

“F”

Water Availability Analysis



A Tradition of Stewardship
A Commitment to Service

Department of Public Works

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

Main: (707) 253-4351
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Donald G. Ridenhour, P.E.
Director



WATER AVAILABILITY ANALYSIS - PHASE ONE STUDY

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

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

Step #1:

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

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

Determine the allowable water allotment for your parcels:

Parcel Location Factors

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

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

<u>Valley Floor</u>	<u>1.0 acre feet per acre per year</u>
Mountain Area	0.5 acre feet per acre per year
MST Groundwater Deficient Area	0.3 acre feet per acre per year

Assessor's Parcel Number(s)	Parcel Size (A)	Parcel Location Factor (B)	Allowable Water Allotment (A) X (B)
# 034-160-008	7.51	1.0	7.51

Step #3:

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

EXISTING USE:

Residential	<u>0</u> af/yr
Farm Labor Dwelling	<u>0</u> af/yr
Winery	<u>.43</u> af/yr
Commercial	<u>0</u> af/yr
Vineyard*	<u>2.25</u> af/yr
Other Agriculture	<u>0</u> af/yr
Landscaping	<u>.1</u> af/yr
Other Usage (List Separately):	
_____	_____ af/yr
_____	_____ af/yr
_____	_____ af/yr

PROPOSED USE:

Residential	<u>0</u> af/yr
Farm Labor Dwelling	<u>0</u> af/yr
Winery	<u>.43</u> af/yr
Commercial	<u>0</u> f/yr
Vineyard*	<u>2.25</u> af/yr
Other Agriculture	<u>0</u> af/yr
Landscaping	<u>.1</u> af/yr
Other Usage (List Separately):	
_____	_____ af/yr
_____	_____ af/yr
_____	_____ af/yr

TOTAL: 2.78 af/yr
90586.78 gallons"

TOTAL: 2.78 af/yr **TOTAL:**
TOTAL: 905865.78 gallons"

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

Step #4:

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

EXISTING

Agricultural .3 acre ft x 7.51 acres 2.25 acre ft. No water for heat and frost protection

Winery process water 2.15 acre ft. x 20,000/100,000 gallons=.43 acre ft.

Winery Domestic and Landscaping .5 acre ft. x 20,000/100,000=.1 acre ft.

PROPOSED

Agricultural .3 acre ft x 7.51 acres 2.25 acre ft. No water for heat and frost protection

Winery process water 2.15 acre ft. x 20,000/100,000 gallons=.43 acre ft.

Winery Domestic and Landscaping .5 acre ft. x 20,000/100,000=.1 acre ft.

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

Signature: _____ **Date:** _____ **Phone:** _____

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1038 Stonybrook Drive, Napa, California, 94558
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ALAN J. MOORE, AIA
ARCHITECT

County Project No. P15-00020

May 31 2016
Water Availability Study

Planning, Building, & Environmental Services: Planning Division

1195 Third Street, Suite 210, Napa, CA, 94559
Attn.: Jason Hade, AICP-Office 707-253-4417
Direct-707-299-4298; jason.hade@countyofnapa.org

WATER AVAILABILITY ANALYSIS (WAA) STUDY & NARRATIVE

Mc VICAR VINEYARDS APN 034-160-008

6155 Solano Avenue, Napa, CA, 94558

Members of the County Planning Board,

This portion of the USE PERMIT Request is a Narrative Documentation of the Water Availability Adequacy for the proposed continued and expanded use of the WINERY.

INTENT OF USE PERMIT

The McVicar Family Trust property is located at 6155 Solano Ave and Hoffman Lane, approximately one mile south of Yountville. The facility will remain working, producing and selling wines on site, as in the past, consistent with a Napa's "Small Winery" exemption. No additional water will be used more than in the existing Use Permit limits.

As stated in the stipulated judgment of Action No. 26-64892, Napa County V. Napa Point Winery LLC, dba Dahl Vineyards et al, in superior Court Napa County, the applicant wishes to continue the historical use of the property including use of its established functioning on-property water well. The applicant/owner feels that the available site and minor proposed improvements will enable the USE expansion without harm to the land, or to the public, and will indeed prove an asset for the local wine area.

The winery will continue the crush and the wine production as before. There is no appreciable increase of water usage beyond a dozen daily extra toilet flushes and hand washings.

LAND & WATER SOURCE DESCRIPTION

The parcel is adjacent to State Route 29, about a mile south of Yountville. This site (and the adjacent Yountville Appellation District's approximately 11,000-acers) of shallow sloped land provides a natural permanent re-charge area for the entire AVA. Rainfall is 32" annually, and the soils are naturally gravelly, silty loams, sedimentary in origin, and gravelly alluvial soils with rock, and moderately fertile.

The property covers 7.51 acres; the approximately 400-ft x 800-ft parcel is gently sloped 6-feet from north to south. The slope is extremely flat: only 4-6-feet across nearly 860-foot length: that is less than 1% slope. The land is particularly naturally a low land which is its own bio-retention for all the adjacent water shed leading to Hopper Creek, and then to Dry Creek, and to the Napa River. The resultant rain runoff absorption of all non-absorptive

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6155 SOLANO AVENUE, NAPA McVICAR VINEYARDS

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pavement areas is very well taken naturally now, by delayed percolation in the natural "perches" and ponding's (randomly about a foot lower than surrounding planted rows).

WATER QUALITY

While no tests are recent, the winery does "soften" the water as do the surrounding owners, and guests and employees drink bottled water; furthermore, the winery will serve less than 25 people per day, and thus does not fall in the Controlled Water Source Category

EXISTING PROPERTY IMPROVEMENTS

A 1200-sqft one story winery crush and fermentation building was built on site c.1985; that construction includes a toilet facility (recently upgraded to "Accessible") and included further, a well, with a pair of 85-gallon storage tanks, and an access driveway from Solano Avenue, and a Waste Processing System (septic tank and septic field).

