5 miles southwest of the city of Napa. The parcel is located in the southeastern portion of a large (~12 square miles) region underlain by the Huichica Formation (Ph) (Figure 1). The Ph is a relatively undeformed stratified sedimentary deposit consisting of gravel, sand, reworked tuff, clay and conglomerate (Weaver, 1949). Groundwater resources in the Carneros region have not been studied in detail, however LSCE (2013) reviewed drillers' logs in the area and described the deposits as mostly clay with thin sand and gravel beds and the wells as tending to be relatively shallow and low yielding. No recent groundwater elevation monitoring data is available, however LSCE (2011) describe groundwater hydrographs from the 1960s and 1970s for three wells in the Carneros region; one well indicates a trend of declining elevations and the other two show relatively stable elevations.

Upon completion of the proposed project there will be three active and three inactive wells on the project parcel (Figure 2, Table 1). Wells 1 and 3 will provide potable water for domestic and process water uses; Well 6 will be completed to provide additional domestic/process water supply (upon completion of building permit for the water system improvements). Wells 2 and 4 will no longer be in use in the proposed project scenario, and Well 5 was drilled but never completed, and will be abandoned. Driller's logs were obtained for the three active wells, Wells 1, 3, and 6. Well 1 was completed in 1971 to a depth of 162-ft, Well 3 was completed in 1990 to a depth of 500-ft, and Well 6 was completed in 2014 to a depth of 180-ft (Table 1). All three driller's reports indicate relatively thin layers of primarily clay deposits with varying amounts of sand and gravel.

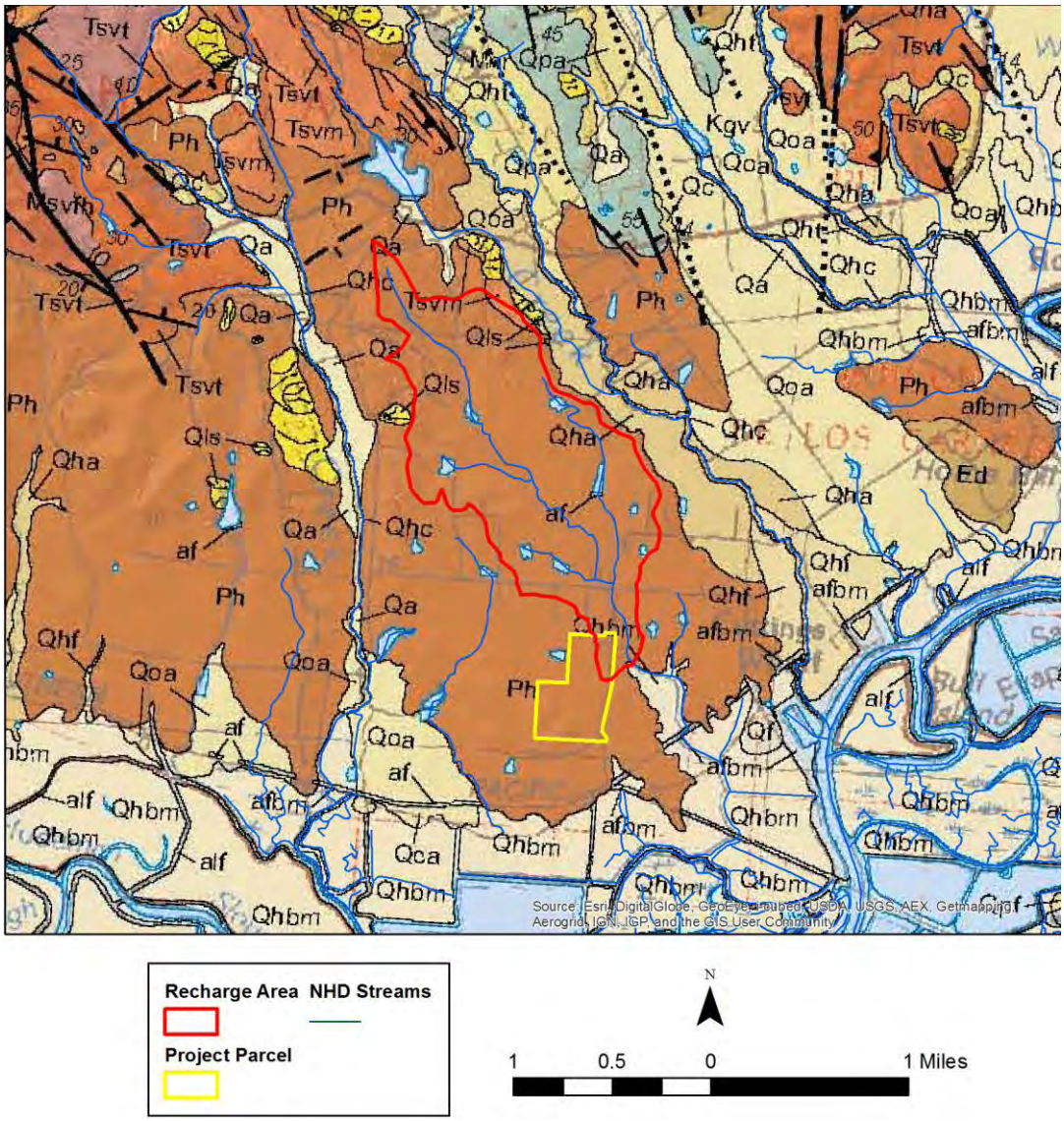

Figure 1: Location of the project parcel, extent of the project recharge area, and surficial geology from California Geological Survey (CGS) 2010, the Huichica Formation is represented by the brown-orange areas with the symbol Ph, and the stream layer is from the National Hydrography Dataset (NHD).

