

“H”

Water Availability Analysis



CMP Civil Engineering & Land Surveying
1607 Capell Valley Road
Napa, CA 94558
(707) 815-0988
Cameron@CMPEngineering.com
CMPEngineering.com



Water Availability Analysis for the New Life Community Adventist Church

1451 American Canyon Road

American Canyon, CA 94503

APN: 059-100-002

Prepared By:

CMP Civil Engineering & Land Surveying

1607 Capell Valley Road

Napa, CA 94558

(707) 815-0988

Date: 5/4/2016



CMP Civil Engineering & Land Surveying – (707) 815-0988

Table of Contents

Description	Page
• Title Page	1
• Table of Contents	2
• Water Availability Analysis Report	3
• Attachment "A" Wastewater and Water Use Calculations	4 – 11
• Attachment "B" Well Log and Yield Test	12 - 13

Contact Information	
Property Owner:	New Life Community Adventist Church, c/o John Wambaa
Owner Address:	219 Sandy Neck Way Vallejo, CA 94591
Owner Phone:	(707) 373-1106

Site Map

Please see the Use Permit Site Plan for the subject project which has been included with this submittal. The said map shows the proposed water source (existing well) for the proposed church and its proximity to other water sources.

Narrative

This project involves a proposed church located on a 1.83 acre parcel at 1451 American Canyon Road in Napa County. The property owners are proposing to build a church with a maximum of 150 attendees. Services will be held once a week on Saturdays, all other days the church will be vacant except for a possible special event of which a maximum of 4 per year are proposed with a maximum of 250 attendees. There is one existing residence on the property that will be demolished before the church is constructed. There is one 35,000 gallon water tank proposed to serve the church. Of this 35,000 gallons, 28,000 is for fire protection and the remaining 7000 gallons would serve the churches domestic needs. The tank will be filled by an existing onsite well which has a capacity of 5 gallons per minute which is equivalent to 8.07 acre feet per year. The well is located on the general southeast portion of the lot. There is one known neighboring well within the 500 foot setback from the project well. This well is located approximately 195 feet south of the project well across the street. Due to the low proposed water use, the neighboring well is not expected to be affected by the proposed use.

The existing calculated annual water use for the entire property is 0.50 acre feet. This is due to the existing residence on the subject parcel. This existing residence is proposed to be demolished and replaced with the proposed church. After the demolishing of the residence and construction of the church the new water use is expected to be 0.21 acre feet per year. Thus the project is proposing a net decrease in water use of 0.29 acre feet. This decrease in water use will be beneficial to the neighboring well.

Using a worst case scenario groundwater recharge rate of 0.3 acre feet of water use per acre of land the maximum allowed water use for this parcel would be 0.55 acre feet of water per year. Comparing the proposed use of 0.21 acre feet per year to the above 0.55 acre feet value as well as the well capacity value of 8.07 acre feet per year, it is clear that the subject parcel and well has more than enough capacity to serve the proposed use.

Calculations

Please see the attached calculations.

Attachment “A”

Wastewater and Water Use Calculations



CMP Civil Engineering & Land Surveying
1607 Capell Valley Road
Napa, CA 94558
(707) 815-0988
Cameron@CMPEngineering.com
CMPEngineering.com



Winery Wastewater Flow Calculations for the New Life Community Adventist Church

Located at:
1451 American Canyon Road
American Canyon, CA 94503

Date: 5/4/2016

Project # 000177

Legend

Requires Input
Automatically Calculates
Important Value Automatically Calculate
Important Value Requires Input

Hit ctrl + alt + shift + F9 when finished to recalc all formulas

Church Waste Flow Summary

The existing system is designed to treat domestic waste from a church with a maximum of 150 seats. Large events will be serviced by portable temporary bathroom facilities.

Church Domestic Waste Peak Flows

% Water savings from low flow fittings =	20%	percent
--	-----	---------

Typical Saturday (Service Day)

Number of attendees =	80	#
Event people count serviced by this system =	0	#
Attendees estimated domestic waste flow =	448.00	gal/day
Event daily domestic waste flow =	0.00	gal/day
Church Domestic Flow =	448.00	gal/day

Max Attendance Saturday (Service Day)

Number of attendees =	150	#
Event people count serviced by this system =	0	#
Attendees estimated domestic waste flow =	840.00	gal/day
Event daily domestic waste flow =	0.00	gal/day
Church Domestic Flow =	840.00	gal/day