Note that the existing well does and will continue to serve a winery with less than 25 employees and with less than 25 daily visitors, and with no kitchen: hence the project is not subject to County Code 13.08 for "Public" water systems thresholds. The original well log is attached, (See APPENDIX 1)

EXISTING WELL LOCATION:

- 200-feet from center of Solano Ave
- 130-feet from the existing winery Septic Tanks
- 340 -feet from the Septic Field
- 1200-ft from the nearest well (not owned by McVicar Winery)

EXISTING WELL DESCRIPTION

- The attached WELL LOG indicates a drilled casing 160-ft depth;
- CLASS I Permit, domestic
- Bore Diameter: 9" Casing Diameter 5" x 200-ga
- Clay encountered from surface to 100-ft
- Gravel encountered from 100 to 150-feet down
- Clay encountered again from 150 to 160-feet down
- Perforations were installed between 100-ft to 160-ft; slots covered in screen
- Water Levels encountered at 110-ft; and maintained at 50-feet after drilling
- Gravel Pack (2" annular) from Level 25' to 160'
- Well Seal installed cement down to 25-ft (no intermittent strata were sealed)

Note: Water levels were from the Date of Drilling: October 28 through November 1, 1991, before Rainy Season

Also note that 1 month ago, the pump was replaced which indicated the measured depth and size, and 5-HP pump replacement used (the same HP as designed for in 1991)

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The Recent Repair work verified the following conditions

4-18-16 service call

Check well pump not building pressure, set up test gauges pump only building 15 PSI
Pump should be building 100 PSI plus all indication are that well pump is wore out
Or we have holes in the drop pipe (combination of both) advice customer to let us remove
Well pump for further inspection, customer ok to do so.

Removed customer well pump found holes in the pipe, check well pump dated code 1991
Pump and more have indications of wear should be replace is too old.
Advice customer to replace pump, motor, drop pipe with PVC Sch 80 and stainless steel
Fittings Non corrosive materials. (pump replacement is a 5Hp same as old pump)
Well depth is 167' water level 3" pump setting 140' from top of well casing.

1- Grundfos 60S50 Pump End
1- 5HP 230v 3Ph Motor
150'- Submersible #10-3 Wire
1- Splice kit # 10
2-Torque Arrestors
1-Well Seal 6"x2"
7- 2" Stainless Steel Couplings
1- 2" Stainless Steel Tee
1- 2" Stainless Steel Plug
2- Nipples Stainless Steel 2"x12"
150'- Safety Rope
1- 2" Cock Valve Stainless Steel
1- Misc. Fittings Package

WELL WATER CAPACITY HISTORICAL INDIVIDUAL RECORDS

As regards well water usage records, there are none, from 1991 to present, however the Winery will install a Well Meter as a voluntary part of this Use Permit. Suffice that since 1991, there has never been a detected water pressure or volume problem nor have there been any foul odors of contaminants. Therefore no site specific Study can be made of the well. However the State Water Board has Basin Studies throughout California, including of lower Napa Valley.

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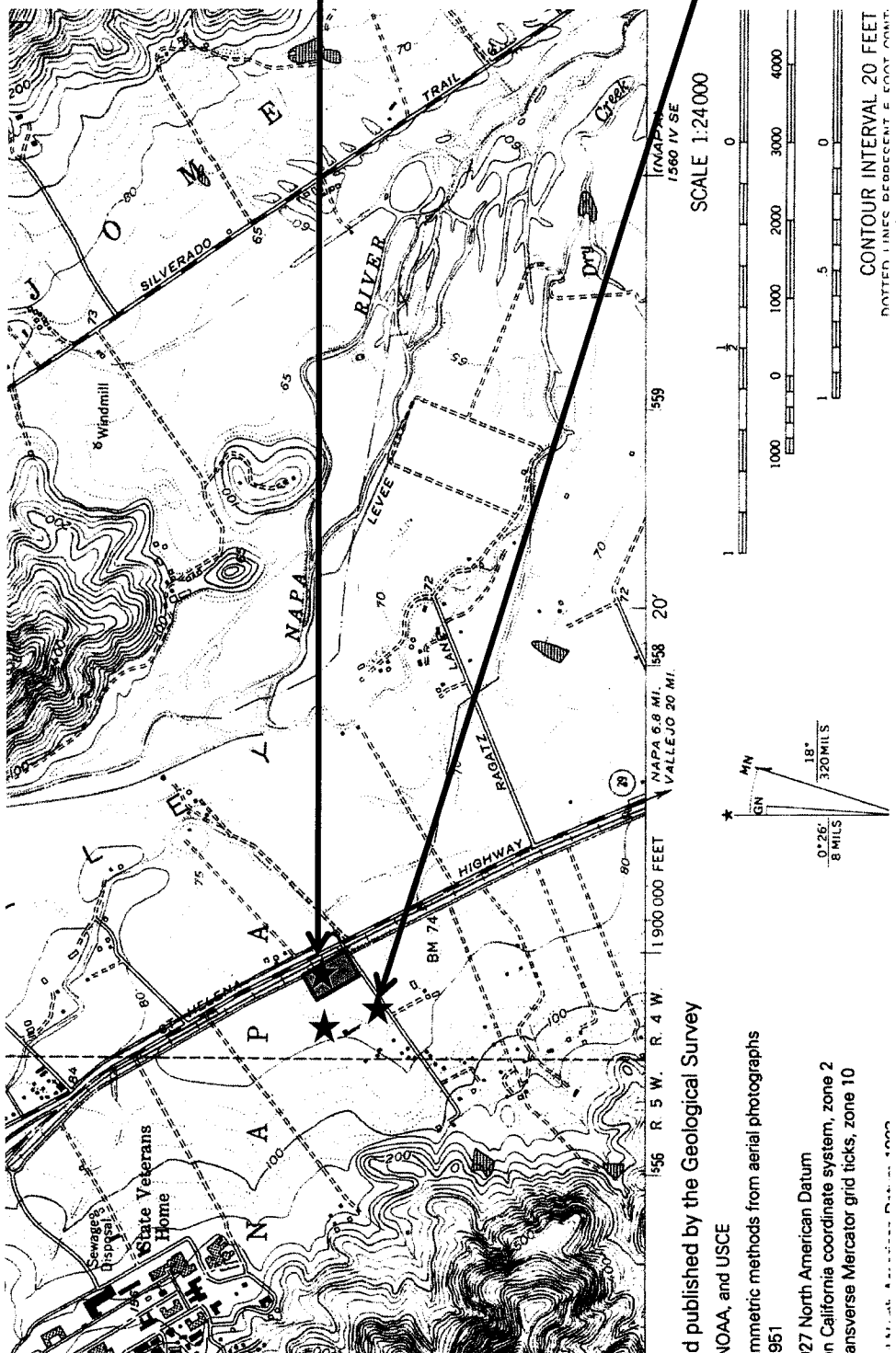
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McVicar Winery and Well

