

MEMORANDUM



Date: September 25, 2019

To: Judith Rothweiler
7575 Carrisa Hwy
Santa Margarita, CA 93453

From: Shannon Jessica, PE
Wallace Group
612 Clarion Ct.
San Luis Obispo, CA 93401



Subject: Water Use Evaluation for Proposed Cannabis Cultivation (APN: 072-311-008)

The following memorandum has been updated from a previous version, dated July 25, 2019, to reflect changes to the proposed cultivation canopy for consistency with the project description.

Wallace Group has been retained to estimate the water demand for a proposed cannabis cultivation operation in San Luis Obispo County. The proposed cultivation, located at 7575 Carrisa Hwy. in Santa Margarita includes the following:

- Outdoor cultivation – 43,560 square feet of plant canopy
- Indoor cultivation – 22,000 square feet plant canopy
- Nursery/indoor – 5,000 square feet area

The Cannabis Land Use Ordinance for San Luis Obispo County requires that applicants submit a detailed water management plan as part of the application package. The following memorandum has been developed to outline the estimated water demand for the proposed cultivation project.

Published water use values have not been consistently established in the industry. The Central Coast Regional Water Quality Control Board (RWQCB) cannabis development team has referenced an estimate of 0.03 gal/sf canopy/day for outdoor cannabis plants and an application rate of 0.1 gallons per square foot of canopy for indoor cultivation operations. These values are derived from the *Santa Cruz County Draft Environmental Impact Report (EIR) for the Commercial Cannabis Cultivation and Manufacturing Regulations and Licensing Program (August 2017)*¹. In section 3.0, pages 3-16 and 3-17 of the EIR, it is described that the water application rates used are derived from a study in Humboldt County by Milewide Nursery². The Milewide Nursery study includes a breakdown of the per yield water use. The study

¹Santa Cruz County Draft Environmental Impact Report (EIR) for the Commercial Cannabis Cultivation and Manufacturing Regulations and Licensing Program (August 2017)
[http://www.sccoplanning.com/PlanningHome/Environmental/CEQAInitialStudiesEIRs/CannabisRegulationsEnvironmentalReview/CannabisEnvironmentalImpactReport\(EIR\).aspx](http://www.sccoplanning.com/PlanningHome/Environmental/CEQAInitialStudiesEIRs/CannabisRegulationsEnvironmentalReview/CannabisEnvironmentalImpactReport(EIR).aspx)

² <https://humboldtgrower.wordpress.com/2015/05/07/may-2015-humboldt-county-cannabis-water-use-study/>

CIVIL AND
TRANSPORTATION
ENGINEERING

CONSTRUCTION
MANAGEMENT

LANDSCAPE
ARCHITECTURE

MECHANICAL
ENGINEERING

PLANNING

PUBLIC WORKS
ADMINISTRATION

SURVEYING /
GIS SOLUTIONS

WATER RESOURCES

WALLACE GROUP
A California Corporation

612 CLARION CT
SAN LUIS OBISPO
CALIFORNIA 93401

T 805 544-4011
F 805 544-4294

www.wallacegroup.us



based their results on a 90-day cycle and estimate that two growing cycles could be completed in a year for outdoor cultivation, and an estimated 270 days growing season, or 3 cycles per year, for indoor cultivation.

This project includes indoor and outdoor cultivation elements, and the estimated water demand is outlined in Tables 1 and 2. Nursery plants are classified as “indoor” cultivation in the San Luis Obispo County Ordinance and the values provided for nursery irrigation reflect the water application rates associated with indoor irrigation. It should be noted that it is likely that nursery irrigation will be less than the rate applied for larger, mothering plants.

Local evapotranspiration data was used to extrapolate the annual outdoor water use to monthly estimates. The project is not located within the Paso Robles Groundwater Basin and therefore is not subject to a required offset for development. The project is proposed to be built in four phases, however the water use estimates presented in Tables 1 and 2 identify the buildout water demand.

It is recommended that during cultivation operation the monthly water use be monitored and tracked. It is also recommended that the operators pay close attention to water conservation methods including installing low-flow fixtures, utilizing drip irrigation and using recycled water for landscaping, if possible. Reverse osmosis is not proposed for irrigation water.

