September 8, 2021

Ms. Cheryl Forberg
7661 South Highway 29
Kelseyville, CA 95451

RE: WATER AVAILABILITY REPORT
FORBERG PROPERTY
APN 009-022-331
KELSEYVILLE, CA
EBA JOB No. 21-3035

Dear Ms. Forberg:

This Water Availability Report presents the results of a groundwater availability study conducted for the property located at Assessor Parcel Number (APN) 009-022-331 Kelseyville, California (see Figure 1, Appendix A for site location), hereinafter referred to as the project site. The groundwater availability study was implemented to assess groundwater availability as part of the project's proposal to develop one acre (AC) of outdoor commercial cannabis cultivation and approximately 0.5 AC of mixed light indoor cannabis cultivation. The purpose of this study is to determine whether there are adequate existing and future groundwater supplies to accommodate the proposed development demands and to estimate the effects of drawdown, if any, within the designated cumulative impact area. This Report was prepared to meet these objectives.

1.0 BACKGROUND INFORMATION

1.1 Project Description

The existing development property, APN 009-022-331 (Project Site), is approximately 40 AC's. A site plan illustrating the primary site features is presented as Figure 2 (Appendix A). As shown on Figure 2, existing site features include, a 2-bedroom residence, approximately 9 AC of vineyard, and two existing wells (identified herein as "Forberg Well 1" and "Forberg Well 2"). While there are approximately 9 AC of vineyard currently on the project site, approximately 9 AC of the vineyard will be removed during the installation of the proposed cannabis cultivation. Forberg Well 1 is plumbed to an approximate 1,000-gallon aboveground storage tank (AST) and is the primary source of water for the project site. Forberg Well 2 has been drilled on the property but is not included in this assessment. The remainder of the property is undeveloped and characterized by hilly terrain covered with manzanita and live oak. Ground surface elevations across the site range from approximately 1,840 to 2,160 feet above mean sea level (MSL).

As discussed above, the proposed development includes one AC of outdoor cannabis cultivation and approximately 0.5 AC of mixed light indoor cannabis cultivation on the project site parcel (APN 009-022-331). Please refer to Figure 2 (Appendix A) for the proposed cannabis cultivation footprint, locations of Forberg well 1 and 2, and other wells situated within the area of study for this project. Please refer to Appendix B for copies of Water Well Driller's Reports (WWDRs) related to this project.

1.2 Well Information

Water supply for the existing 2-bedroom residence and the proposed cannabis cultivation is and will be serviced by Forberg Well 1 located in the southwest corner of the project site (see Figure 2, Appendix A). Only limited information on this well is available. Water from this well is pumped to the AST, whereupon the water is used for general agricultural and domestic uses. The well yield was calculated in August 2016, during a limited pumping test performed by Tom Strate Water Systems, to be approximately 20 gallons per minute (GPM). The well yield was more recently calculated in August 2021, during an 8-hour pump test performed by Cal-Tech Pump Well & Water Treatment, to be approximately 18.5 GPM (Appendix C). Prior to initiation of the 8-hour pump test, static water level was measured to be 89 feet below top of casing (TOC). Following 8-hours of pumping at an average rate of 18.5 GPM, dynamic pumping level was recorded to be 92.5 feet below TOC. The water supply well recovered to 100 percent 5 minutes after pumping ceased. Pump test data is included herein as Appendix C.

1.3 Local Geology and Hydrogeology

EBA Engineering (EBA) utilized the *Geologic Map and Structure of the Clear Lake Volcanics, Northern California - Map I1262* (USGS, B.C. Hearn. Jr., J.M. Donnelly-Nolan, and F.E. Goff, 1995) for geologic interpretation and review. The map indicates that the project site area is underlain by rocks associated with the Pleistocene Basaltic Andesite of Lower Lake Road (bl), Pleistocene Rhyolite northeast of Mount Olive (rno), Pleistocene Rhyodacite of Mount Olive (dof), and Holocene alluvium (al) which collectively are considered part of the Regional Clear Lake Volcanics. The dominant rock that outcrops at the project site is the Rhyodacite of Mount Olive which forms an extensive flow of porphyritic biotite-hornblende rhyodacite. The Basaltic Andesite of Lower Lake Road overlies the Rhyodacite of Mount Olive. Nonconformably underlying the aforementioned volcanics are either Upper Cretaceous or Upper Jurassic Franciscan Formation or Jurassic Serpentinite. The Franciscan Formation deposits are described as being composed of predominantly chert, greenstone, greywacke, shale, and metamorphic rocks of the blueschist phase, while the Serpentinite is thought to have intruded in areas of faulting.

Based on well construction logs in the area, the Clear Lake Volcanics appear to be greater than 700 feet thick. The Franciscan Formation is assumed to be several thousand feet thick.

The project site lies within the Konocti Bay Fault System which is a series of northwest and southeast trending faults. These faults may either provide hydrogeologic boundary conditions or provide areas with rocks that can be more highly fractured. The interconnection of these fractures, joints, and weathered surfaces within the Clear Lake Volcanics provide the primary aquifer at the project site. The underlying aquifer is thought to be unconfined based on the fracture flow dynamics of groundwater flow in volcanics. The geology observed during EBA's site visit was generally consistent with the USGS findings. Please refer to Figure 3 (Appendix A) for a geologic map of the site vicinity.

According to the Lake County Watershed Protection District's (LCWPD's) *Lake County Groundwater Management Plan*, dated March 31, 2006 (LCWPD, 2006), the project site is located in the Clear Lake Volcanics Groundwater Basin. Within this basin, groundwater yields to wells are highly variable due to nature of the volcanic fracture systems. Volcanic deposits can range from slight to moderate with specific yields ranging from zero to 15 percent. The underlying Franciscan Formation materials, in turn, may provide small quantities of groundwater and typically exhibit specific yield characteristics of less than 3 percent.

1.4 Local Climate

According to the Western Regional Climate Center (WRCC), rainfall at the nearest weather station with historical data is in Clearlake. This weather station has data from 1954 to 2016 and includes average precipitation totals of approximately 27.5 inches per year (http://wrcc.dri.edu/cgi-bin/cliRECtM.pl?ca1806). The mean annual potential evapotranspiration (ET_o) for the Lower Lake area is estimated to be approximately 45.5 inches per year based on Reference ET_o Tables provided in Appendix A of Title 23 of the California Code of Regulations (23CCR), Chapter 2.7 (http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf).

2.0 RESEARCH

The following subsections provide a summary of the scope of research performed and the corresponding findings used to implement the hydrogeologic assessment. Please note that references are made herein to the cumulative impact area for this study. A description of the cumulative impact area is presented in Section 3.0 of this report.

2.1 Site Reconnaissance

EBA conducted a site reconnaissance of the property on February 13, 2017 for a previous water availability report (EBA, 2017) submitted to the client in 2017. The purpose of the site reconnaissance was to observe existing site features, site topography, local geology, location of existing wells, measurements of depths to groundwater, etc. At the time of the site reconnaissance, the existing property use and features were generally consistent with those described in Subsection 1.1 (*Project Description*) of this report. As previously noted, the undeveloped portions of the property are characterized by hilly terrain covered

with live oak and manzanita. No major surface water features were observed during the site reconnaissance.

During the 2017 reconnaissance, EBA observed the locations of two (2) wells on the project site. These two (2) wells are identified as Forberg Well 1 and Forberg Well 2. Please refer to Figure 2 for the respective locations of these wells. Documented information related to the well construction is not available on either well. Forberg Well 1 is reportedly 109 feet deep while Forberg Well 2 was measured to be approximately 220 feet deep. At the time of the reconnaissance, depth to water was measured to be 111.50 feet from top of casing in Forberg Well 2. Forberg Well 1 was not accessible for depth to water measurements.

The 2017 reconnaissance also encompassed the observance of neighboring properties to establish the nature of nearby developments and property uses. Please be advised that due to the rural nature of the property and limited public access, visual observations were limited to what could be seen from the property line (where readily accessible), or at a distance from Highway 29 and Highway 175. In general, most of the properties in all directions from the project site were comprised of rural properties.

The site reconnaissance was supplemented with review of Google aerial imagery for the area. Findings from this research was generally consistent with the above findings.

2.2 Water Well Driller's Reports (WWDRs)

WWDRs maintained by CDWR were reviewed by EBA for a previous 2017 water availability report (EBA, 2017) to obtain pertinent information for the area regarding water supply use, well completion depths, yields, etc. The scope of the CDWR research encompassed available records for wells located within Sections 4, 5, and 6 of Township 12 North (T12N), Range 8 West (R8W) and Sections 19 and 20 and Sections 28 through 33 of T13N, R8W, Mount Diablo Baseline and Meridian. The off-site search radius was set at approximately one to two miles of the project site property boundary as a means of obtaining available information representative of the local hydrogeologic conditions. The results of this research identified 91 WWDRs or boreholes (multiple logs for some properties), of which none corresponded to locations on the property associated with the project site, 15 of which corresponded to off-site locations within the designated cumulative impact area (see Section 3.0 for definition), 68 of which corresponded to locations outside of the cumulative impact area, and 8 of which an accurate location could not be determined.

For this current Report, EBA reviewed WWDRs to obtain pertinent information regarding the installation of new wells in the vicinity of the project site since the completion of EBA's 2017 water availability report. Based on out review, it appears as if no new wells have been installed in the vicinity of the project site since 2017. Table 1 below provides a summary of the well/borehole and water supply characteristics for wells located within the cumulative impact area in which WWDRs were available:

TABLE 1
RESULTS FROM WWDR RESEARCH

Description	*Project-Site*	*Off-Site*
Number of Water Supply Wells	2	15
Number of Dry Holes	0	3
Drilling Depths (feet BGS)	109-220[(1)]	110 to 700
Static Groundwater Levels (feet BGS)	93 to 112	45 to 580[(2)]
Reported Yields (GPM)	18.5	3 to 100[(2)]
Specific Capacity (GPM/ft)	3.6	.1 to 1.0

WWDR: Water Well Driller's Report
BGS: Below Ground Surface
GPM: Gallons per Minute
GPM/ft: Gallons per Minute per Foot of Drawdown

(1) Total drilling depths are assumed from field measurements and pumping test data.

(2) Does not include the WWDRs that had incomplete information for the respective measurement.