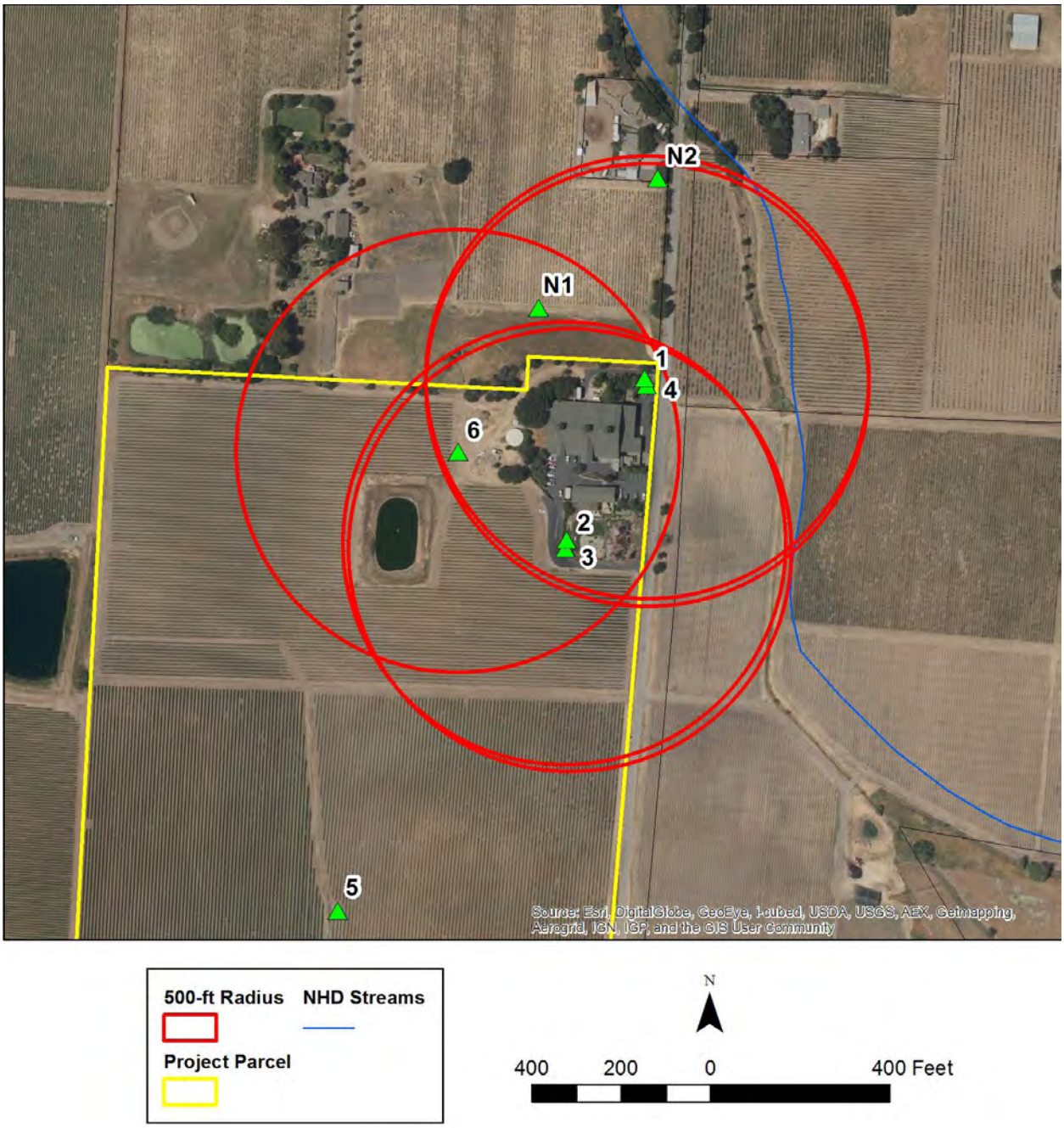

Figure 2: Locations of project wells and neighboring wells.

Table 1: Well completion details for project wells 1, 3, and 6.

Well Details	Well 1	Well 3	Well 6
Date Drilled	1971	1990	2014
Depth	162	500	180
Screened Interval(s)	22 - 162	80 - 140, 220 - 300, 360 - 500	60 - 180

Recharge Analysis

The Soil Water Balance (SWB) model developed by the U.S. Geological Survey (Westenbroek et al. 2010) was used to produce a spatially distributed estimate of annual recharge in the vicinity of the Bouchaine Vineyards, Inc. parcel. This model calculates runoff based on the Natural Resources Conservation Service (NRCS) curve number approach and calculates Actual Evapotranspiration (AET) and recharge based on a modified Thornthwaite-Mather soil-water-balance approach (Westenbroek et al. 2010). The project aquifer recharge area was defined by the drainage area up-gradient of the project wells. This entire area is underlain by the Huichica Formation and is approximately 927 acres in size.

This approach simulates recharge from infiltration of precipitation only. Significant additional recharge may occur through streambed infiltration, groundwater inflows from outside the defined project recharge area, and/or from excess irrigation, however quantifying these recharge components is beyond the scope of this analysis.

Model Development

The model was developed using a 10-meter resolution rectangular grid and water budget calculations were made on a daily time step. Key spatial inputs included a flow direction map developed from the USGS 10-meter resolution Digital Elevation Model, a land cover dataset developed through interpretation of aerial photography (Figure 3), a distribution of Hydrologic Soil Groups (A through D classification from lowest to highest runoff potential), and Available Water Capacity (AWC) developed from the NRCS Soil Survey Geographic Database (SSURGO) (Figure 4).

A series of model parameters were assigned for each land cover type/soil group combination including a curve number, a maximum infiltration rate, an interception storage value, and a rooting depth (Table 2). Curve numbers were assigned based on standard NRCS values. Results from the aquifer analysis discussed below were used to estimate the hydraulic conductivity (K) of the aquifer material which was used to define the maximum infiltration rate as 0.9 ft/day (10.8 in/day). Interception storage values and rooting depths were assigned based on literature values and previous modeling experience. Infiltration rates for hydrologic soil groups A through D were applied based on Cronshey et al. (1986) (Table 3) along with default soil-moisture-retention relationships based on Thornthwaite and Mather (1957) (Figure 5).