Table 1: Estimated Annual Water Demand at Buildout			
Use	Rate	Gross Demand (gallons/ year)	Gross Demand (AFY)
Outdoor Cultivation: Hoop House 1 Acre	43,560 sf canopy x 0.03 gal/sf/day x 180 days	235,224	0.72
Indoor Cultivation: Greenhouse	22,000 sf canopy x 0.1 gal/sf/day x 270 days	594,000	1.82
Nursery: Indoor application rate	5,000 sf plant area x 0.1 gal/sf/day x 270 days	135,000	0.41
Estimated Water Demand at Buildout			2.96



Table 2. Estimated Monthly Water Demand for Cannabis Cultivation Operation

Month	ET _o (in)**	Outdoor ET _o (%)	Outdoor Water Use/Month (AF)	Indoor/Green house Water Use/Month (AF)	Total Water Use/Month (AF)
October	3.33	-	-	0.19	0.19
November	2.19	-	-	0.19	0.19
December	1.36	-	-	0.19	0.19
January	1.44	-	-	0.19	0.19
February	1.78	-	-	0.19	0.19
March	2.78	-	-	0.19	0.19
April	3.35	9.5%	0.07	0.19	0.25
May	6.13	17.3%	0.13	0.19	0.31
June	6.15	17.4%	0.13	0.19	0.31
July	8.15	23.0%	0.17	0.19	0.35
August	6.15	17.4%	0.13	0.19	0.31
September	5.47	15.5%	0.11	0.19	0.30
Total Annual	48.27	100%	0.72	2.24	2.96

**Evaporation data from California Department of Water Resources. Nacimiento Dam Station T09 6056 00

Water Supply

The source water for the cultivation operation will be from an existing groundwater well and existing 5,000 gallon above ground water storage tank. Four new 10,000 gallon capacity water storage tanks will be added for irrigation storage. The well is stated to have a capacity of 50 gallons per minute (gpm). A copy of the well driller's log is included in Attachment A. The well has sufficient capacity to meet the daily irrigation demand in less than 2 hours. As stated above, the project location is not within the Paso Robles Groundwater basin, and therefore is not subject to water offset requirements.

California Department of Fish and Wildlife

Because the project will be using an existing groundwater well for water supply, the owner will not need to obtain a General Agreement or Lake or Streambed Alteration (LSA) permit through California Department of Fish and Wildlife (CDFW). However, annual licenses for cannabis cultivation issued by California Department of Food and Agriculture (CDFA) will require the owner to demonstrate by written verification from CDFW that an LSA Agreement is not required. This is accomplished by submitting a



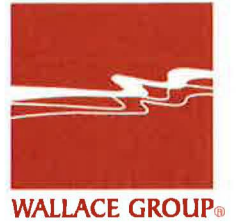
self-certification application on the CDFW webpage and obtaining written correspondence from CDFW verifying that the LSA is not required for this project.

Regional Water Quality Control Board

Some cultivation activities can generate wastewater such as hydroponic solutions, irrigation tail water, and sanitation activities, etc. Typically, wastewater will be discharged either into a community collection system or to an onsite wastewater treatment system (septic tank/leachfield). These activities will be monitored through the Regional Water Quality Control Board for on-site disposal systems.

Regardless of the process wastewater discharge strategy, the RWQCB will require that cultivation operations enroll in the General Waste Discharge Requirements for Waste Associated with Cannabis Cultivation Activities (Cannabis General Order). The Cannabis Policy and General Order apply to commercial cannabis cultivation activities and enrollment in the General Order will be required for all commercial cultivation activities. The tier determination will need to be finalized by the RWQCB once an application has been submitted and reviewed by Board staff.

Coverage under the General Order is obtained by applying through the online application portal on the Regional Water Quality Control Board website. After the application is submitted and the application fee paid, the RWQCB will issue a Notice of Applicability (NOA). The NOA can be presented to the CDFA to obtain a commercial cannabis cultivation license. The application portal is located at: www.waterboards.ca.gov/cannabis.