As presented in Table 1, the reported yield for the project site well (Forberg Well 1) is 18.5 GPM. Please be advised that the breakdowns provided above should be considered estimates based on interpretation of the WWDR information. Please refer to Figure 2 (Appendix A) for a map of the WWDR locations within the cumulative impact area.

2.3 Assessor's Parcel Maps

County assessor's parcel maps for the area were reviewed to assist in identifying property boundaries and addresses. This information, in turn, was used to establish the number of properties within the designated cumulative impact area (described in Section 3.0) for this study. Findings from this exercise identified 29 properties ranging in size from approximately 1.4 to 810 AC. Of these properties, only one (1) is associated with the project site.

3.0 CUMULATIVE IMPACT AREA

The "cumulative impact area" (CIA) as defined for this study corresponds to the change in a specific area resulting from the incremental impact of the project when added to other existing groundwater uses in the area. Based on this criterion, existing development characteristics for surrounding properties were considered, coupled with the site hydrogeology and the nature of the proposed expansion, to estimate the CIA for the proposed project.

An important consideration in establishing the CIA for this project is the local topography and hydrogeology. In this regard, the northern, eastern, western, and southern

boundaries of the CIA are delineated by topographic ridges that define the local watershed. Please refer to Figure 2 (Appendix A) for an illustration of the established CIA as defined above. Based on the stated boundary designations, the overall size of the CIA is approximately 721 AC and encompasses 29 rural properties (including the project site).

Please note that the CIA defined above includes primarily Clear Lake Volcanics with some minor alluvial areas. Based on the geologic map for the area (see Figure 3, Appendix A), it is estimated that the entire CIA is underlain by Clear Lake Volcanics. Although the northern portion of the CIA may also encompass alluvial materials (poorly sorted deposits of silty clay, clayey gravel, sand and gravel), its relative percentage is negligible as compared to the Clear Lake Volcanics. As a result, Clear Lake Volcanic aquifer characteristics were utilized for this area in the analyses presented in the following sections.

It should be noted that the drainage basin represented by the CIA appears to have no outlet for runoff. Precipitation within the area appears to accumulate into seasonal ponds or vernal pools.

4.0 SUMMARY OF EXISTING / PROJECTED GROUNDWATER USE

The following subsections provide a general synopsis of both the existing and projected water uses (including groundwater) associated with the proposed development, as well as estimates of the off-site groundwater use on adjoining and nearby properties located within the CIA. Please also note that the property includes two (2) wells, however, only Forberg Well 1 will be utilized for water usage.

4.1 Project Site Water Usage

Existing Project Site Water Usage

The current water usage at the project site corresponds to servicing a 2-bedroom residence. While there are approximately 9 AC of vineyard currently on the project site, approximately 9 AC of the vineyard will be removed during the installation of the proposed cannabis cultivation. Therefore, the 9 AC of vineyard are not included in the existing project site water usage. For the purpose of this analysis, the estimated water usage for the 2-bedroom residence is as follows:

- 2-Bedroom Dwelling [1]: 0.5 AF/yr[(1)]
- Dwelling Incidental Use [1]: 0.25 AF/yr[(2)]

Total: *0.75 AF/yr*

[(1)]: Based on unit usage rate of 0.25 AF/yr per bedroom.

[(2)]: Based on unit usage rate of 0.25 AF/yr per dwelling unit. Incidental uses may include landscaping, pool, and/or second unit.

The respective water uses equate to a total existing annual water use for the project site of 0.75 AF/yr. As previously discussed, the project site water supply well (Forberg Well 1) provides all existing groundwater usage.

Future Project Site Water Usage

The future water usage will include water for one AC of outdoor commercial cannabis cultivation, approximately 0.5 AC of mixed light indoor cannabis cultivation, and approximately 12,160 square feet of cannabis processing area. The outdoor cultivation, indoor cultivation, and processing area will be completed in one general area (see Appendix A [Figure 2] and Appendix D). Information regarding restrooms and hand washing stations provided for any employees was not provided. A water use estimate was prepared by the Client for the proposed cannabis cultivation project. Please refer to the water use management plan (see Appendix E) submitted by the Client for the water use estimate (1,106,731 gallons or 3.4 AF/yr) for the proposed cannabis cultivation project.

The total anticipated future on-site water use, following the proposed outdoor cannabis development, equates to approximately 4.15 AF/yr, or 1,351,160 gallons per year (GPY). As previously discussed, existing water usage (0.75 AF/yr) and all future water use (4.15 AF/yr) will be provided by Forberg Well 1 located in the southwest corner of the project site (see Figure 2, Appendix A).

4.2 Cumulative Impact Area Existing and Future Groundwater Use

Existing

The CIA established for this project encompasses approximately 28 off-site rural properties that are not part of the project site. Identified uses on these properties include multiple single-family dwellings, and vineyards, and some dry farmed walnut orchards. It is reasonable to assume that each of these properties are serviced by a water supply well.

In regards to groundwater use, the amount of existing groundwater extraction for the various properties was estimated based on the nature of site development as determined from the site reconnaissance and review of aerial images, size of dwellings as determined from assessor's information, and the employment of estimated unit usage rates for specific types of development. Where the CIA boundary does not fully encompass a parcel that contains a dwelling unit, the corresponding water use was included regardless of the dwelling unit's and/or water supply well's location. For cases in which parcel data did not indicate an associated residence but a structure was observed in aerial imagery, EBA assumed the structure consisted of a three-bedroom residence and applied the residential unit rate use factors described below to estimate associated water usage. Additionally, future water use estimations for a two-bedroom residence were assumed for undeveloped and residentially zoned properties to account for potential future

groundwater usage. The following provides a breakdown of the estimated groundwater extraction sources and volumes:

- 1-Bedroom Dwelling [3]: 0.75 AF/yr[(1)]
- 2-Bedroom Dwelling [4]: 2.0 AF/yr[(1)]
- 3-Bedroom Dwelling [8]: 6.0 AF/yr[(1)]
- 4-Bedroom Dwelling [1]: 1.0 AF/yr[(1)]
- 5-Bedroom Dwelling [1]: 1.25 AF/yr[(1)]
- Dwelling Incidental Use [17]: 4.25 AF/yr[(2)]
- Vineyard Irrigation: 80.0 AF/yr[(3)]
- Walnuts: 0.23 AF/yr[(4)]
- *Total:* *95.5 AF/yr*

(1): Based on unit usage rate of 0.25 AF/yr per bedroom.
(2): Based on unit usage rate of 0.25 AF/yr per dwelling unit. Incidental uses may include landscaping, pool, and/or second unit.
(3): Based on unit usage rate of 0.5 AF/yr per AC of vineyard (160 AC total).
(4): Assumed based on dry farming techniques with a unit rate of 0.01 AC/yr (23 AC total).

Future

The following provides a breakdown of the estimated groundwater extraction sources and volumes for the future groundwater use within the CIA:

- 2-Bedroom Dwelling [11]: 5.50 AF/yr[(1)]
- Dwelling Incidental Use [11]: 2.75 AF/yr[(2)]
- *Total:* *8.25 AF/yr*

(1): Based on unit usage rate of 0.25 AF/yr per bedroom.
(2): Based on unit usage rate of 0.25 AF/yr per dwelling unit. Incidental uses may include landscaping, pool, and/or second unit.

Based on the methodology described above, existing and future off-site groundwater usage within the CIA was estimated to be 96.2 AF/yr (includes 0.75 AC/yr for existing project site water usage) and 8.25 AF/yr, respectively (i.e. a total of approximately 104.5 AF/yr of off-site usage accounting for both existing and future groundwater usage). As previously discussed, a total of 4.15 AF/yr of water usage was estimated for the project site following the proposed outdoor cannabis cultivation. As such, the total projected future groundwater demand for the entirety of the CIA is approximately 108 AF/yr.

5.0 GROUNDWATER AVAILABILITY ANALYSIS

As outlined in the introduction of this report, the primary objectives of the groundwater availability analysis were to evaluate whether there are adequate existing and future

groundwater supplies to accommodate the proposed project and to estimate the effects of drawdown within the designated CIA. The following subsections address each of these issues.

5.1 ***Groundwater in Storage***

The storage capacity for the CIA was estimated for a previous 2017 water availability report (EBA, 2017) by multiplying the volume of the aquifer by its specific yield or secondary porosity volume. In this regard, the area was estimated based on information shown on the geologic map (Figure 3), findings from the site reconnaissance, and WWDR information. The aquifer thickness, in turn, was based on the average static groundwater level in the units based on WWDR logs from locations within the CIA and the average aquifer depth, which was calculated from producing water supply wells. Finally, the aquifer's specific yield or secondary porosity volume was conservatively estimated based on documented literature values for fractured volcanics and tuff. For example, in 90 independent samples, the arithmetic mean of the specific yield of a volcanic tuff was 21 percent (Weight and Sonderegger, 2000; Anderson and Woessner, 1992). As previously mentioned, the LCWPD estimated the specific yield of the Clear Lake Volcanics to be between 0 and 15 percent (LCWPD, 2006). Based on this information, EBA chose a conservative value of 7 percent for the estimated specific yield. The storage capacity was then calculated by multiplying the respective variables. The following provides a breakdown of the calculations:

Clear Lake Volcanics

- Aquifer Area: 721 AC
- Average Static Groundwater Level: 267 feet BGS
- Average Aquifer Depth: 356 feet BGS
- Average Aquifer Thickness: 89 feet
- Specific Yield/Secondary Porosity: 7.0 percent
- Calculated Storage Capacity: 4,492 AF

Based on the above calculations, the total estimated volume of groundwater in storage within the CIA equates to approximately 4,492 AF. As presented in Subsection 4.1 (*Project Site Water Usage*), the additional groundwater supply requirement for the 1.5 AC of outdoor cannabis cultivation is estimated at 3.40 AF/yr. This incremental increase represents less than one percent of the groundwater estimated to be in storage within the CIA. Overall, the combined on-site and off-site water use (future and existing) for the entirety of the CIA of approximately 108 AF/yr equates to less than three percent of the estimated groundwater in storage.