Daily precipitation, and daily minimum and maximum air temperature data were compiled for the Napa State Hospital climate station which is located ~5.3 miles northeast of the project parcel (Figure 6). This station was selected because it is the best available climate station in proximity to the project site with a long and continuous period of record. Based on

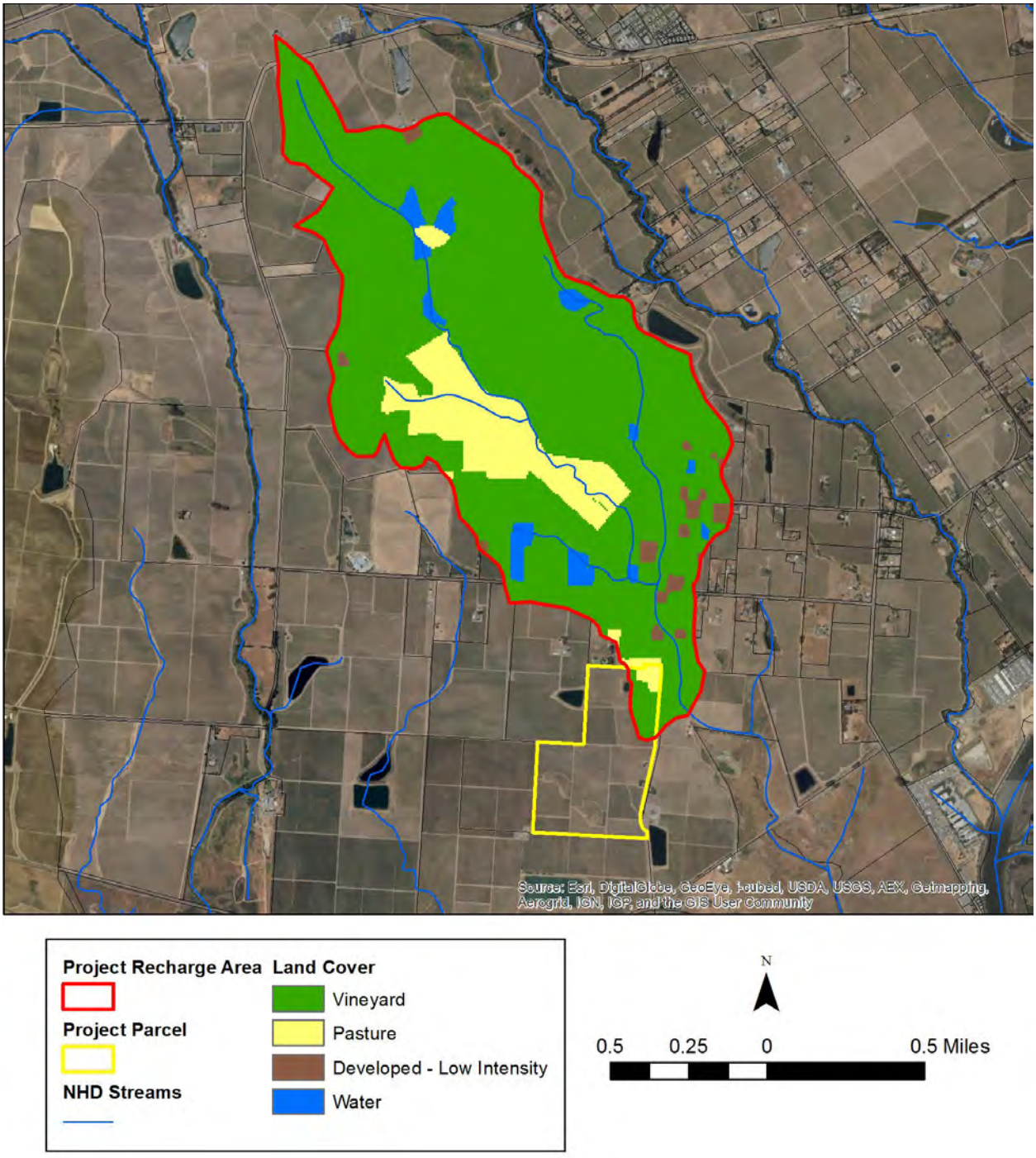

Figure 3: Land cover map used in the SWB model.