ATTACHMENT A – WELL DRILLER’S LOG

1/3

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page 1 of 1

Owner's Well No. #1
Date Work Began 1/22/00, Ended 11/22/00
Local Permit Agency San Luis Obispo
Permit No. 2000-446 Permit Date 11/21/00
No. **782438**

DWR USE ONLY --- DO NOT FILL IN ---

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)

DRILLING METHOD **ROTARY** FLUID **AIR**

DEPTH FROM SURFACE		DESCRIPTION <i>Describe material, grain, size, color, etc.</i>
Ft.	to Ft.	
0	2	TOP SOIL
2	14	BROWN SANDSTONE
14	182	REDDISH BROWN SANDSTONE
182	207	BROWN SHALE
207	392	BROWN SANDSTONE
392	400	GREEN SHALE

Air Lift test is only approximate. A Test Pump is recommended for an accurate account.

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

WELL OWNER

Name **Albert Lewis**
Mailing Address **P.O. Box 117**
Templeton **CA** **93465**
CITY STATE ZIP

WELL LOCATION

Address **7575 Hwy 58**
City **Calif. Valley CA**
County **San Luis Obispo**
APN Book **043** Page **141** Parcel **014**
Township **29 S** Range **17 E** Section **25**
Latitude **35 22 39 N** **120 06 11 W**
DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

sketch

ACTIVITY (✓)

☒ NEW WELL

MODIFICATION/REPAIR
☐ Deepen
☐ Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
☒ Domestic ☐ Public
☐ Irrigation ☐ Industrial

MONITORING ☐
TEST WELL ☐
CATHODIC PROTECTION ☐
HEAT EXCHANGE ☐
DIRECT PUSH ☐
INJECTION ☐
VAPOR EXTRACTION ☐
SPARGING ☐
REMEDIATION ☐
OTHER (SPECIFY) ☐

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (FL) BELOW SURFACE **1**

DEPTH OF STATIC WATER LEVEL **177** (FL) & DATE MEASURED **11/25/01**

ESTIMATED YIELD **50** (GPM) & TEST TYPE **Air Lift**

TEST LENGTH **1** (Hrs.) TOTAL DRAWDOWN (FL)

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

DEPTH FROM SURFACE			BORE - HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE		ANNULAR MATERIAL				
				TYPE (✓)				MATERIAL / GRADE			INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE	
Ft.	to	Ft.	BLANK	SCREEN	CON-DUCTOR	FILL PIPE									CE-MENT (✓)
0		240	10	✓				PVC	5	SDR 21		✓			
240		400	10	PERF				PVC	5	SDR 21	.040			✓	Monterey Mix

ATTACHMENTS (✓)

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analysis
☐ Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

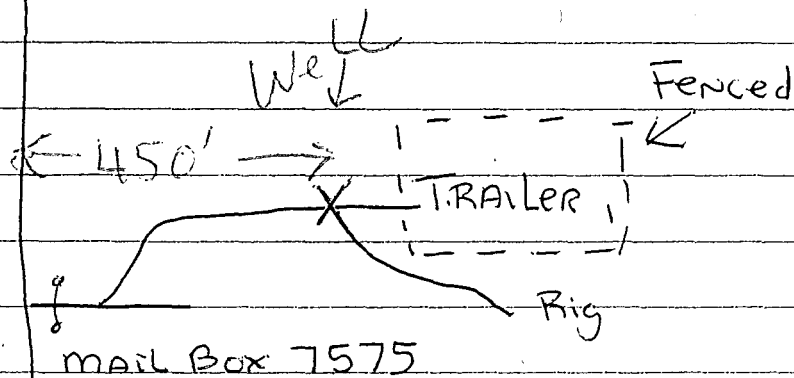
NAME **FILIPPONI & THOMPSON DRILLING**
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
P.O. BOX 845
ADDRESS **ATASCADERO** **CA** **93423**
CITY STATE ZIP
Signed **Neelam Thompson** **05/11/01** **432680**
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

782438 (2/3)

Just Past mile marker
38, mail Box # 7575, Go
Through Gate, make hard
Left, Then Just before
trailer make hard Right
Look For Rig.

Bitterwater

mobile # at site
610-3338.



782438 (3/3)

Albert Lewis

CAPRINO

BITTERWATER

SIMMLER

Well 2101

Well 2056

Storage Bins

BM 2041

BM 1992

BM 2047

Well

Well 2026

BM

McDonald

SYNCLINE HILL

Spring

Spring

SANTA MARGARITA (U.S. 101) 36 MI

690 000 FEET

8000m N.

3 30

16

3922

3921

3917

14

13

18

24

19

26

25

30

26

25

30

36

36

31