5.2 Project Site Groundwater Recharge Analysis

A general estimate of water balance was determined by comparing groundwater recharge characteristics to the projected on-site groundwater use. In this regard, the groundwater recharge estimate for the project site area was calculated by assuming that precipitation

represents the primary source of potential inflow into the underlying aquifer, and evapotranspiration represents the primary outflow variable. Whereas other secondary sources of inflow (i.e., groundwater inflow from upgradient boundaries, recharge from irrigation, etc.) and outflow (i.e., canopy interception, groundwater outflow along downgradient boundaries, discharge from surface springs, etc.) contribute to the overall groundwater recharge characteristics, these secondary sources were assumed to be relatively equal, resulting in no net gain or loss. Based on this approach, the following equation was used to calculate potential groundwater recharge:

$$\textit{Volume of Water Available for Recharge} = P - (R + ET_a + E_{CI} + S)$$

where "P" is equal to precipitation (in AF/yr), "R" is equal to run-off (in AF/yr), "ET_a" is equal to actual evapotranspiration (in AF/yr), "E_{CI}" is equal to evaporative losses related to canopy interception (in AF/yr), and "S" is equal to spring flow (in AF/yr). The groundwater recharge analysis was performed during average rainfall years and during drought conditions assuming 60 percent of average rainfall. Project specific groundwater recharge potential was then calculated assuming a recurrence interval of the drought scenario of once every five years. The methodology used to calculate each of these variables is described below.

Precipitation (P)

The total volume of precipitation that falls within the project site area was calculated by multiplying the annual precipitation rate (27.5 inches per year) by the size of the project site area (40 AC). The total annual precipitation over this area corresponds to 91.6 AF/yr during average precipitation years and 55.0 AF/yr during the assumed drought scenario.

Run-off (R)

The percentage of the total precipitation that results as outflow (i.e., run-off) was estimated by comparing the ground slopes within the project site area to type curves for various surfaces (Sonoma County Water Agency, 1983). In general, the majority of the ground slopes within the project site area are greater than 20 percent. As a conservative measure, all 40 AC in the project site area were assumed to have this slope. The corresponding run-off coefficient (i.e., percent of precipitation that results as run-off) for this slope conditions are 0.45. The run-off coefficient was then multiplied by the percentage of the annual precipitation volume that falls within each area to determine the annual outflow run-off volume. The average annual run-off volume was calculated to be approximately 41.2 AF/yr during average precipitation years and 24.7 AF/yr during the assumed drought scenario.

Actual Evapotranspiration (ET_a)

As previously noted in Subsection 1.4 (*Local Climate*), the mean annual potential evapotranspiration (ET_o) for the area is estimated to be 45.5 inches per year, which translates to a total ET_o volume of approximately 152 AF/yr within the project site. Actual

Evapotranspiration (ET_a) in turn, was calculated using the Water Use Classification of Landscape Species (WUCOLS) site specific model as described in *A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California* (UC Cooperative Extension, 2000). Factors resulting in each landscape coefficient (K_S, K_D, and K_{MC}) were based on a combination of observations made during the site visit and review of aerial photography. Landscape coefficients (K_L) were multiplied by respective unit areas to determine an estimated ET_a for these vegetation types within the project site parcel. ET_a for each growth stage of cannabis cultivation was calculated based on the duration of each growth stage and the recommended landscape coefficient (K_L) as described in *Estimation of Water Requirement and Crop Coefficient for Hemp at Different Growth Stages* (Noghabi et al., 2020).

The total ET_a within the project site was calculated to represent approximately 27.6 AF/yr. While it is acknowledged that ET_a generally decreases during drought conditions, for the purpose of the following recharge calculations the estimation of ET_a for average precipitation years was also applied to the assumed drought scenario. As such, the estimated ET_a for the drought scenario should be considered highly conservative in nature.

Canopy Interception (EC_I)

Canopy interception corresponds to the fraction of rainfall that is intercepted by the canopy of trees and shrubs and subsequently lost to evaporation. This fraction was estimated using equations developed by Helvey and Patric (Helvey & Patric, 1965) that utilize gross rainfall, throughput (i.e., rainfall that reaches the ground through spaces in the vegetative canopy and as drip from leaves, twigs and stems), and stemflow (i.e., rainfall that is caught on the canopy and reaches the ground by running down stems). The calculation excluded grassland and access roads as the fraction of canopy interception for these areas is assumed to be negligible or not applicable. All other areas within the project site were subjected to canopy interception losses. Canopy interception loses were calculated to be approximately 3.46 AF/yr during average precipitation years and 2.08 AF/yr during the assumed drought scenario.

Springs

The CIA is located within an enclosed basin. Because the drainage basin represented by the CIA appears to have no outlet for runoff, spring flow discharge in the area was not included in the groundwater recharge analysis. However, it should be noted that run-off was still calculated in the water budget as not being available for recharge as a conservative measure.

Water Budget Results

Using each of the calculated variables in the groundwater recharge equation, the corresponding estimated volume of water available for groundwater recharge in the area of the project site during average precipitation years is approximately 19.30 AF/yr. Annual

recharge potential during the assumed drought scenario (60 percent of average precipitation) was calculated to be approximately 0.53 AF/yr. As previously discussed, EBA estimated average groundwater recharge by assuming a recurrence interval of the assumed drought condition of once every five years. Results of these calculations indicate a project site-specific average groundwater recharge potential of approximately 15.5 AF/yr. The future project site water demand (4.15 AF/yr) represents approximately only 26.8 percent of this volume. Additionally, a positive water budget exists under the future use scenario in average precipitation years and the assumed drought scenario.

A summary of the groundwater recharge calculations under average precipitation years as well as the assumed drought scenario is provided in Table 6 below. Table 7, on the following page, provides a summary of the site-specific average recharge potential which was calculated assuming a recurrence interval of once every five years for the assumed drought scenario.

TABLE 6
PROJECT SITE GROUNDWATER RECHARGE CALCULATIONS
AVERAGE RAINFALL AND DROUGHT SCENARIOS

Description	***Inflow/Outflow***	***Volume (AF/yr) Average Precipitation***	***Volume (AF/yr) Drought Scenario***
Precipitation	Inflow	+91.6	+54.9
Run-off	Outflow	-41.2	-24.7
Actual Evapotranspiration	Outflow	-27.6	-27.6
Canopy Interception	Outflow	-3.5	-2.1
Springs	Outflow	-0.0	-0.0
TOTALS	**-**	***+19.3***	***+0.53***

TABLE 7 PROJECT SITE GROUNDWATER RECHARGE CALCULATIONS ASSUMING DROUGHT SCENARIO RECURRENCE INTERVAL OF FIVE YEARS		
Description	***Inflow/Outflow***	***Volume (AF/yr)***
Precipitation	Inflow	+84.3
Run-off	Outflow	-37.9
Actual Evapotranspiration	Outflow	-27.6
Canopy Interception	Outflow	-3.2
Springs	Outflow	-0.0
TOTAL GROUNDWATER RECHARGE	**-**	***+15.6***
GROUNDWATER RECHARGE PER PARCEL ACRE	**-**	***+0.39***

5.3 Cumulative Impact Area Groundwater Recharge Analysis

An estimate of groundwater recharge potential for the entirety of the CIA was also developed under the proposed future use scenario. The estimate of groundwater recharge potential for the CIA was performed using consistent procedures and methodologies as described above in Subsection 5.2. It should be noted that for vineyard within the CIA, ET_c (Crop Evapotranspiration) was calculated in general accordance with methodologies described in the *California Crop and Soil Evapotranspiration for Water Balances and Irrigation Scheduling/Design* (CDWR, 2003). A vineyard crop density of 60 percent cover was assumed. The reference crop evapotranspiration value for this crop type, density, and region is 27.23 inches per year during typical years (Table 5, Zone 8), and 25.67 inches per year during dry/drought years (Table 31, Zone 8). The evapotranspiration demand is provided by the evapotranspiration from effective precipitation in addition to evapotranspiration from applied water. As such, the amount of applied water for the vineyard (assumed to be 0.5 AF/yr per AC of vineyard) was subtracted from the reference crop evapotranspiration value (CDWR, 2003) to yield a unit crop evapotranspiration value due to effective precipitation alone (unit ET_c). Note the unit ET_c equates to the volume of precipitation across the project site parcels that will be lost by evapotranspiration and not available for groundwater recharge. ET_a for proposed vineyard was calculated by multiplying the unit ET_c by the associated acreage of vineyard. These calculations for vineyard ET_a were performed during average precipitation years as well as during drought years. Summary tables of the resulting groundwater recharge calculations is provided in Table 8 and Table 9 on the following page.

TABLE 8 CUMULATIVE IMPACT AREA GROUNDWATER RECHARGE CALCULATIONS AVERAGE RAINFALL AND DROUGHT SCENARIOS			
Description	***Inflow/Outflow***	***Volume (AF/yr) Average Precipitation***	***Volume (AF/yr) Drought Scenario***
Precipitation	Inflow	+1,651.1	+990.7
Run-off	Outflow	-743.0	-445.8
Actual Evapotranspiration	Outflow	-571.7	-552.6
Canopy Interception	Outflow	-85.2	-51.1
Springs	Outflow	-0.0	-0.0
TOTALS	**-**	***+251.2***	***-58.8***

TABLE 9 CUMULATIVE IMPACT AREA GROUNDWATER RECHARGE CALCULATIONS ASSUMING DROUGHT SCENARIO RECURRENCE INTERVAL OF FIVE YEARS		
Description	***Inflow/Outflow***	***Volume (AF/yr)***
Precipitation	Inflow	+1,519.0
Run-off	Outflow	-683.6
Actual Evapotranspiration	Outflow	-567.9
Canopy Interception	Outflow	-78.4
Springs	Outflow	-0.0
TOTAL GROUNDWATER RECHARGE	**-**	***+189.1***

5.4 Maximum Daily Demand, Pumping Duration, and Recovery Data

Maximum daily demand (MDD) was estimated based on the water usage described in Section 4.1 (*Project Site Water Usage*) of this report. The MDD for Forberg Well 1 was calculated to be 11,528 gallons per day (GPD). The 11,528 GPD was estimated by dividing the water use estimated by the Client for the growing season for the proposed cannabis cultivation project (1,106,731 gallons) by the number of days in an accepted cannabis growing season (96 days). This 96-day growing season was acquired from a conversation with a Lake County Water Resources Engineer, Yuliya Ostevoa. Based on a well yield of 18.5 GPM, the MDD would correlate to approximately 623 minutes (approximately 10 hours) of pumping per day. The pump test conducted in August 2021 demonstrated that after pumping approximately 8,880 gallons over 480 minutes, the well recovered to 100 percent after 5 minutes. The available data suggests Forberg Well 1 is capable of reaching 100 percent daily recovery under a MDD scenario. However, it is important to note that the pump test duration (480 minutes) was less than under a MDD

scenario (623 minutes). Accordingly, any conclusions or assessment on well recovery under a MDD scenario assume that the August 2021 pump test and recovery data are generally representative of long-term pumping conditions.