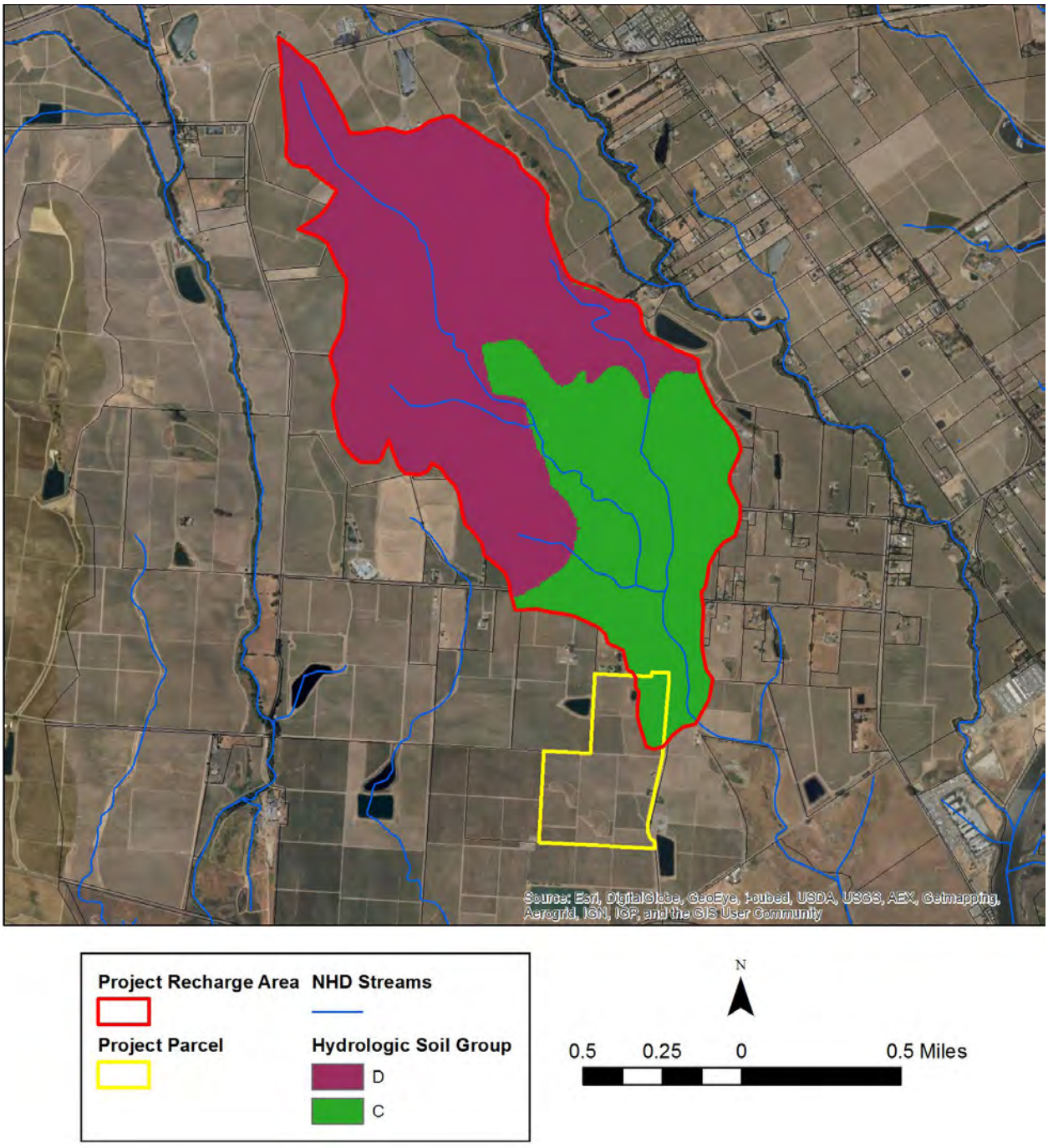

Figure 4: Soil map used in the SWB model.

the PRISM dataset which describes the spatial variations in long-term precipitation for the continental U.S., the 1980 to 2010 mean annual precipitation at the climate station location was 26.8 inches versus 24.0 inches for the project recharge area (PRISM, 2010). The precipitation data was scaled down by a factor of 0.89 to account for the difference in precipitation between the station location and the project recharge area. Water Year 2010 was selected to represent average water year conditions for the analysis because it represents a recent year with near long-term average precipitation conditions (25.7 inches at the scaled Napa State Hospital station). The model was also evaluated for water year 2014 to represent drought conditions. Water year 2014 precipitation was 17.5 inches or approximately 73% of long-term average conditions.

Table 2: Soil and land cover properties used in the SWB model.

Land Cover	Curve Number		Maximum Infiltration Rate (in/day)	Interception Storage Values		Rooting Depths (ft)	
	C Soils	D Soils		Growing Season	Dormant Season	C Soils	D Soils
water	100	100	10.8	0.000	0.000	0.00	0.00
developed - low intensity	82	86	10.8	0.010	0.005	2.00	1.80
pasture	74	80	10.8	0.080	0.015	1.00	1.00
vineyard	75	81	10.8	0.080	0.015	2.00	1.90

Table 3: Infiltration rates for NRCS hydrologic soil groups (Cronshey et al., 1986).

Soil Group	Infiltration Rate (in/hr)
A	> 0.3
B	0.15 - 0.3
C	0.05 - 0.15
D	<0.05

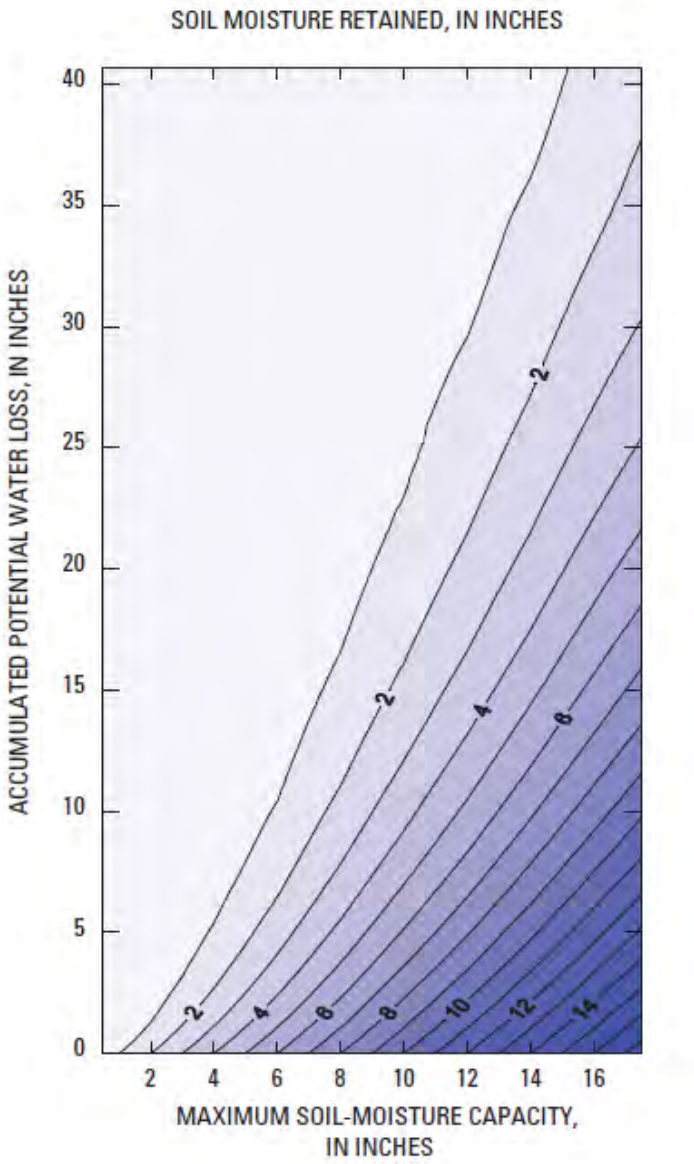

Figure 5: Soil-moisture-retention table (Thornthwaite and Mather, 1957).