All other days

Number of attendees =	0	#
Event people count serviced by this system =	0	#
Attendees estimated domestic waste flow =	0.00	gal/day
Event daily domestic waste flow =	0.00	gal/day
Church Domestic Flow =	0.00	gal/day

Total Domestic Waste Peak Flows =	840.00	gal/day
-----------------------------------	--------	---------

Church Waste Annual Volume Calculations

Typical Saturday (Service Day)

Number of attendees =	80	#
Attendees estimated domestic waste flow =	448.00	gal/day
Number of Flow Days =	40.00	days/yr
Annual Domestic Waste Volume =	17920	gal/year

Max Attendance Saturday (Service Day)

Number of attendees =	150	#
Attendees estimated domestic waste flow =	840.00	gal/day
Number of Flow Days =	12.00	days/yr
Annual Domestic Waste Volume =	10080	gal/year

All other days

Number of attendees =	0	#
Attendees estimated domestic waste flow =	0.00	gal/day
Number of Flow Days =	313.00	days/yr
Annual Domestic Waste Volume =	0	gal/year

Special Event Visitor Volumes

	visitors	days/yr	flow/day	gallons
Large Events =	250	4	8	8000
Medium Events =	0	0	8	0
Other =	0	0	8	0
Other 2 =	0	0	8	0
Total Annual Event Visitor Waste Volume =	8000			gal/year
Total Annual Church Domestic Waste =	36000			gal/year
			0.11	af/year



CMP Civil Engineering & Land Surveying

1607 Capell Valley Road

Napa, CA 94558

(707) 815-0988

Cameron@CMPEngineering.com

CMPEngineering.com



Water Availability Analysis
for the
New Life Community Adventist Church

Located at:
1451 American Canyon Road
American Canyon, CA 94503

Date: 5/4/2016

Project # 00177

Legend
Requires Input
Automatically Calculates
Important Value Automatically Calculates
Important Value Requires Input

Hit ctrl+alt+shift+F9 when finished to recalc a

WATER AVAILABILITY ANALYSIS- PHASE ONE STUDY			
WATER USE CALCULATIONS FOR EXISTING USE			
RESIDENTIAL	#	FACTOR	AF/YR
PRIMARY RESIDENCES=	1	0.5	0.50
SECONDARY RESIDENCES=	0	0.3	0.00
FARM LBR DWELLING (# OF PPL) =	0	0.06	0.00
		SUB TOTAL=	0.50
NON- RESIDENTIAL CALCULATIONS			
AGRICULTURAL	# ACRE	FACTOR	AF/YR
VINEYARD IRRIGATION ONLY=	0	0.5	0.00
VINEYARD HEAT PROTECTION=	0	0.25	0.00
VINEYARD FROST PROTECTION=	0	0.25	0.00
IRRIGATED PASTURE=	0	4	0.00
ORCHARDS=	0	4	0.00
LIVESTOCK (SHEEP/COWS)=	0	0.01	0.00
		SUB TOTAL=	0.00
WINERY	# GAL	FACTOR	AF/YR
PROCESS WATER=	0	NA	0.00
DOMESTIC AND LANDSCAPING=	0	0.000005	0.00
		SUB TOTAL=	0.00
INDUSTRIAL	# EMPL	FACTOR	AF/YR
FOOD PROCESSING=	0	31	0.00
PRINTING/ PUBLISHING=	0	0.6	0.00
		SUB TOTAL=	0.00
COMMERCIAL	# EMPL	FACTOR	AF/YR
OFFICE SPACE=	0	0.01	0.00
WAREHOUSE=	0	0.05	0.00
		SUB TOTAL=	0.00
EXISTING USE TOTALS			
RESIDENTIAL=	0.50	AF/YR	
AGRICULTURAL=	0.00	AF/YR	
WINERY=	0.00	AF/YR	
INDUSTRIAL=	0.00	AF/YR	
COMMERCIAL=	0.00	AF/YR	
OTHER USAGE (LIST BELOW)			
		AF/YR	
		AF/YR	
		AF/YR	
		AF/YR	
		AF/YR	
		AF/YR	
TOTAL EXISTING WATER USE=	162914	G/YR	
TOTAL EXISTING WATER USE=	0.50	AF/YR	