5.5 Distance Drawdown Modeling

EBA prepared a distance-drawdown model under the maximum daily demand pumping scenario using data provided from the August 2021 pump test. EBA estimated the radius of influence from the projected groundwater pumping rate based on a distance-drawdown model developed in Microsoft® Excel. The distance-drawdown model uses methodology described by Theis (1935) (Equation 1).

$$S = \frac{Q}{4\pi T}\int_u^\infty \frac{e^{-u}}{u}du \ , \ u = \frac{r^2 S}{4Tt}, \ \int_u^\infty \frac{e^{-u}}{u}du \ = w(u) \qquad \text{(Equation 1)}$$

where s = drawdown (feet)
Q = flow rate (cubic feet per day)
T = transmissivity (square feet per day)
t = time (days)
S = storativity
r = radial distance from extraction well (feet)
w = the well function
u = the Boltzman variable

The corresponding results from the calculation indicated a transmissivity value of 9,250 GPD/ft. A site-specific aquifer storage coefficient was estimated using the distance-drawdown analytical computer model described above. In essence, the pumping test outlined in the previous paragraph was simulated using the analytical computer model and 80 percent of the calculated transmissivity value (7,400 GPD/ft) to account for well efficiency. Using the same pumping rate (18.5 GPM) and pumping duration (623 minutes) from the recent pumping test, the aquifer storage coefficient variable in the model was adjusted until the predicted drawdown matched the actual drawdown from the pumping test. The findings from this exercise yielded an aquifer storage coefficient value of 9.5 x 10^{-2}.

The radius of influence evaluation was performed using the Theis equation which was based on the duration of pumping necessary to meet the maximum daily demand for Forberg Well 1 under the water use estimate proposed by the client for cannabis cultivation. The radius of influence under the MDD scenario was estimated to be approximately 140 feet based on a pumping duration of 0.43 days, or 623 minutes. This value represents where the modeled cone of depression from groundwater extraction reaches a point where there is zero drawdown. There are no surface water bodies located within the CIA. The nearest off-site water supply well is located approximately 500 feet to the west from Forberg Well 1. Based on the available data and the distance drawdown evaluation described herein, including the associated assumptions for both the drawdown model and the well characteristics implied from the pump test, the pumping regiment

under the maximum daily demand scenario appears unlikely to result in appreciable drawdown in off-site water supply wells.

6.0 CONCLUSIONS

The following presents the main conclusions drawn from this Study:

- Water demand for the proposed cannabis cultivation is estimated to be 3.40 AF/yr. Based on the existing water demand of 0.75 AF/yr for residential purposes, this corresponds to a total future project site water usage of approximately 4.15 AF/yr.

- The total estimated volume of groundwater in storage within the CIA equates to approximately 4,492 AF/yr. Based on the water demand for the proposed outdoor cannabis cultivation of 3.40 AF/yr, this incremental increase represents less than one percent of the groundwater estimated to be in storage within the CIA. Overall, the combined on-site and off-site water use (future and existing) of approximately 108 AF/yr for the entirety of the CIA also equates to less than three percent of the estimated groundwater in storage.

- EBA estimated average groundwater recharge by assuming a recurrence interval of the assumed drought condition of once every five years. Results of these calculations indicate a project site-specific average groundwater recharge potential of approximately 15.5 AF/yr. The future project site water demand of 4.15 AF/yr (existing and future use) represents approximately only 26.8 percent of this volume. Additionally, a positive water budget exists under the future use scenario in average precipitation years and the assumed drought scenario (groundwater recharge calculations of 19.3 and 0.53 AF/yr, respectively).

- The maximum daily demand for Forberg well 1 was calculated to be 11,528 GPD. Based on a well yield of 18.5 GPM, the maximum daily demand would correlate to 623 minutes of pumping per day. Based on review of the August 2021 pump test data (Appendix C), Forberg well 1 recovered to 100 percent of original static water level after 5 minutes. The available data suggests Forberg Well 1 is capable of reaching 100 percent daily recovery under a MDD scenario (623 minutes). It should be noted that the static water level and well yield in Forberg well 1 has remained generally consistent from the date of the limited pump test in August 2016 to the most recent 8-hour pump test in August 2021 (during a drought).

- Results of the distance drawdown modeling performed using the August 2021 pumping test data suggest a radius of influence (i.e., the point where the modeled cone of depression from groundwater extraction reaches a point where there is zero drawdown) of approximately 140 feet. Based on the distance from the project site well (Forberg Well 1) to the nearest off-site well (approximately 500 feet), the

pumping regiment under the maximum daily demand scenario appears unlikely to result in appreciable drawdown in off-site water supply wells.

- The Urgency Ordinance approved by the Lake County Board of Supervisors on July 27th, 2021 (Ordinance No. 3106) requires applicants to provide a plan depicting how the applicants plan to reduce water used during a declared drought emergency. The proposed cannabis cultivation operation of one AC of outdoor cannabis and approximately 0.5 AC of mixed light indoor cannabis will have an estimated annual water usage of 3.40 AC or 1,106,731 gallons. In response to current and future drought declarations, proposed water usage for the project site has been reduced. Proposed water usage for the project site has been reduced by the cessation of proposed improvements (i.e., 27 AC of vineyard, a winery, and a tasting room).

7.0 LIMITATIONS

This report was prepared in accordance with generally accepted standards of professional hydrogeologic consulting principles and practices at the place and time this study was performed. This warranty is in lieu of all other warranties, either expressed or implied. The conclusions presented herein are based solely on information made available to us by others, and includes professional interpretations based on limited research and data. Based on these circumstances, the decision to conduct additional investigative work, including a longer duration pumping test, to substantiate the findings and conclusions presented herein is the sole responsibility of the Client. This report has been prepared solely for the Client and any reliance on this report by third parties shall be at such party's sole risk.

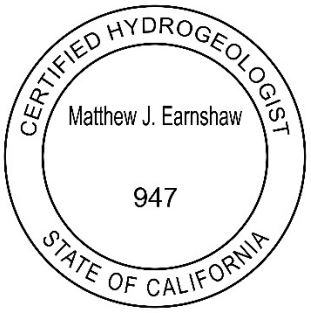
8.0 CLOSING

EBA appreciates the opportunity to be of service to you on this project. If you should have any questions regarding the information contained herein, please do not hesitate to contact our office at (707) 544-0784.

Sincerely,
EBA ENGINEERING

Ian Penn
Staff Geologist

Matthew J. Earnshaw, P.G., C.Hg., QSD
Vice President - Senior Geologist



Appendices: Appendix A – Figures
Appendix B – Water Well Drillers Reports (WWDR)
Appendix C – Well Test Report
Appendix D – Cannabis Cultivation and Processing Area
Appendix E – Water Use Management Plan

9.0 REFERENCES

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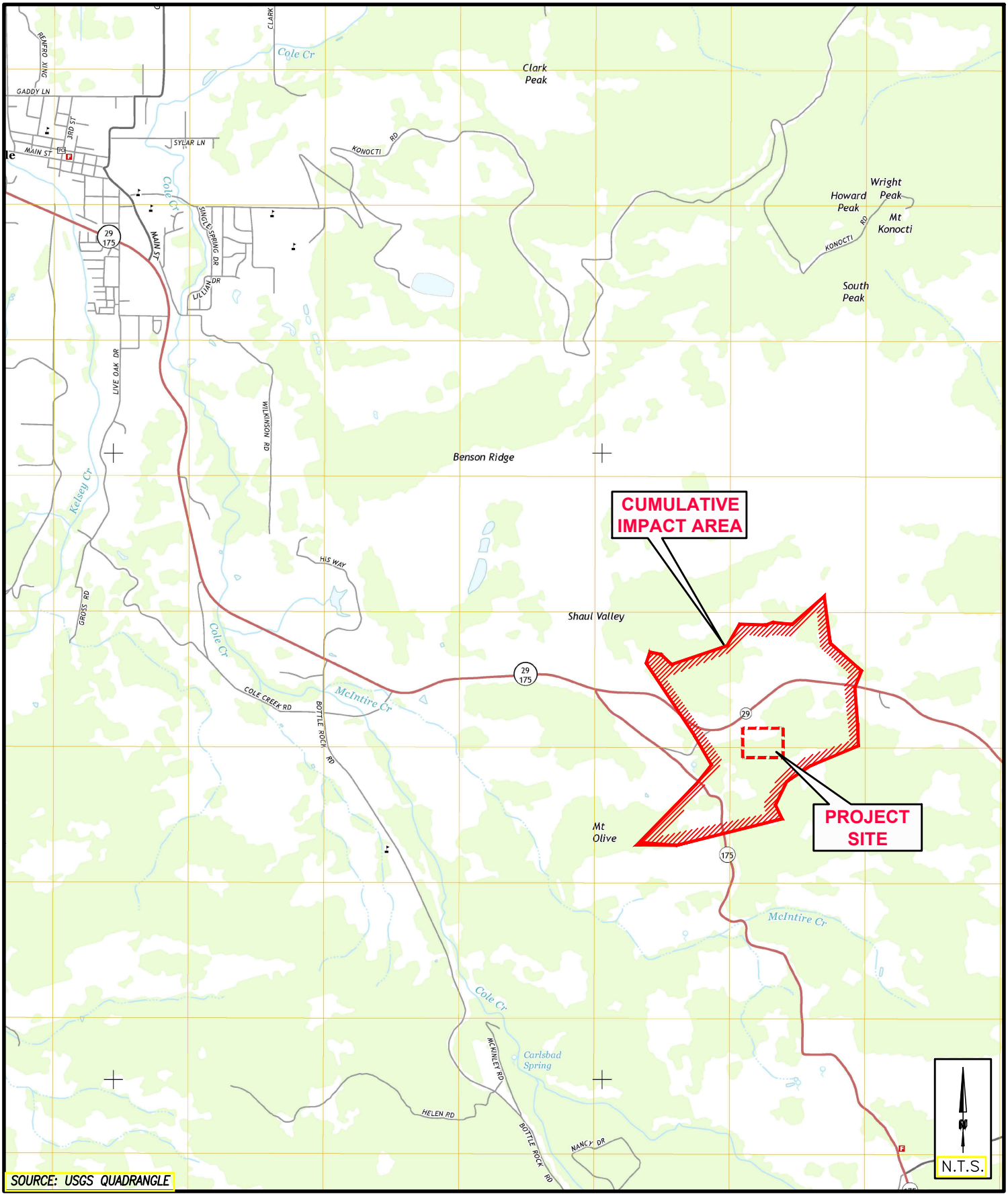
APPENDIX A