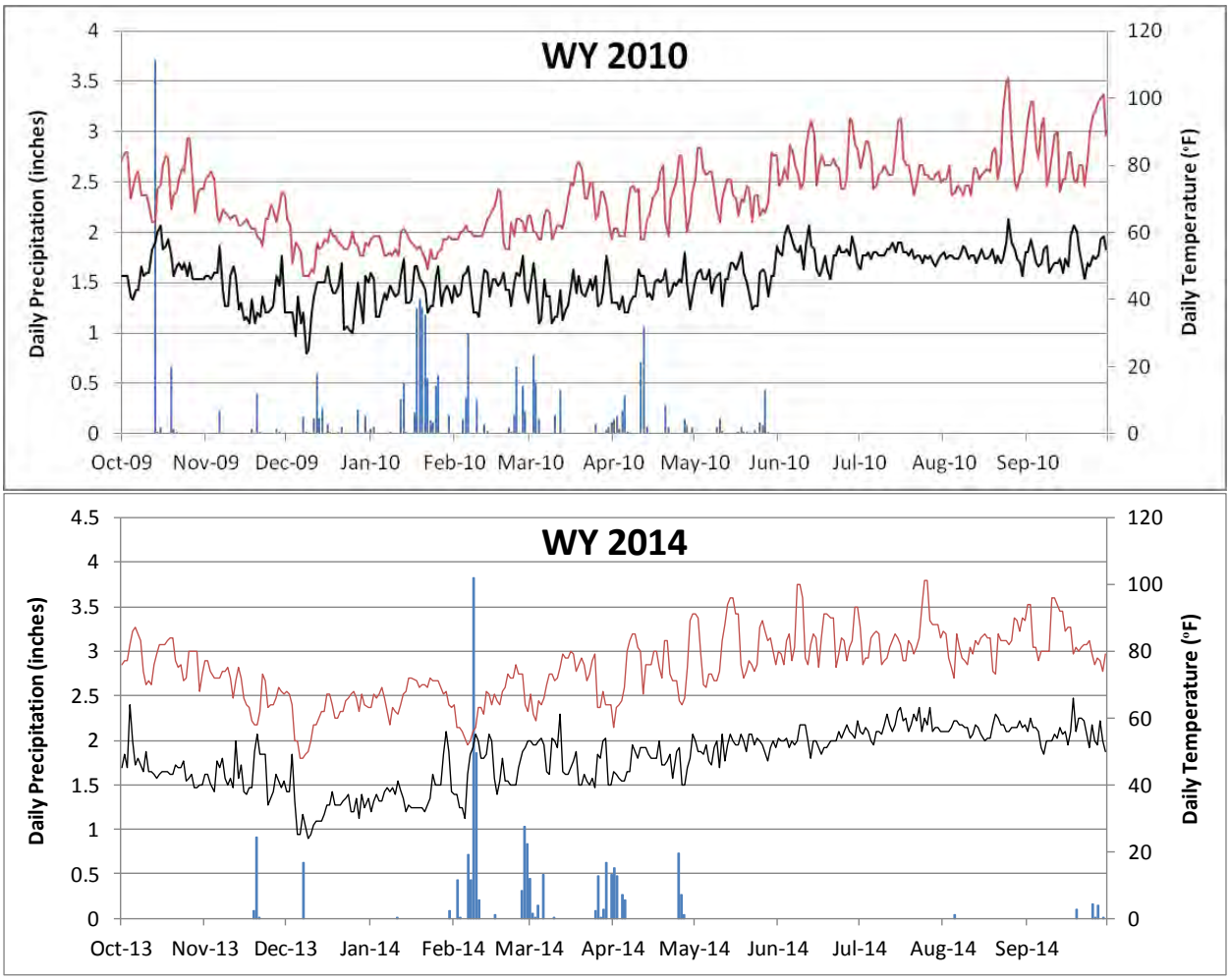

Figure 6: Daily precipitation and minimum and maximum air temperature used in the SWB model.

Results

The simulated Water Year 2010 (average water year) recharge results indicate that recharge varied across the project recharge area from ~1.2 to ~9.9 inches with the exception of areas classified as water where the model assumes zero recharge (Figure 7 and Table 4). Spatially averaged over the project recharge area, the 25.7 inches of precipitation was partitioned as follows: Actual Evapotranspiration (AET) = 11.0 inches, Runoff = 10.8 inches, and Recharge = 3.9 inches. The simulated water year 2014 (dry water year) recharge results indicate that recharge varied across the project recharge area from zero to 5.8 inches (Figure 8 and Table 4). Spatially averaged over the project recharge area, only 0.7 of the 17.5 inches of precipitation was recharged.

The recharge results can also be expressed as a total volume by multiplying the calculated recharge by the project aquifer recharge area of 927 acres (Figure 1). This calculation yields an

estimate of total recharge of 54.1 ac-ft during the drought conditions of water year 2014 and of 301.3 ac-ft for the average water year of 2010.

Water budget estimates are available for several larger watershed areas nearby including the Santa Rosa Plain, the Napa River Watershed above Napa, and the Sonoma Valley. Comparisons to these water budgets are useful for determining the overall reasonableness of the results although one would not expect precise agreement owning to significant variations in climate, land cover, soil types, and underlying hydrogeologic conditions.

The simulated Water Year 2010 average AET for the project recharge area represents ~43% of the precipitation. This is somewhat lower than the results from neighboring watersheds where mean annual ET was estimated to be equivalent to between 45% and 52% of mean annual precipitation (Farrar et. al., 2006, Luhdorff and Scalmanini, 2013; Woolfenden and Havesi, 2014). The simulated Water Year 2010 runoff for the project recharge area represents ~42% of the precipitation. This agrees well with the results from neighboring watersheds where mean annual runoff was estimated to be equivalent to between 35% and 43% of mean annual precipitation. The simulated water year 2010 groundwater recharge for the watershed represents ~15% of the precipitation. This agrees well with the results from neighboring watersheds where mean annual recharge was estimated to be equivalent to between 7% and 17% of mean annual precipitation (Farrar et. al., 2006, Luhdorff and Scalmanini, 2013; Woolfenden and Havesi, 2014).

Table 4: Summary of water balance results from the SWB model.

	WY 2010		WY 2014	
	inches	**% of precipitation**	**inches**	**% of precipitation**
Precipitation	25.7		17.5	
AET	11.0	43%	8.9	51%
Runoff	10.8	42%	7.9	45%
Recharge	3.9	15%	0.7	4%