WATER AVAILABILITY CALCULATIONS FOR EXISTING USE			
WELL NUMBER	Q - GPM	AF/YR	
1	5	8.065	
2		0.000	
3		0.000	
4		0.000	
5		0.000	
TOTAL=	5	8.065	
SPRING NUMBER	Q - GPM	AF/YR	
1		0.000	
2		0.000	
3		0.000	
4		0.000	
5		0.000	
TOTAL=	0	0.000	
TANK #	GAL	AF	
1		0.000	
2		0.000	
3		0.000	
4		0.000	
5		0.000	
TOTAL=	0	0.000	
RESERVOIR #	GAL	AF	
1	0.000		
2	0.000		
3	0.000		
4	0.000		
5	0.000		
TOTAL=	0.000	0	
GROUND WATER RECHARGE	AF/YR/ACRE	PARCEL AC	AF/YR
assumed worst case recharge rate =	0.30	1.83	0.55
TOTAL AVAILABLE WATER =	178880.01	G/YR	
TOTAL AVAILABLE WATER =	0.55	AF/YR	
TOTAL EXISTING WATER USE=	0.50	AF/YR	
REMAINING AVAILABLE WATER =	0.05	AF/YR	

WATER USE CALCULATIONS FOR PROPOSED USE			
RESIDENTIAL	#	FACTOR	AF/YR
PRIMARY RESIDENCES=	0	0.75	0.00
SECONDARY RESIDENCES=	0	0.3	0.00
FARM LBR DWELLING (# OF PPL) =	0	0.06	0.00
		SUB TOTAL=	0.00
NON- RESIDENTIAL CALCULATIONS			
AGRICULTURAL	# ACRE	FACTOR	AF/YR
VINEYARD IRRIGATION ONLY=	0	0.5	0.00
VINEYARD HEAT PROTECTION=	0	0.25	0.00
VINEYARD FROST PROTECTION=	0	0.25	0.00
IRRIGATED PASTURE=	0	4	0.00
ORCHARDS=	0	4	0.00
LIVESTOCK (SHEEP/COWS)=	0	0.01	0.00
		SUB TOTAL=	0.00
WINERY	# GAL	FACTOR	AF/YR
PROCESS & DIMESTIC WATER=	0	NA	0.00
LANDSCAPING=	0	NA	0.00
		SUB TOTAL=	0.00
INDUSTRIAL	# EMPL	FACTOR	AF/YR
FOOD PROCESSING=	0	31	0.00
PRINTING/ PUBLISHING=	0	0.6	0.00
		SUB TOTAL=	0.00
COMMERCIAL	# EMPL	FACTOR	AF/YR
OFFICE SPACE=	0	0.01	0.00
WAREHOUSE=	0	0.05	0.00
		SUB TOTAL=	0.00
PROPOSED USE TOTALS			
RESIDENTIAL=	0.00	AF/YR	
AGRICULTURAL=	0.00	AF/YR	
WINERY=	0.00	AF/YR	
INDUSTRIAL=	0.00	AF/YR	
COMMERCIAL=	0.00	AF/YR	
OTHER USAGE (LIST BELOW)			
CHURCH (SEE WW CALCS)	0.11	AF/YR	
MISC LANDSCAPING	0.10	AF/YR	
		AF/YR	
		AF/YR	
		AF/YR	
TOTAL PROPOSED WATER USE=	68424	G/YR	
TOTAL PROPOSED WATER USE=	0.21	AF/YR	

WATER AVAILABILTY CALCULATIONS FOR PROPOSED USE			
WELL NUMBER	Q - GPM	AF/YR	
1		0.000	
2		0.000	
3		0.000	
4		0.000	
5		0.000	
TOTAL=	0	0.000	
SPRING NUMBER	Q - GPM	AF/YR	
1		0.000	
2		0.000	
3		0.000	
4		0.000	
5		0.000	
TOTAL=	0	0.000	
TANK #	GAL	AF	
1	35000	0.107	
2	0	0.000	
3	0	0.000	
4	0	0.000	
5		0.000	
TOTAL=	35000	0.107	
RESERVOIR #	GAL	AF	
1	0		
2	0		
3	0		
4	0		
5	0		
TOTAL=	0	0.000	
GROUND WATER RECHARGE	AF/YR/ACRE	PARCEL AC	AF/YR
assumed worst case recharge rate =	0.30	1.83	0.55
TOTAL WATER AVAILABLE =	178880.01	G/YR	
TOTAL WATER AVAILABLE =	0.55	AF/YR	
TOTAL PROPOSED WATER USE=	0.21	AF/YR	
REMAINING AVAILABLE WATER =	0.34	AF/YR	

Attachment “B”

Well Log and Yield Test