FIGURES



EBA ENGINEERING
825 SONOMA AVENUE
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784

LOCATION MAP

7661 HWY 29
KELSEYVILLE, CALIFORNIA

FIGURE
1
15-2397

Q:\2397\Location Maps.dwg, Location Map, 3/13/2017 11:51:27 AM

FIGURE 2

15-2397

CUMULATIVE IMPACT AREA

7661 HWY 29
KELSEYVILLE, CALIFORNIA

APN 009-022-11
APN 009-025-02
CUMULATIVE IMPACT AREA
APN 009-022-16
APN 009-022-15
APN 009-022-17
APN 009-022-21
APN 009-022-31
APN 009-022-84
APN 009-022-22
APN 009-022-35
APN 009-022-79
APN 009-022-80
APN 009-022-81
APN 009-022-36
APN 009-022-37
APN 009-022-32
HWY 175
APN 009-024-07
APN 009-024-08
APN 009-024-09
FORBERG WELL 2
APN 009-022-33
APN 009-022-47
APN 009-022-49
HWY 29
FORBERG WELL 1
PROPOSED CANNABIS FOOTPRINT
APN 009-022-42
APN 009-022-45
APN 009-022-46
APN 009-022-43
APN 009-022-44
APN 009-022-54
APN 009-022-53
0924346
789813
713322
58407
0134505
769927
705644
1089166
50237
414705
33004
842954
98850
20726
213582

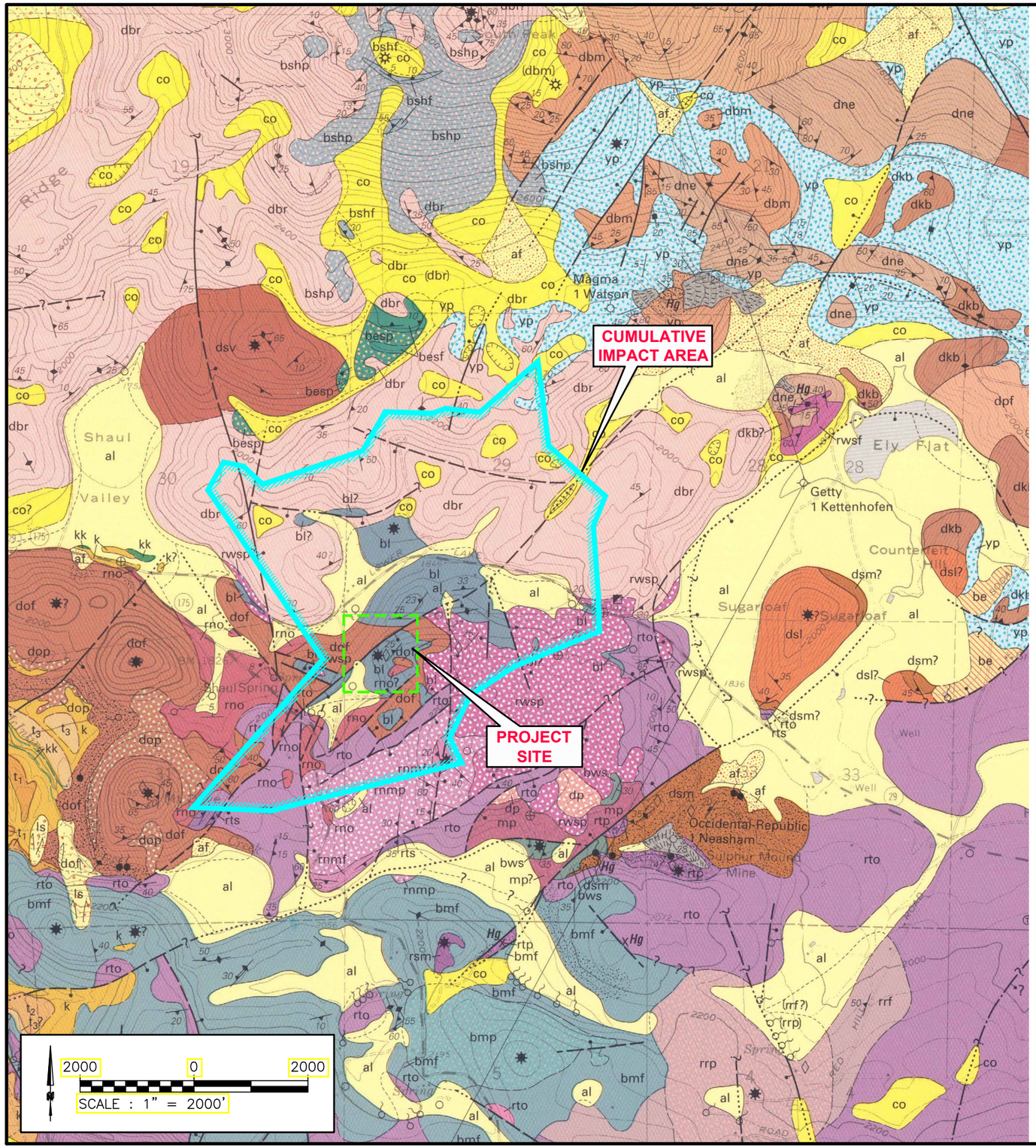
LEGEND

- ON-SITE WATER SUPPLY WELL AND NUMBER ID
- OFF-SITE WATER SUPPLY WELL
- CDWR CALIFORNIA DEPARTMENT OF WATER RESOURCES
- PROPOSED CANNABIS FOOTPRINT
- ASSOCIATED PARCEL
- NON-ASSOCIATED PARCEL

NOTE:
OFF-SITE WELL LOCATIONS SHOWN HEREON ARE ASSUMED. PLACED NEAR STRUCTURE VISIBLE ON GOOGLE IMAGE.

1000 0 1000
SCALE : 1" = 1000'

EBA ENGINEERING
825 SONOMA AVENUE
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784



MAP SYMBOLS

Contact—Dashed where approximately located; dotted where concealed; queried where uncertain

Fault—Showing dip where known; dashed where approximately located; dotted where concealed; queried where uncertain. Bar and ball on downthrown side. Single-sided arrows on map show direction of relative horizontal movement; queried where uncertain. Sawteeth on upper plate of thrust or reverse fault. In cross section, single-sided arrows show relative up and down movement, and A and T show relative movement away and toward viewer; queried where uncertain

Possible fault—Inferred from linear features on aerial photography; dotted where projected beneath surficial deposits; queried where uncertain. Bar and ball on downthrown side. Single-sided arrows on map show direction of relative horizontal movement; in cross section these arrows show relative up and down movement; queried where uncertain

Anticline—Showing plunge where known; dashed where approximately located; dotted where concealed

Syncline—Dashed where approximately located

Strike and dip of beds—Ball indicates top of beds known from sedimentary features

- Inclined, approxiimate where no dip amount shown
- Vertical
- Horizontal
- Overturned
- Inclined, probable deltaic foreset beds

Strike and dip of flow banding and flow foliation

- Inclined, approximate where no dip amount shown
- Inclined, showing plunge of lineation
- Vertical
- Vertical, showing horizontal lineation

Strike and dip of joints

- Inclined
- Vertical

Direction of landslide movement

Closed topographic depression

Edge of flow inferred by topographic step; concave toward source

Vent—Queried where location uncertain, open symbol where concealed. Vent for enclosing unit unless labeled otherwise

Vent and inferred concealed crater—Produced by phreatic eruption of young pyroclastic deposits; queried where uncertain

Hydrothermal alteration

Fumarole, sulfur fume

Spring

Gaseous spring beneath Clear Lake and Borax Lake (Sims and Rymer, 1976)

- Single
- Cluster

Water well—Showing map units and depth intervals penetrated in feet where known

Drill hole—Showing map units and depth intervals penetrated in feet where known

- Abandoned; S, sulfur fume; CH_4, methane
- Shut in
- Temperature test
- Cored hole beneath Clear Lake (Sims, Adam, and Rymer, 1981; Sims, Rymer, and Perkins, 1981)

Adit

Vertical shaft

Prospect pit

Carbonate vein, showing dip

Mercury mineralization

Mine dump

Open pit

Location of sample dated by K/Ar method

Location of sample dated by radiocarbon (C^{14}) method

Units concealed by surficial deposits shown in parentheses; queried where uncertain