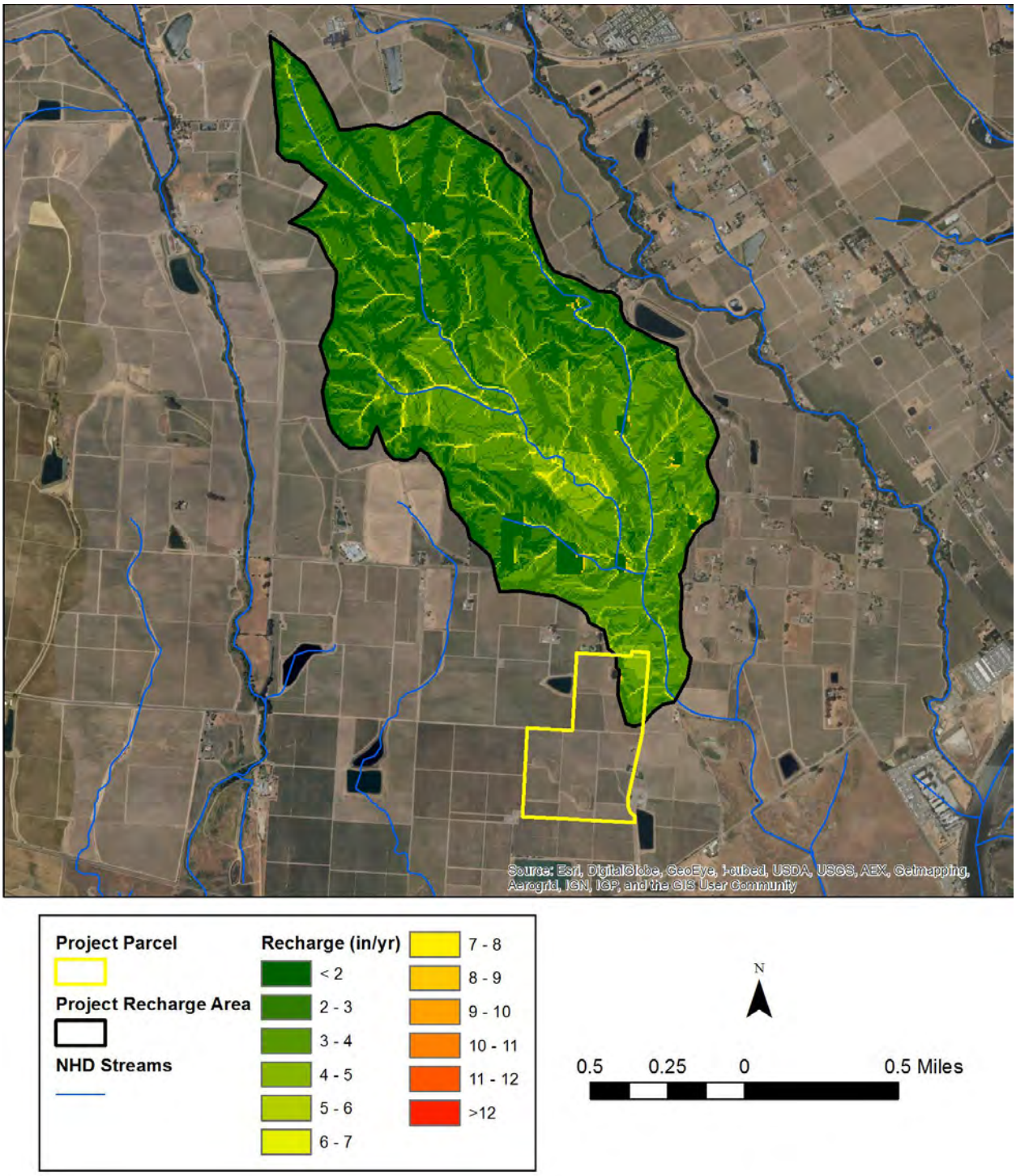

Figure 7: WY 2010 recharge simulated with the SWB model.

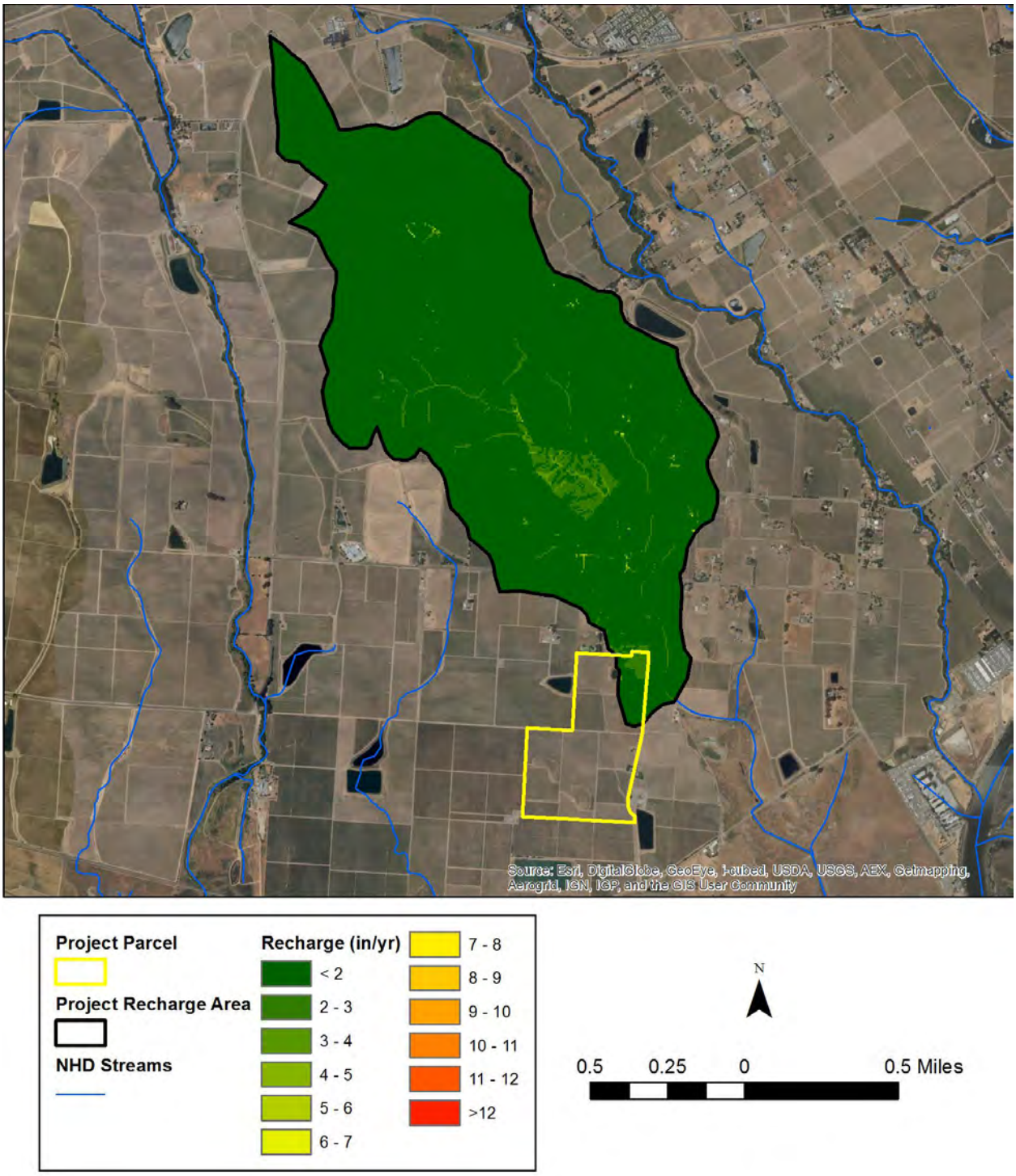

Figure 8: WY 2014 recharge simulated with the SWB model.