Neighbors Wells



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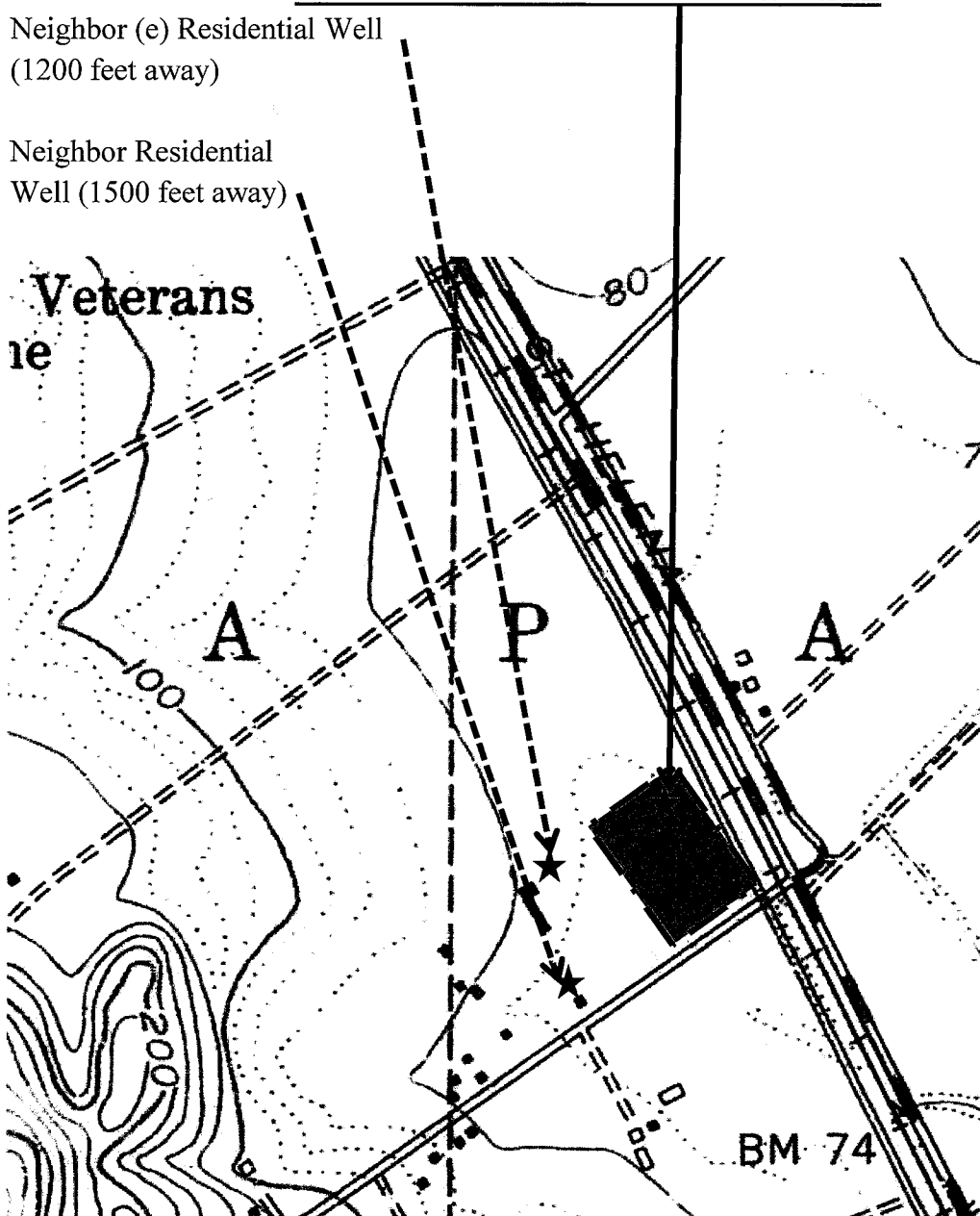
USGS Map of the area
Showing the locations of The 6155 Solano Ave Well,
And nearest other wells (which do not belong to McVicar)

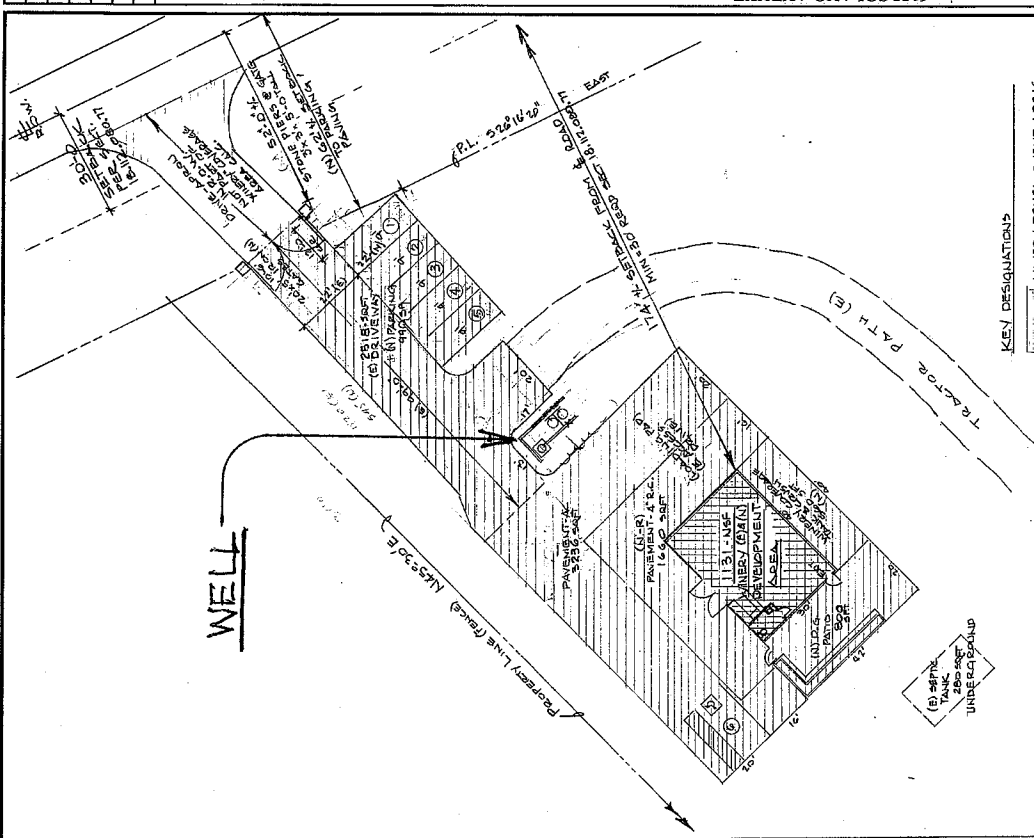
McVICAR WINERY VINEYARD & WELL

Neighbor (e) Residential Well
(1200 feet away)

Neighbor Residential
Well (1500 feet away)