LEGEND

Rhyolite north of McIntire Creek (formerly dacite of Cleft Hill of Hearn and others, 1976) (Pleistocene)—Moderately crystal-rich, locally perlitic, biotite rhyolite. Youngest unit in complex sequence east of Mount Olive; overlies flows (bmf) of the basaltic andesite of McIntire Creek, pyroclastic deposits (rwsp) of the rhyolite west of Sugarloaf, obsidian (rto) of the rhyolite of Thurston Creek, and rhyolite northeast of Mount Olive (rno). Maximum thickness about 25–40 m

rnmp — Pyroclastic deposits—Coarse bomb and block tephra and lapilli tuff. Contain sparse obsidian fragments and, close to source vent, contain blocks of vesicular biotite rhyolite up to 1.5 m in diameter

rnmf — Flows—Small lateral extent

Rhyolite west of Sugarloaf (formerly biotite rhyolite pyroclastic deposits west of Sugarloaf of Hearn and others, 1976) (Pleistocene)—Crystal-rich biotite rhyolite. Exposed area is 1 km^2, but concealed extent may exceed 3 km^2; present in both Magma 1 Watson and in Getty 1 Kettenhofen drill holes. Source probably near present outcrops northwest or west of Sugarloaf. Scattered fragments of this rhyolite occur on top of the obsidian (rto) of the rhyolite of Thurston Creek as much as 3 km east-southeast of Ely Flat. Overlain by the dacites of Konocti Bay (dkb) and north of Ely Flat (dne). Age of 0.54±0.02 Ma on sanidine. Maximum exposed thickness 65 m

rwsf — Flow—Perlitic glassy crystal-rich biotite rhyolite. West of Ely Flat

rwsp — Pyroclastic deposits—Pyroclastic breccia and lapilli tuff; mostly nonbedded to poorly bedded, only locally well bedded. Biotite rhyolite pumice lapilli and blocks of pumice and lithic biotite rhyolite, both up to 1 m diameter, make up 90–95 percent of deposit. Also contains lithic fragments and blocks up to 70 cm diameter of biotite-hornblende dacite resembling the rhyodacites of Sugarloaf (dsl) or Mount Olive (dof, dop), diabasic-textured mafic inclusions up to 40 cm diameter, fragments of basaltic andesite, and rare fragments and blocks up to 15 cm diameter of the black glassy rhyodacite of Diener Drive (dd); obsidian fragments absent. Mainly airfall deposits, locally reworked by water; local well-bedded airfall layers 1–15 cm thick contain pumice fragments up to 12 cm diameter, fragments of chert and graywacke averaging 6 mm diameter, and abundant clear quartz grains of 1–3 mm diameter

bl — **Basaltic andesite of Lower Lake Road (Pleistocene)**—Flows, coarse blocks and bombs, and pyroclastic breccia of sparsely porphyritic basaltic andesite. Overlies and contains partially melted inclusions of the rhyodacite of Mount Olive (dop, dof) and rhyolite northeast of Mount Olive (rno). Maximum exposed thickness 50 m

rno — **Rhyolite northeast of Mount Olive (Pleistocene)**—Bomb, block, and lapilli tephra, pyroclastic breccia, lapilli tuff, and tuff of crystal-rich biotite rhyolite. Poorly exposed, mostly nonbedded. Consists of pumice lapilli, pumice blocks, and lithic blocks up to 70 cm diameter; locally contains biotite-free rhyolitic pumice, blocks of crystal-poor biotite dacite up to 50 cm diameter, and fragments of chert up to 2 cm diameter; obsidian fragments absent. Closely similar to the rhyolites west of Sugarloaf (rwsp), of Milky Creek (rm), and of Cole Creek (rce). Occurs as inclusions in, and is overlain by, the basaltic andesite of Lower Lake Road (bl). Maximum exposed thickness 25 m

Rhyolite of Thurston Creek (Pleistocene)—Sparsely porphyritic rhyolite. Contains less than 1 percent of andesitic inclusions, most of which are less than 10 mm diameter (Stimac and others, 1991). Pyroclastic deposits (rtp), obsidian (rto), and stony rhyolite (rts) mapped separately in most of area. Dominant exposed lithology is obsidian; however, stony rhyolite is dominant in total thickness of flows. Pumiceous carapace largely eroded from surface of flows, but locally preserved where initially thicker or where previously covered by younger deposits. Rhyolite in Camel Back Ridge area may be separate flow erupted from local vents, but probably is contemporaneous with rhyolite farther east. Ages on obsidian samples are 0.479±0.015 Ma north of Manning Flat, 0.56±0.02 Ma in unit rtp at Sulphur Mound Mine, 0.551±0.016 Ma in Bottle Rock Road road cut on Camel Back Ridge, and 0.64±0.03 Ma in SW1/4NE1/4 sec. 12, T. 12 N., R. 9 W. on Camel Back Ridge; estimated actual age of about 0.60 Ma is on the basis of ages on underlying and overlying units. Maximum exposed thickness 130 m; thickness in Republic 77–1 Boggs drill hole northwest of Mount Hannah is 300 m

rto — Obsidian

rts — Stony rhyolite—Devitrified inner part of flow(s)

Rhyodacite of Mount Olive (Pleistocene)—Abundantly porphyritic biotite-hornblende rhyodacite. Overlain by obsidian (rto) and stony rhyolite (rts) of the rhyolite of Thurston Creek, Kelseyville Formation (k), basaltic andesite of Lower Lake Road (bl), pyroclastic deposits (rwsp) of the rhyolite west of Sugarloaf, and rhyolite northeast of Mount Olive (rno); probably overlain by the rhyolite of Cole Creek (rce) and dacite of Benson Ridge (dbr); cut by dikes of the andesite west of Shaul Valley (aws). Age of 0.53±0.02 Ma on sanidine is too young; true age must be older than the overlying rhyolite of Thurston Creek dated at about 0.60 Ma. Maximum exposed thickness 180 m

dop — Pyroclastic deposits—Block tephra, lapilli tephra, and pyroclastic breccia

dof — Flows and domes

dbr — **Dacite of Benson Ridge (Pleistocene)**—Flows and domes of coarsely and abundantly porphyritic biotite dacite. Contains 1–2 percent of diabasic-textured pyroxene-plagioclase mafic inclusions as much as 1.2 m diameter. Main source on South Peak and possible additional vents on Benson Ridge and east of Shaul Valley. Maximum exposed thickness 300 m

al — **Alluvium (Holocene)**—Flood-plain, channel, and lake deposits of clay, silt, sand, and gravel. Locally may include youngest part of the basin deposits of Clear Lake (bcl)

co — **Colluvium (Holocene)**—Slope deposits of silt, sand, and coarser angular clasts. Mapped only where extensive or where covers critical contact of bedrock units

FIGURE 3 15-2397

GEOLOGIC MAP

7661 HWY 29
KELSEYVILLE, CALIFORNIA

EBA ENGINEERING
825 SONOMA AVENUE
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784

Q:\2397\Geologic Map.dwg, Fig 2, 3/13/2017 12:15:58 PM

APPENDIX B

WATER WELL DRILLERS REPORTS (WWDR)

ORIGINAL
File with DWR

Page 1 of 1

MAR 23 2004

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 789813

Owner's Well No. 2

Date Work Began 9/8/03 , Ended 9/16/03

Local Permit Agency Lake County Health Dept.

Permit No. WE-3353 Permit Date 8/5/03

DWR USE ONLY — DO NOT FILL IN
13N/08W-29M
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Air Rotary FLUID Air

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	5	Overburden & Cobble
5	25	Volcanic Clay
25	75	Hard, Brittle Volcanic
75	77	Fracture
77	160	Hard, Brittle Volcanic
160	175	Hard, Brittle Volcanic
175	178	Fracture
178	200	Hard, Brittle Volcanic
200	255	Pink, Soft Volcanic
255	365	Brown Soft Volcanic
365	383	Hard, Green Volcanic
383	385	Fracture (Water)
385	393	Hard Brown Volcanic
393	395	Fracture
395	403	Hard, Brown Volcanic
403	405	Fracture (Water)
405	460	Brown Fractured Volcanic

TOTAL DEPTH OF BORING 460 (Feet)

TOTAL DEPTH OF COMPLETED WELL 460 (Feet)

[redacted]

WELL LOCATION

Address 7770 S. Highway 29

City Upper Lake

County Lake

APN Book 009 Page 022 Parcel 22

Township 13N Range 08W Section 29 0

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH

Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH

NORTH / WEST / EAST / SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

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

PLANNED USES (✓)

WATER SUPPLY
X 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 385 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 385 (Ft.) & DATE MEASURED 9/9/03

ESTIMATED YIELD * 15 (GPM) & TEST TYPE Air Blow

TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN N/A (Ft.)

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

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	385		Y				Steel	6	0.25	
385	415			Y			Steel	6	0.25	0.0625
415	420		Y				Steel	6	0.25	
420	460			Y			Steel	6	0.25	0.0625

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	35	Y			

MAY 27 2004

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 Diamond Well Drilling Company (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 1660 Old Airport Rd. CITY Auburn STATE CA ZIP 95602

Signed Dave Fulton WELL DRILLER/AUTHORIZED REPRESENTATIVE

DATE SIGNED 9/03

C-57 LICENSE NUMBER 398306

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 0924346

DWR USE ONLY — DO NOT FILL IN
13N/08W/29
STATE WELL NO./STATION NO.
LATITUDE | LONGITUDE
APN/TRS/OTHER

Owner's Well No. 0
Date Work Began 4/13/05 Ended 4/27/05
Local Permit Agency Lake County Health Dept.
Permit No. WE-3564 Permit Date 4/13/05

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ODEX FLUID FOAM

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	35	Red Clay
35	140	Gravel and Rock
140	155	Volcanic Conglomerate
155	160	Fractured Rock
160	435	Grey and Brown Volcanic Conglomerate
435	436	Fracture
436	510	Volcanic Conglomerate
510	525	Ryolite
525	535	Fractures
535	620	Ryolite
620	640	Hard Rock
640	662	Ryolite
662	663	Fracture
663	680	Ryolite

TOTAL DEPTH OF BORING 680 (Feet)
TOTAL DEPTH OF COMPLETED WELL 680 (Feet)

WELL LOCATION

Address 7770 Highway 29
City Kelseyville
County Lake
APN Book 009 Page 022 Parcel 22
Township 13N Range 8W Section 29
Lat ___ DEG. ___ MIN. ___ SEC. N
Long ___ DEG. ___ MIN. ___ SEC. W

LOCATION SKETCH

NORTH / WEST / EAST / SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
X 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 435 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 440 (Ft.) & DATE MEASURED 4/27/05
ESTIMATED YIELD * 3 (GPM) & TEST TYPE Air Blow
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN N/A (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	188		Y				Steel	6	.250	
0	480		Y				F480 PVC	4	CL160	
480	660			Y			F480 PVC	4	CL160	.0625
660	680		Y				F480 PVC	4	CL160	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	25		Y		

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 Diamond Well Drilling Company (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

1660 Old Airport Rd. (ADDRESS) Auburn (CITY) CA (STATE) 95602 (ZIP)

Signed Arthur D Tuttle (C-57 LICENSED WATER WELL CONTRACTOR) ___ (DATE SIGNED) 398306 (C-57 LICENSE NUMBER)