Aquifer Tests

Single well constant rate pump tests were performed in February of 2014 at Well 6 and in June of 2014 at Wells 1 and 3. The tests were 8 to 9 hours in duration and groundwater elevation measurements were taken at 5 to 30 minute intervals throughout the pumping period and for an additional 8 to 9 hour recovery period. Pumping rates were 5, 6, and 10 gpm at Wells 1, 3, and 6 respectively (Table 5).

The aquifer test data were analyzed using AQTESOLV and a type curve matching approach was used to estimate aquifer properties. Time drawdown data for the three tests are shown in Figure 9. Total drawdown after 8-9 hours of sustained pumping ranged from 3.8-ft at Well 3 to 12.8-ft at Well 6. The driller's logs indicate the presence of some clay-rich materials above or within the upper portions of the screened intervals at all three wells. This suggests that groundwater beneath the project parcel occurs under confined or partially-confined conditions.

Four mathematical solutions were applied in AQTESOLV, the Theis (1935), Cooper-Jacob (1946), and Papadopulos-Cooper (1967) methods for confined aquifers and the Hantush-Jacob (1955) method for a leaky confined aquifer. No previous estimates of the Storage Coefficient (S) for the Huichica Formation in the Carneros region are available. Farrar et al., (2006) estimated that S ranged from $1.5e^{-6}$ to $1.5e^{-4}$ in areas underlain by the Huichica Formation and the lithologically similar Glen Ellen Formation. Given the uncertainty in an appropriate value of S, each solution was employed to estimate Transmisivity (T) using a range of plausible S values of $1e^{-6}$ to $1e^{-3}$.

The T estimates resulting from the aquifer test analyses range from 75 to 240 ft^2/day at Well 1, from 293 to 527 ft^2/day at Well 3, and from 147 to 421 ft^2/day at Well 6 (Table 6). The mean T values were 160, 410, and 284 ft^2/day at wells 1, 3 and 6 respectively. The wide range in T estimates are not surprising given the heterogeneity in sediment textures indicated in the drillers' logs and the poorly constrained aquifer S.

Table 5: Overview of aquifer tests performed on Wells 1, 3, and 6.

	Well 1	Well 3	Well 6
Pumping Rate (gpm)	5	6	10
Duration of Test (hrs)	8	8	9
Duration of Recovery (hrs)	8	8	9
Maximum Drawdown (ft)	11.6	3.8	12.8