Veterans
le





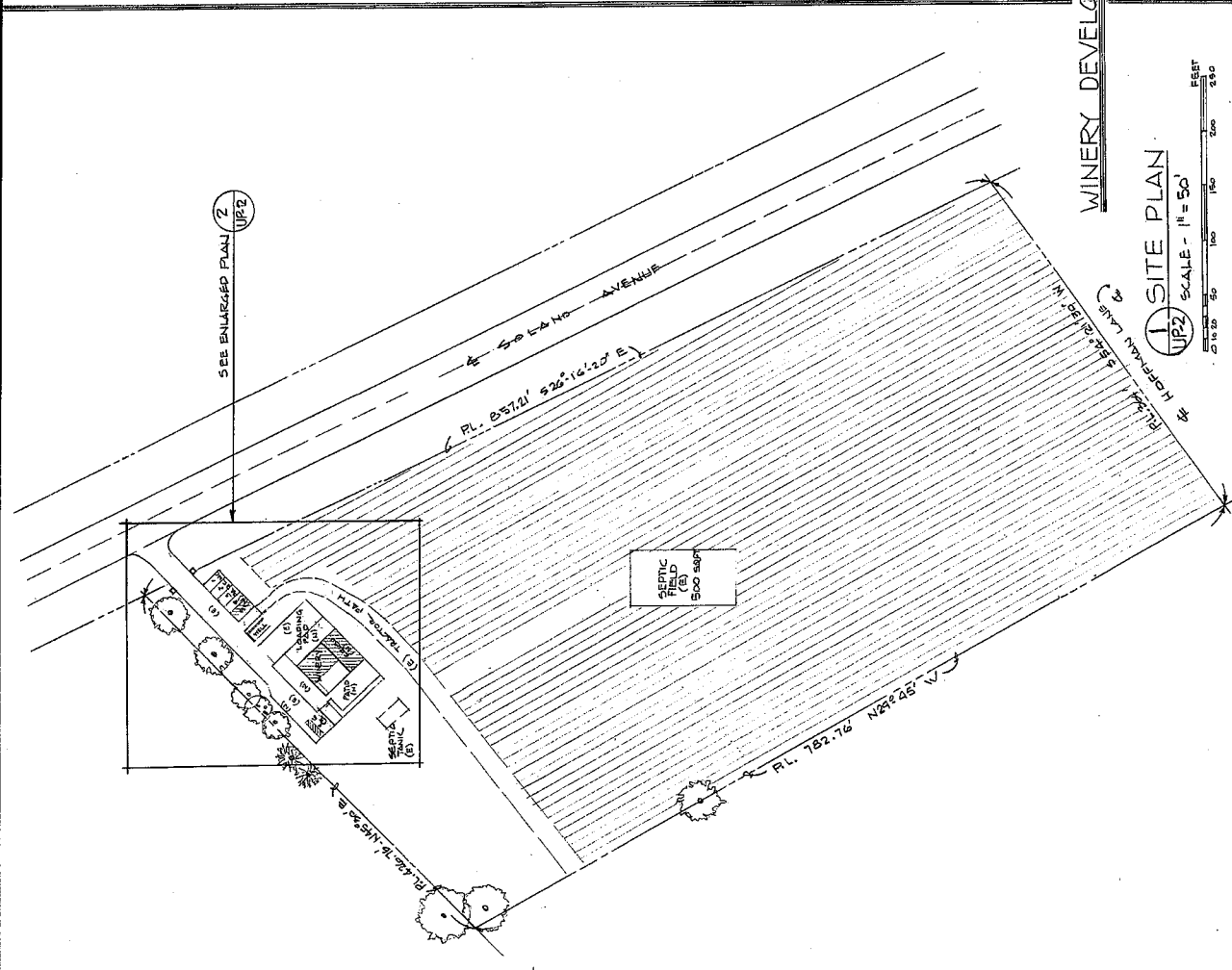
KEY DESIGNATIONS

WINERY DEVELOPMENT AREAS
TOTAL = 10324 A.S.P. (%)

[illegible]
$$\begin{aligned} P_{\text{AVING}}(N+E) &= 9764 \\ P_{\text{AVING}}(E) &= 7261 \\ P_{\text{AVING}}(N/R) &= 4016 \end{aligned}$$

WINERY DEVELOPMENT & WINERY COVERAGE AREAS

2 ENLARGED WINERY AREA PLAN
WP2 SCALE - 1" = 16'-0"



1 SITE PLAN

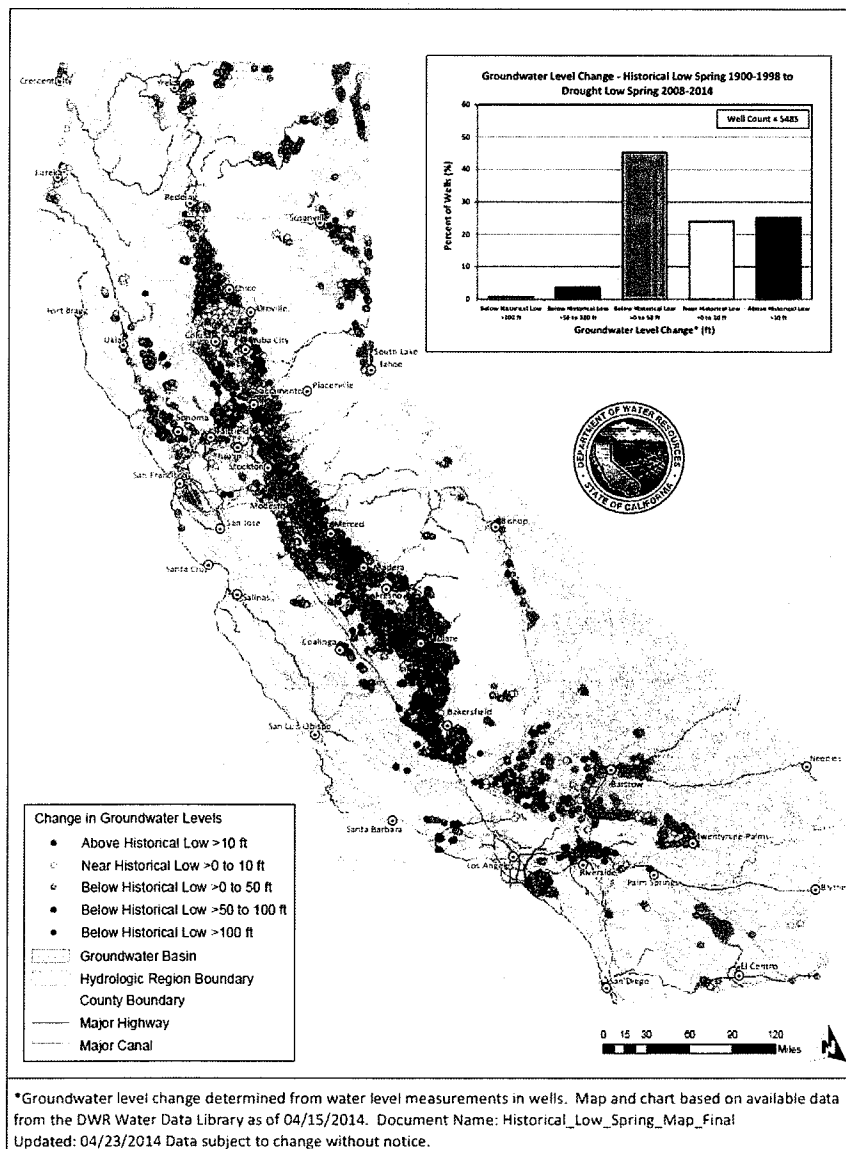
UT-2 SCALE - 1" = 50'