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

OSP 03 78836

ORIGINAL
File with DWR

APR 04 2002

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page ___ of ___
Owner's Well No. ___
No. 713322
Date Work Began 9-25-01 Ended 9-27-01
Local Permit Agency Health Dept.
Permit No. WE 3076 Permit Date 9-24-01

DWR USE ONLY — DO NOT FILL IN
13N/08W-29M
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD air rotary FLUID ___

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0 410	Volcanic Ash & or soft Granite

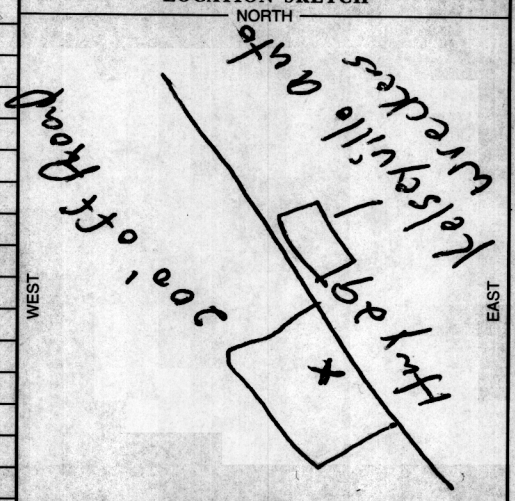
TOTAL DEPTH OF BORING 410 (Feet)
TOTAL DEPTH OF COMPLETED WELL 410 (Feet)

[redacted]

WELL LOCATION

Address 7673 Hwy 29
City Kelseyville
County Lake
APN Book 009 Page 022 Parcel 31
Township 13N Range 8W Section 29
Latitude ___ DEG. ___ MIN. ___ SEC. NORTH
Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



*Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
X 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 380 (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
ESTIMATED YIELD * 25 (GPM) & TEST TYPE air lift
TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 20	9	X				PVC	4½	160	
20 360	7	X				"	"	"	
360 410	7		X			"	"	"	1/8

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 20	X			
20 410				5/16 Pea

APR 19 2002

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 Larry Herman Drilling
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 13011 Hwy 29 CITY Lower Lake STATE Ca ZIP 95457

Signed Larry Herman
WELL DRILLER/AUTHORIZED REPRESENTATIVE

DATE SIGNED 9-27-01

C-57 LICENSE NUMBER 465071

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 5
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 58407
State Well No.
Other Well No. 13M/5

(1)
Name [redacted]
Address

(2) LOCATION OF WELL:

County LAKE Owner's number, if any--
R. F. D. or Street No. R6W, T12N, SEC. 32 ABOUT 200 FEET SOUTH OF LOWER LAKE TO KELSEYVILLE RD. AT A POINT ABOUT 3/4 MI EAST OF JUNCTION WITH HIGHWAY 29

(3) TYPE OF WORK (check):

New well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☒ Other ☐

(5) EQUIPMENT:

Rotary ☐
Cable ☒
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☐ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
NONE			

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint

(7) PERFORATIONS:

Type of perforator used
Size of perforations in., length, by in.

From ft.	to ft.	Perf. per row	Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From ft.	to ft.

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found ft.
Standing level before perforating ft.
Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No
Was electric log made of well? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 205 ft. Depth of completed well — ft.
Formation: *Describe by color, character, size of material, and structure.*

0 ft. to 18 ft.		Soil & rock
18 " 20 "		rock
20 " 38 "		Brown clay & rock
38 " 48 "		Rock
48 " 55 "		Clay & rock
55 " 65 "		Porous rock
65 " 70 "		Fractured basalt
70 " 97 "		Rock (very hard)
97 " 115 "		Rock (pink color)
115 " 205 "		Volcanic Alluvium

CONFIDENTIAL
Section 7076.1, Water Code

100
100

FOR OFFICIAL USE ONLY

FEB 6 1985

Work started 6/9/59 19 Completed 7/15/59 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.

NAME J.W. HUTTON 00042
(Person, firm, or corporation) *(Typed or printed)*
Address UPPER LAKE

[SIGNED] J.W. Hutton
License No. 453912 Dated 7/15/59, 19
Well Driller

57025 6-57 50M QUIN △ SPO

DWR 188 (REV. 3-54)

ORIGINAL
File with DWR

AUG 10 2011

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page 1 of 1

No. e0134505

DWR USE ONLY -- DO NOT FILL IN
13N/08W-32
STATE WELL NO./ STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. TEST HOLE #1
Date Work Began 6/27/2011, Ended 7/26/2011
Local Permit Agency Lake County Environmental
Permit No. WE4246 Permit Date 6/7/2011

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL — HORIZONTAL — ANGLE — (SPECIFY)
DRILLING METHOD AIR FLUID N/A

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain, size, color, etc.*
		TEST HOLE
0	43	Yellow volcanic sand, cobbles, ash, obsidian
43	88	Tan volcanic sands, gravels, ash, obsidian
88	105	White pumice and red volcanic rock
105	141	Tan volcanics with red volcanic rock
141	167	White pumice with red volcanic rock
167	242	White yellow volcanic rock with pink, red volcanic rock
242	338	Burgundy and multi colored volcanic rock with some pink ash
338	408	Hard purple rock
408	441	Pink and white rock
441	511	Burgundy, black and multi colored rock
511	538	Gray rock with dark green speckles
538	639	Dark green multi colored rock (like glass)
639	700	Dark green black volcanic rock fractured
		Test hole backfilled and abandoned per Lake county requirements

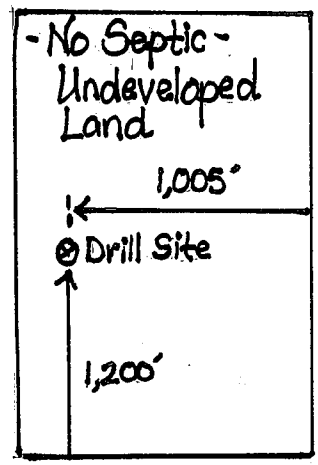
TOTAL DEPTH OF BORING 700 (Feet)
TOTAL DEPTH OF COMPLETED WELL N/A (Feet)

[redacted] ZIP

WELL LOCATION

Address 7713 Highway 175
City Kelseyville CA
County Lake County
APN Book 009 Page 022 Parcel 47-10
Township 13N Range 8W Section 32
Latitude DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)
✓ NEW WELL
MODIFICATION/REPAIR
— Deepen
— Other (Specify)
— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)
WATER SUPPLY
✓ Domestic — Public — Industrial
— Irrigation
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 N/A (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL N/A (Ft.) & DATE MEASURED
ESTIMATED YIELD * N/A (GPM) & TEST TYPE N/A
TEST LENGTH N/A (Hrs.) TOTAL DRAWDOWN N/A (Ft.)
May not be representative of a well's long-term yield.

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	CASING (S) TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	40	11"								
40	700	8"								
-----		----------					----------	----------	----------	----------

DEPTH FROM SURFACE Ft.	to Ft.	ANNULAR MATERIAL TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20		✓		
-----	-----				----------

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 Weeks Drilling & Pump (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
P.O. Box 176 (ADDRESS) Sebastopol (CITY) CA (STATE) 95473 (ZIP)
Signed Melissa G Lopez (WELL DRILLER/AUTHORIZED REPRESENTATIVE) 08/04/11 (DATE SIGNED) 177681 (C-57 LICENSE NUMBER)

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

DEC 19 2008

Page ___ of ___

Owner's Well No. ___

Date Work Began 11/10/08 Ended 11/14/08

Local Permit Agency Lake County Environmental Health

Permit No. WE 4045 Permit Date 11/10/08

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 1089166

DWR USE ONLY — DO NOT FILL IN
13N/08W-29
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD Rotary FLUID Air

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	4	Brown Gravely Soil
4	130	Brown Gravely Vol. Clay
130	270	Gray and Brown Vol. Ash
270	380	Gray Vol. Rock

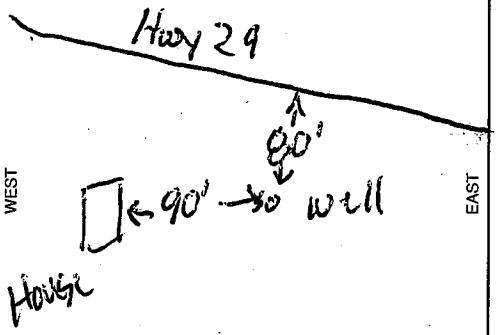
TOTAL DEPTH OF BORING 380 (Feet)
TOTAL DEPTH OF COMPLETED WELL 380 (Feet)

[redacted]
CITY STATE ZIP

WELL LOCATION

Address 7733 Hwy 29
City Kelseyville
County Lake
APN Book 004 Page 022 Parcel 36
Township 13N Range 8W Section 29
Lat ___ N DEG. MIN. SEC. Long ___ W DEG. MIN. SEC.

LOCATION SKETCH

NORTH


SOUTH

*Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

USES (✓)

WATER SUPPLY
X 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 320± (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 292 (Ft.) & DATE MEASURED 11/14/08
ESTIMATED YIELD 20 (GPM) & TEST TYPE Air Lift
TEST LENGTH 1/2 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	130	9	X				PVC F480	4½	SDR26	
130	360	7	X				PVC F480	4½	SDR26	
360	380	7		X			PVC F480	4½	SDR26	.032

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	22		X		
22	380				pea gravel

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 Dan McMullen Well Drilling
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 1487 Old Long Valley Rd. CITY Clearlake Oaks STATE CA ZIP 95423

Signed Dan L Mullen
C-57 LICENSED WATER WELL CONTRACTOR

DATE SIGNED 12/14/08

C-57 LICENSE NUMBER 533152

DWR 188 REV. 05-03

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

OSP 03 78836

13N/8W-31

ORIGINAL

File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 20726

Notice of Intent No.

Local Permit No. or Date

State Well No. CONFIDENTIAL per Water Code

Other Well No.