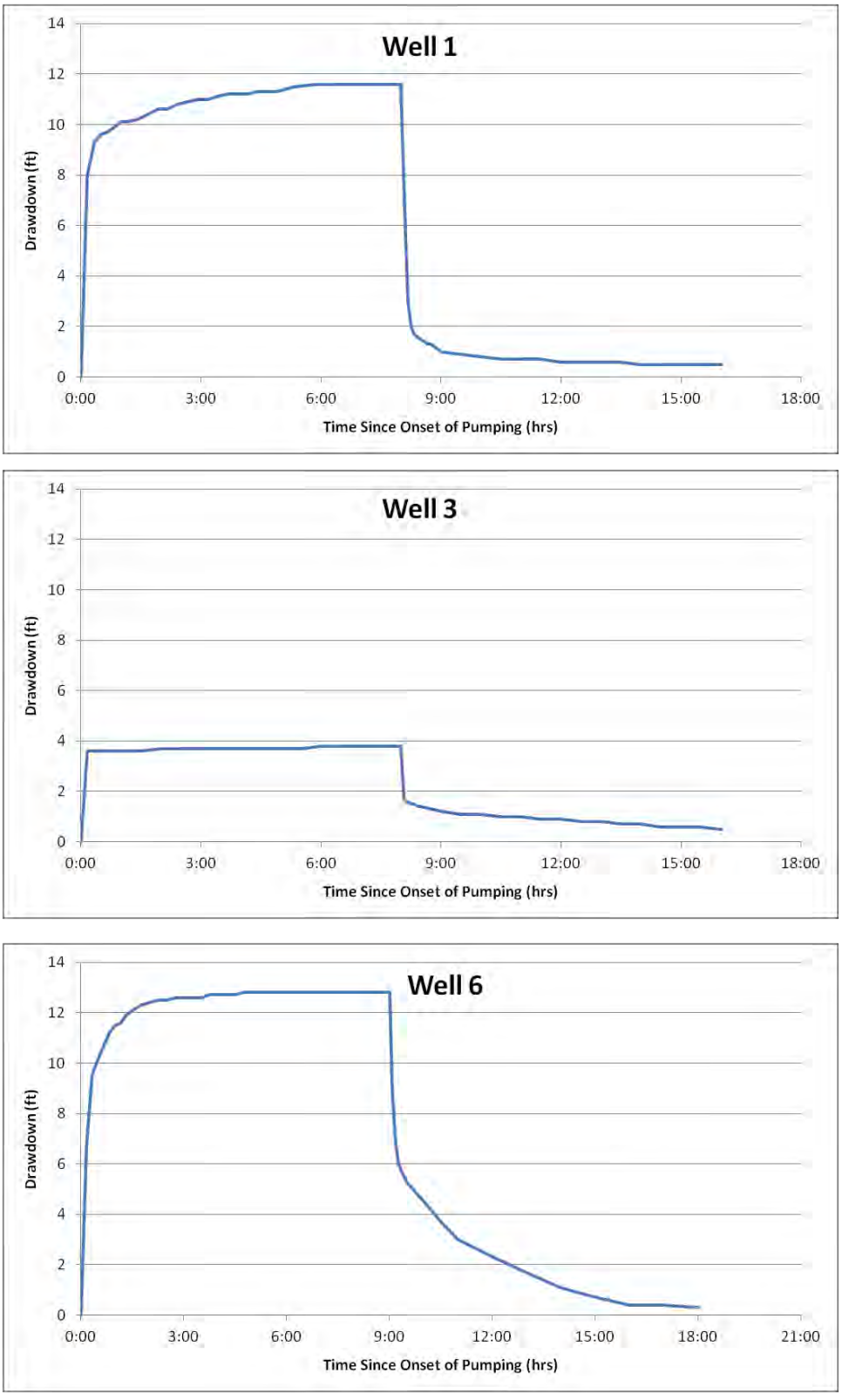

Figure 9: Time/drawdown data from the aquifer tests performed on Wells 1, 3, and 6.

Table 6: Aquifer test results for Wells 1, 3, and 6.

	Solution	Transmisivity ft^2/d (T)	Storage Coefficient (S)	Notes
Well 1	Theis	188	1.00E-03	Drawdown and Recovery
	Theis	240	1.00E-06	Drawdown and Recovery
	Hantush-Jacob	188	1.00E-03	Drawdown and Recovery
	Hantush-Jacob	240	1.00E-06	Drawdown and Recovery
	Papadopulos-Cooper	84	1.00E-03	Drawdown and Recovery
	Papadopulos-Cooper	137	1.00E-06	Drawdown and Recovery
	Cooper_Jacob	75	1.00E-03	Drawdown Only
	Cooper_Jacob	128	1.00E-06	Drawdown Only
	MEAN	**160**		
Well 3	Theis	339	1.00E-03	Drawdown and Recovery
	Theis	523	1.00E-06	Drawdown and Recovery
	Hantush-Jacob	340	1.00E-03	Drawdown and Recovery
	Hantush-Jacob	527	1.00E-06	Drawdown and Recovery
	Papadopulos-Cooper	299	1.00E-03	Drawdown and Recovery
	Papadopulos-Cooper	480	1.00E-06	Drawdown and Recovery
	Cooper_Jacob	293	1.00E-03	Drawdown Only
	Cooper_Jacob	477	1.00E-06	Drawdown Only
	MEAN	**410**		
Well 6	Theis	327	1.00E-03	Drawdown and Recovery
	Theis	420	1.00E-06	Drawdown and Recovery
	Hantush-Jacob	147	1.00E-03	Drawdown and Recovery
	Hantush-Jacob	238	1.00E-06	Drawdown and Recovery
	Papadopulos-Cooper	328	1.00E-03	Drawdown and Recovery
	Papadopulos-Cooper	421	1.00E-06	Drawdown and Recovery
	Cooper_Jacob	147	1.00E-03	Drawdown Only
	Cooper_Jacob	241	1.00E-06	Drawdown Only
	MEAN	**284**		

Well Interference Analysis

The closest neighboring wells to the project parcel that have been identified by Firma Design Group are located to the north (Figure 2). The closest project well is Well 1 which is 286 and 447-ft away from the two neighboring wells. Well 6 is 366-ft from one neighboring well and Well 3 is more than 500-ft from the closest neighboring well. The mean estimates of T and the low-end estimate of S was used to solve Equation 1 (Cooper and Jacob, 1946) to determine the amount of drawdown at each neighboring well resulting from 24 hours of continuous pumping

at Wells 1, 3, and 6. Pumping rates were assumed to be consistent with the yields used during the pump tests (5-10 gpm).

For the purposes of evaluating well interference potential, the low end value of 1e-6 was used; this is a conservative assumption since a lower value of S will result in a larger zone of influence surrounding a pumping well. The predicted drawdowns at the closet neighboring well ranged from 1.8 to 4.6 feet and from 1.6 to 3.8 feet at the farther neighboring well. The largest drawdowns resulted from pumping at Well 6 (Table 7).

$$s = 2.3Q/4\pi T \log (2.25Tt/r^2S) \qquad \text{(Equation 1)}$$

where s = drawdown in feet, Q= pumping rate in ft^3/day, T = Transmisivity in ft^2/day, t = duration of pumping in days, r = distance from the pumping well in feet, and S is the Storage Coefficient

These values are all significantly less than the 10 to 15-ft maximum drawdown criteria specified in the county WAA Guidance Document. Although pumping durations in excess of 24 hours are not expected, it is useful to note that longer duration pumping results primarily in the expansion of the radius of influence rather than in increases in the magnitude of drawdown. For example, pumping at Well 6 continuously for 100 days would only increase the drawdown at the closest neighboring well to 7.1-ft. Sustained pumping at significantly higher pumping rates than those assumed here is likely not possible owning to the yield limitations of the wells, however it is worth noting that Well 6 could be pumped continuously for 24 hours at a rate as high as 22 gpm before drawdown at the closest neighboring well would exceed 10-ft.

Table 7: Estimated drawdown at neighboring wells 1 and 2 after 24-hours of continuous pumping at the project wells (see Figure 2 for well locations).

Project Well	Distance from Project Well (ft)		Estimated Drawdown (ft)	
	N1	N2	N1	N2
1	286	447	4.0	3.6
3	540	852	1.8	1.6
6	366	755	4.6	3.8

Summary

Tier I - Recharge Estimation

Application of the Soil Water Balance (SWB) model to the project recharge area revealed that average water year recharge was ~3.9 inches/yr or 301.3 ac-ft/yr. During drought conditions, recharge was significantly lower at ~0.7 inches/yr or 54.1 ac-ft/yr. These recharge estimates are conservative in that they represent recharge from infiltration of precipitation only. Significant additional recharge may occur through streambed infiltration, groundwater inflows from outside the defined project recharge area, and/or from excess irrigation.

Tier II - Well Interference Analysis

The well interference analysis indicates that the magnitudes of drawdown at neighboring wells at expected pumping rates and durations will not exceed 4.6-ft, significantly less than the 10 to 15-ft criteria specified in the Napa County WAA Guidance Document. This evaluation is based on analysis of the drawdown resulting from pumping each of the project wells individually at the pumping rates noted herein.

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