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The attached (APPENDIX 2) water Ground Table Maps published on line indicate that Napa (http://www.water.ca.gov/waterconditions/docs/Drought_Response-Groundwater_Basins_April30_Final_BC.pdf) has not had a water supply problem in the recent decades since the statistics have been recorded (1995 to 2015); indeed, some years the ground water has either stayed the same or risen minutely, including in the 2013-2014 year. Even in the 1900 to 1998 Well Water Drop estimate Napa was not in a danger zone



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Per the forms already part of the "Use Permit Application" water use is projected at 550 gallons per day (input to the septic system) and overall including that a total 2.78 acre-feet per year (905,870 gallons per year), the same as estimated current usage.

The winery vineyards currently utilize a low water usage approach which only waters once or twice a year. At the drip rate per existing vines plus drip rates of new vines, plus other sundry uses of maintenance and fruit washing at the crush, only 300,000 gallons are likely to be drawn from the well: perhaps 450,000 gal/year, which is still half to less than half of what the county "official" water board allows. Accordingly the Winery feels that to continue its current Use Permit will have no injurious effect on the local AVA water table or the lower county water basin

ATTACHED ARE:

APPENDIX 1: The original well log, 1991 (3 pages)

APPENDIX 2: California State Water Board Water Basin rise/fall data Maps for cycles

January 2016 Critically Overdrafted Water Basins

2004 – 2014 Groundwater Level Change

2013 - 2014 Groundwater Level Change

2014 – 2015 Groundwater Level Change

If you have any questions, please contact me at the above [letterhead] phone numbers or email address.

Respectfully

Alan J. Moore, AIA

C:/folders/6155 Solano/ General Proposal Narrative, Rev.5/31/16

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APPENDIX 1

The original well log, 1991

Following 3-pages

034-160-008

#3725

QUADRUPLICATE
Use to comply with
local requirements

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

Do not fill in

No. **384971**

Notice of Intent No. _____
Local Permit No. or Date 29548

State Well No. _____
Other Well No. _____

(1) OWNER: Name Sid Vilar
Address 3078 Encanto Dr
City Napa ZIP _____

(2) LOCATION OF WELL (See instructions):

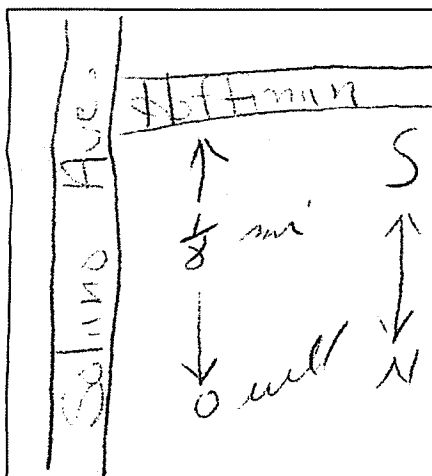
County 28 Owner's Well Number _____
Well address if different from above 2533 Solano
Township 034 Range 160 Section 008
Distance from cities, roads, railroads, fences, etc. 1/2 mi. N
Solano Ave

(12) WELL LOG: Total depth 160 ft. Completed depth 160 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0 - 110 Clay

110 - 150 gravel

150 - 160 Clay



WELL LOCATION SKETCH

(3) TYPE OF WORK:

New Well ☒ Deepening ☐
Reconstruction ☐
Reconditioning ☐
Horizontal Well ☐
Destruction ☐ (Describe
destruction materials and pro-
cedures 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 20
Diameter of bore 4
Packed from 3 to 160 ft.

(7) CASING INSTALLED:

Steel ☐ Plastic ☒ Concrete ☐

(8) PERFORATIONS:

Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	160	5	160	100	160	20/40

(9) WELL SEAL:

Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 25 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval _____ ft.
Method of sealing sealant

(10) WATER LEVELS:

Depth of first water, if known 110 ft.
Standing level after well completion 140 ft.

(11) WELL TESTS:

Was well test made? Yes ☒ No ☐ If yes, by whom? Well Driller
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test 20 ft. At end of test 110 ft.
Discharge 70 gal/min after 2 hours Water temperature _____
Chemical analysis made? Yes ☐ No ☒ If yes, by whom? _____
Was electric log made Yes ☐ No ☒ If yes, attach copy to this report

Work started 10-28-1941 Completed 11-1-1941

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 Pulliam Well Drilling (Well Driller)
NAME Pulliam Well Drilling
(Person, firm, or corporation) (Typed or printed)
Address 2377 Piedmont Ave
City Napa ZIP 94558
License No. 248677 Date of this report 11-23-41

DATE 10-28-91
FEE 7900
RECEIPT NO. 29598
BY SL

A.P.# 034-160-008
RECORD # 3725

NAPA COUNTY
DEPT. OF ENVIRONMENTAL MANAGEMENT
APPLICATION & PERMIT TO CONSTRUCT A WATER WELL

NAME Sid McVicar ADDRESS 5253 Solano Napa
(Owner) (Job Location)
NAME Pulliam Drilling PHONE # 249396
(Well Driller) ADDRESS 2877 Piedmont Ave.

TYPE OF WORK New Class I PERMIT ☒ Test Hole Date Called In _____
New Class II PERMIT _____ U.S.G.S. Map Received _____
Well Reconstruction _____ Well Deepening _____ Horizontal Well _____
Well Destruction _____ High Hazard _____ Low Hazard _____ Hand Dug _____

PROPOSED DOMESTIC ☒ IRRIGATION _____ INDUSTRIAL _____ MUNICIPAL _____
USE TEST WELL _____ HOT WATER _____ (D.O.G. Clearance. _____) OTHER _____

Sewage Disposal System (existing or proposed) Public NONE Individual ☒ Private _____
Distance from well to any part of nearest sewage disposal system 7100 ft. feet.
Septic System Location Determined By: AP file
Plot plan of well location received yes County road setback 48 ft. from centerline.

WORKER'S COMPENSATION COVERAGE: (Check one of the following)

- _____ A certificate of current Worker's Compensation Insurance coverage is presently on file with this office.
_____ A certificate of current Worker's Compensation Insurance is being filed with this application.
☒ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation laws in California.

TERMS OF PERMIT

- 1) Call at least 24 hours in advance to schedule an inspection.
2) Prior to receiving a Final Clearance on the well, a copy of the Department of Water Resources "Water Well Drillers Report" (DWR-188) must be returned to our Department.
Old Wells to be Destroyed: _____
Other Remarks: _____

Rich Pulliam 10-28-91
Signature of Applicant Date

FOR OFFICE USE ONLY

	Date	By	Remarks
City Clearance			
Pub. Works Clearance			
Pre-Inspection			
Class II Approval			
Permit Issued	<u>10/28/91</u>	<u>gm</u>	
Const. Insp.	<u>10/30/91</u>	<u>gm</u>	<u>25' annular seal; 72" annular space (160 ft deep well)</u>
Well Log Rec.			
Final Insp.			

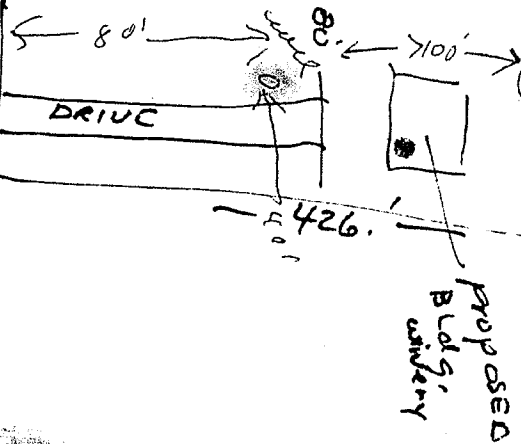
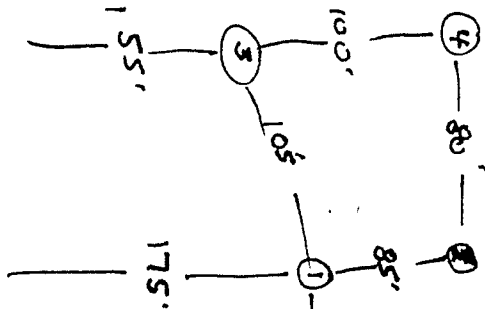
HOFFMAN AVE.

7.51 Acres.

772'

SOLANO AVE.

857'



SDSDS
Approved
Location

WINE TRAIN R.R.

A. J. MOORE ASSOCIATES

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APPENDIX 2

California State Water Board Water Basin

Rise/fall data Maps for cycles

Following 4-pages

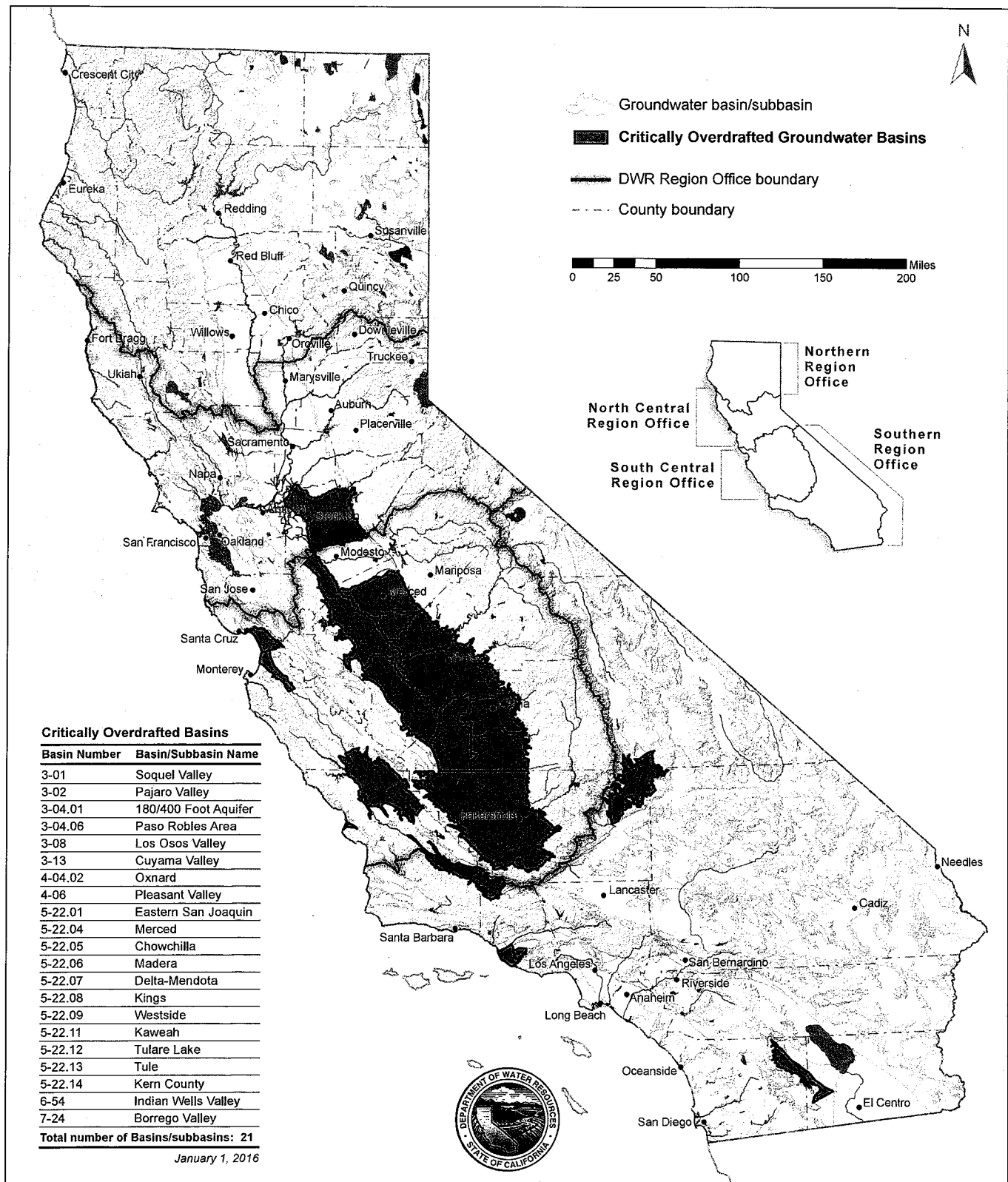
2016 January Critically Overdrafted Water Basins

2004 – 2014 Groundwater Level Change

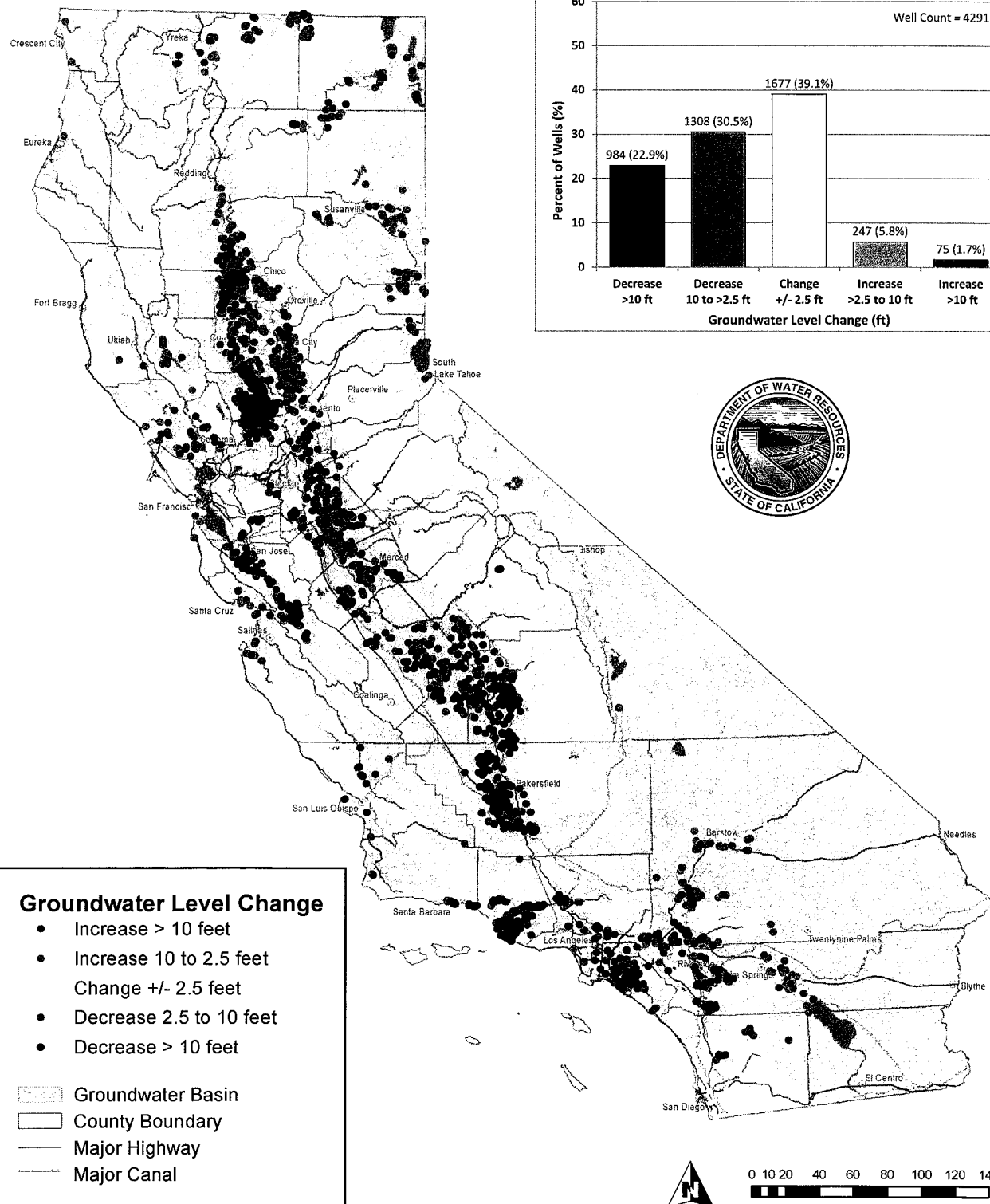
2013 - 2014 Groundwater Level Change

2014 – 2015 Groundwater Level Change

Critically Overdrafted Groundwater Basins – January 2016

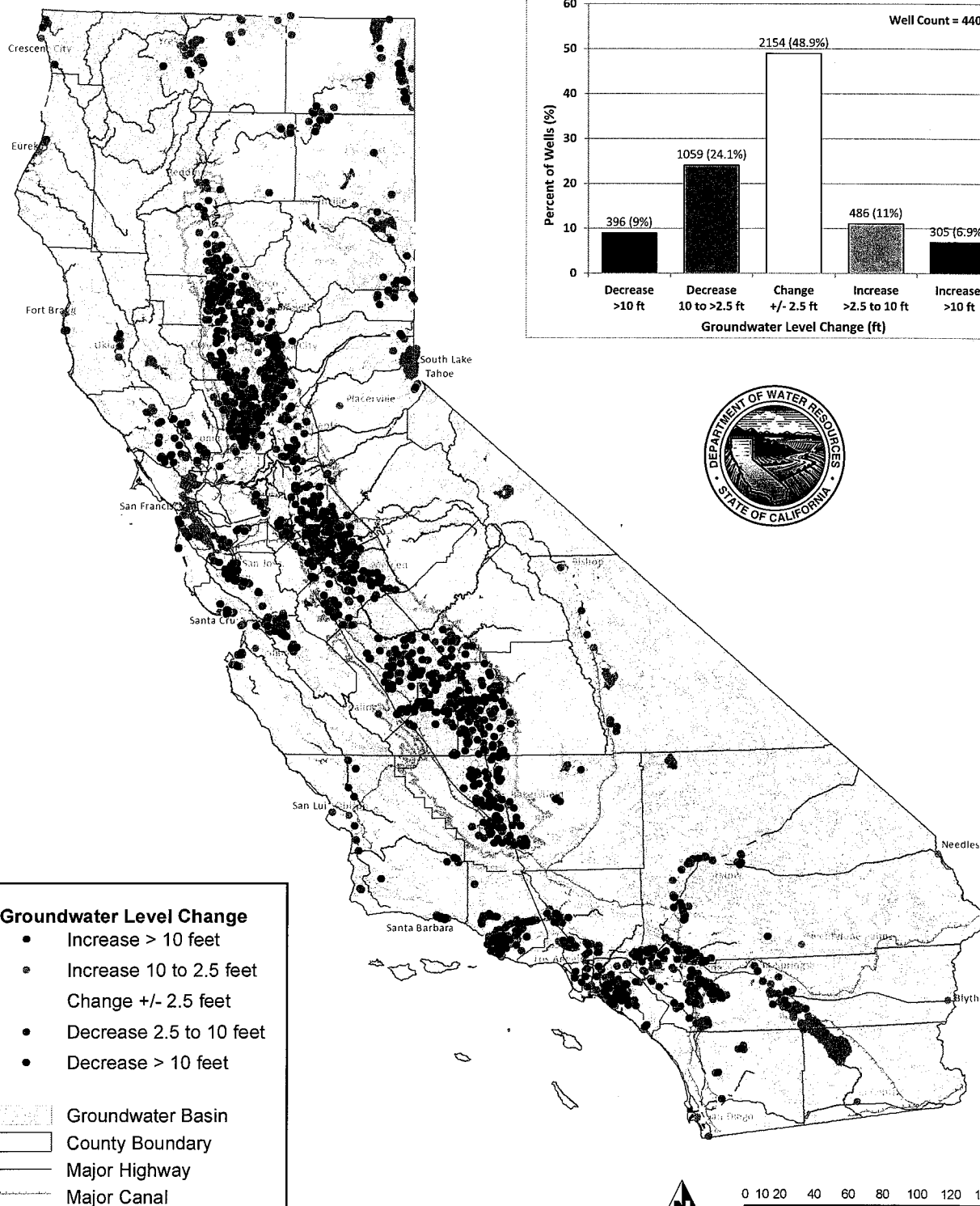


Groundwater Level Change* - Fall 2013 to Fall 2014



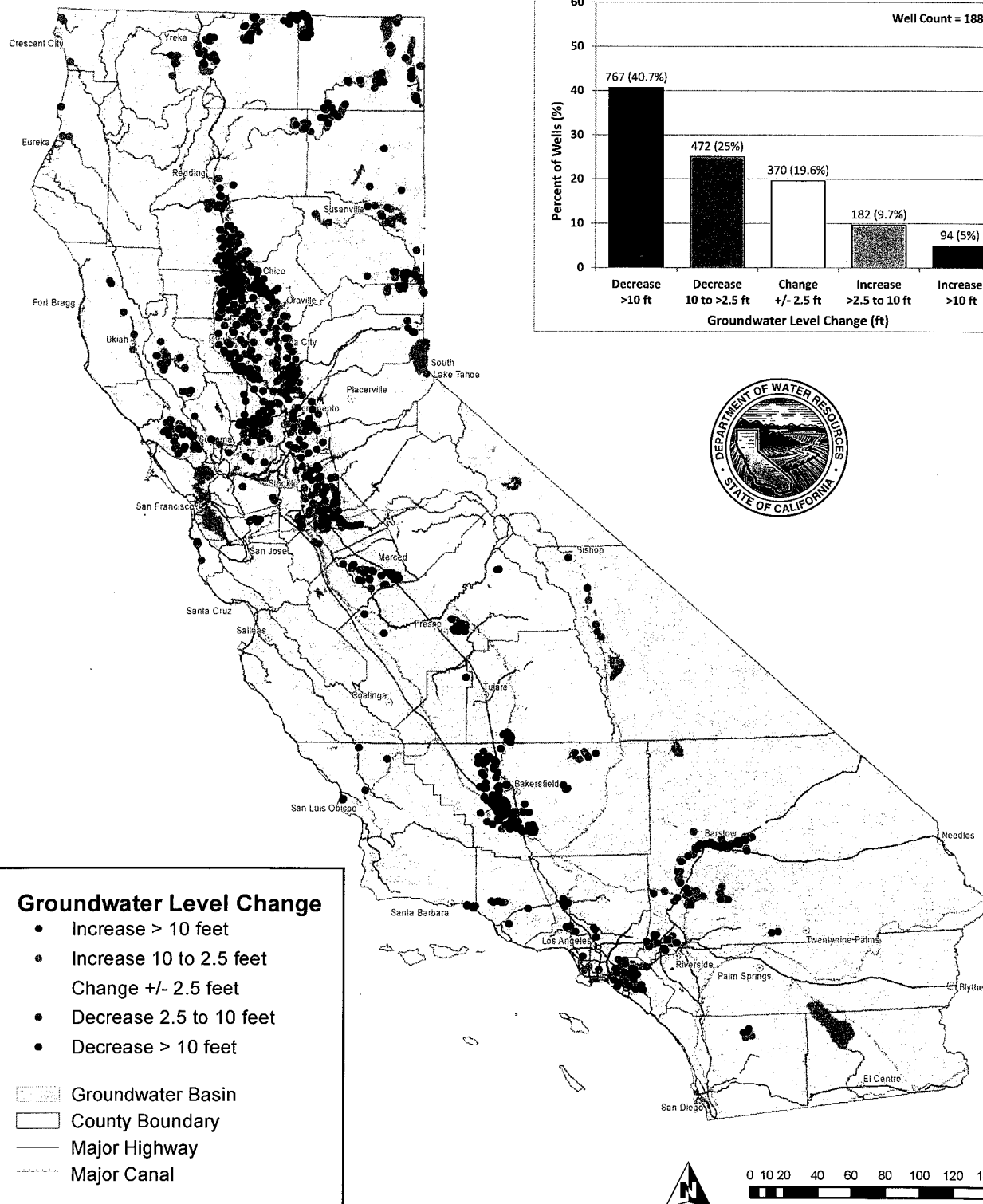
*Groundwater level change determined from water level measurements in wells. Map and chart based on available data from the DWR Water Data Library as of 06/18/2015. Document Name: F2014_F2013_DM Updated: 06/19/2015
Data subject to change without notice.

Groundwater Level Change* - Fall 2014 to Fall 2015



*Groundwater level change determined from water level measurements in wells. Map and chart based on available data from the DWR Water Data Library as of 12/31/2015. Document Name: DOTMAP_F1514_FDRAFT Updated: 1/15/2016 Data subject to change without notice.

Groundwater Level Change* - Fall 2004 to Fall 2014



*Groundwater level change determined from water level measurements in wells. Map and chart based on available data from the DWR Water Data Library as of 06/18/2015. Document Name: F2014_F2004_DM Updated: 06/22/2015
Data subject to change without notice.