[redacted]

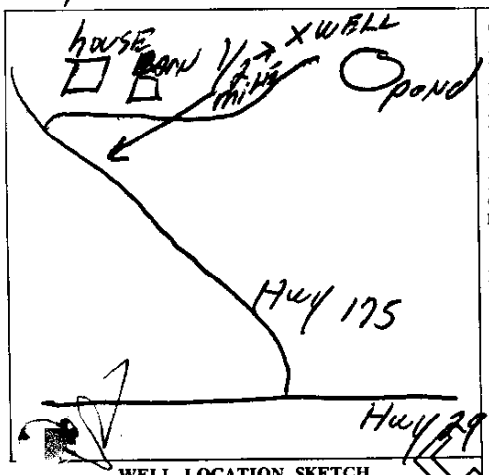
(2) LOCATION OF WELL (See instructions):

County LAKE Owner's Well Number

Well address if different from above

Township 13N Range 8W Section 31

Distance from cities, roads, railroads, fences, etc. 1 MILE SOUTH OF Hwy 29 AND 1/2 MILE WEST OF Hwy 175



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 ☐
Stock ☐
Municipal ☐
Other ☐

(5) EQUIPMENT:

Rotary ☑ Reverse ☐
Cable ☐ Air ☑
Other ☐ Bucket ☐

(6) GRAVEL PACK:

Yes ☑ No ☐ Size
Diameter of bore
Packed from 137 to 20 ft.

(7) CASING INSTALLED:

Steel ☐ Plastic ☑ Concrete ☐

From ft.	To ft.	Dia. in.	Gage or Wall
0	20	8	125
0	137	6	125

(8) PERFORATIONS:

Type of perforation or size of screen

From ft.	To ft.	Slot size
37	107	24

(9) WELL SEAL:

Was surface sanitary seal provided? Yes ☑ No ☐ If yes, to depth 20 ft.
Were strata sealed against pollution? Yes ☐ No ☑ Interval ft.
Method of sealing CEMENT

(10) WATER LEVELS:

Depth of first water, if known 50' ft.
Standing level after well completion 45 ft.

(11) WELL TESTS:

Was well test made? Yes ☐ No ☑ If yes, by whom?
Type of test Pump ☐ Bailer ☐ Air lift ☐
Depth to water at start of test ft. At end of test ft.
Discharge 20 gal/min after hours Water temperature
Chemical analysis made? Yes ☐ No ☑ If yes, by whom?
[redacted]ctric log made? Yes ☐ No ☑ If yes, attach copy to this report

(12) WELL LOG: Total depth 137 ft. Depth of completed well ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	2	SOIL
2	40	SANDY CLAY
40	110	VOLCANIC ASH
110	120	GREEN STONE
120	137	VOLCANIC ASH

Work started 6-20 19 99 Completed 6-21 19 99

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 (Well Driller)

NAME POINTS West Inc (Person, firm, or corporation) (Typed or printed)

Address Box 190

City WEST POINT CA Zip 95255

License No. 333635 Date of this report 6-21-99

NOTICE
WATER PUBLIC USE
WATER CODE SEC. 13752

[redacted] 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 43816-950 7-76 50M QUAD ⓘT OSP

~~12W~~/08W - 31 M
12N
13N/08W - 31

ORIGINAL

File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in
No. 213582

No. Intent No.
Log Permit No. or Date

State Well No.
Other Well No.

(1) [redacted]
Address
City

(2) LOCATION OF WELL (See instructions):
County Lake Owner's Well Number
Well address if different from above
Township 12W Range 8W Section 31
Distance from cities, roads, railroads, fences, etc.
Hiway 175
Kelseyville
A.P. # 9-022-52 No LOT 52 ON MAP 53

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 ☐
Stock ☒
Municipal ☐
Other ☐

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

(6) GRAVEL PACK:
Yes ☒ No ☐ Size 3/8" pea
Diameter of bore 10 5/8, 6 3/4, 6 1/2
Packed from 21 to 566 ft.

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

(8) PERFORATIONS: saw cut
Type of perforation or size of screen

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
0	564	4½"	CL200	423	563	1/8x3"

(9) WELL SEAL:
Was surface sanitary seal provided? Yes ☒ No ☐ If yes, to depth 21 ft.
Were strata sealed against pollution? Yes ☐ No ☒ Interval ft.
Method of sealing cement on gravel pack

(10) WATER LEVELS:
Depth of first water, if known ft.
Standing level after well completion 315 ft.

(11) WELL TESTS:
Was well test made? Yes ☒ No ☐ If yes, by whom? Weeks
Type of test Pump ☐ Bailer ☐ Air lift ☒
Depth to water at start of test 315 ft. At end of test 556 ft.
Discharge 25 gal/min after 3 hours Water temperature cool
Chemical analysis made? Yes ☐ No ☒ If yes, by whom?
Was electric log made? Yes ☐ No ☒ If yes, attach copy to this report

(12) WELL LOG: Total depth 566 ft. Depth of completed well 564 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	2	Top soil
2	8	Brown sand with occasional boulders
8	18	Tan tufa
18	21	Hard tufa rock
21	30	Tan tufa
30	35	Volcanic conglomerate
35	42	Gray volcanic rock
42	46	Hard red and gray volcanic rock
46	50	Extremely hard volcanic rock
50	61	Hard brown and black rock
61	131	Very hard red and black rock
131	139	Gray volcanic rock
139	176	Black rock with ash zones
176	214	Volcanic conglomerate and ash
214	265	Hard black rock and gray ash
265	289	Hard brown porous rock
289	294	Red pumice stone
294	306	Hard red and black rock
306	376	Very hard multicolored rock with soft zones
376	414	Very hard red rock
414	446	Very hard multicolored rock
446	503	Hard multicolored rock
503	566	Conglomerate

MAY 1 1985

Work started 2/12 19 85 Completed 2/20 19 85

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 Gerald Thompson By: Roy Curl 00098
(Well Driller)
NAME WEEKS DRILLING AND PUMP COMPANY
(Person, firm, or corporation) (Typed or printed)
Address P.O. Box 176 - 6100 Sebastopol Road
City Sebastopol, California Zip 95472
License No. C57-177681 Date of this report March 1, 1985

DWR 188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page ___ of ___

Owner's Well No. ___

Date Work Began 10-6-99 Ended 10-21-99

Local Permit Agency Health Dept.

Permit No. WE-1790 Permit Date 10-6-99

JAN 06 2000

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 705644

DWR USE ONLY — DO NOT FILL IN
13N/08W-29M
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD air rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	130	Red & Blue broken Volcanics
130	145	Soft Red Volcanics
145	305	light gray Volcanics
305	315	Black Soft Volcanics
315	395	Green Volcanics

TOTAL DEPTH OF BORING 395 (Feet)

TOTAL DEPTH OF COMPLETED WELL 395 (Feet)

WELL LOCATION

Address 2723 S. Hwy 29

City Kelseyville

County Lake

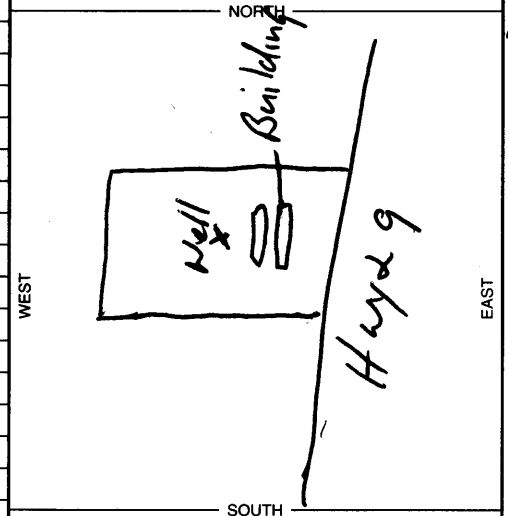
APN Book 009 Page 022 Parcel 34

Township 13N Range 8W Section 29

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH

Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

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

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation X 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 350 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 300 (Ft.) & DATE MEASURED 10-15-99

ESTIMATED YIELD * 100 (GPM) & TEST TYPE air lift

TEST LENGTH 2 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

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

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	50	9"	X				PVC Sch 40	4 1/2	160	
50	355	7"	X				" "	"	"	
355	395	7"		X			" "	"	"	1/8

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	50	X			
50	395				5/16 Pea
					JAN 25 2000

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 Larry Herman Drilling (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 13011 Hwy 29 CITY Lower Lake STATE Ca ZIP 95457

Signed Larry Herman (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 10-21-99

C-57 LICENSE NUMBER 465071

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

MAR 04 2003

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet
No. 769927

DWR USE ONLY — DO NOT FILL IN
13N/08W-29M
STATE WELL NO./ STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. Well #1
Date Work Began 2/3/2002, Ended 2/24/2003
Local Permit Agency Lake Co Environ Health
Permit No. WE-3279 Permit Date 1/24/2003

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD AIR ROTARY FLUID FOAM

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain, size, color, etc.*
0 55	Wet red clays w/embedded multi-colored volcanics
55 344	White volcanic ash w/traces of multi-colored volcanics
344 440	Multi-colored volcanic ash w/red and black cinder rock

TOTAL DEPTH OF BORING 440 (Feet)
TOTAL DEPTH OF COMPLETED WELL 432 (Feet)

[redacted]
CITY STATE ZIP

WELL LOCATION

Address 7663 Hwy 29
City Kelseyville CA
County Lake
APN Book 009 Page 022 Parcel 290
Township 13N Range 08W Section 29
Latitude DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH

NORTH / WEST / EAST / SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

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 380 (Ft.) BELOW SURFACE 1
DEPTH OF STATIC WATER LEVEL 298 (Ft.) & DATE MEASURED 2/24/2003
ESTIMATED YIELD * 30+ (GPM) & TEST TYPE BAILED
TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN 430 (Ft.)
May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0 60	12 1/4								
60 440	7 7/8								
+2 432		✓				PVC	5	CL200	
0 20				✓		STEEL	8 5/8		
352 432			✓						.032

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0 40	✓			sand grout
40 432			✓	3/8 pea gravel

MAR 28 2003

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 Weeks Drilling & Pump (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
P.O. Box 176 ADDRESS Sebastopol CITY CA STATE 95473 ZIP
Signed Melissa G Lopez WELL DRILLER/AUTHORIZED REPRESENTATIVE
02/26/03 DATE SIGNED
177681 C-57 LICENSE NUMBER

DWR 188 REV. 11-97
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

D C

LOCATION NOT CHECKED

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 5
(Insert appropriate number)

WATER WELL DRILLERS REPORT
(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 33004
State Well No.
Other Well No. 13N/8W-32

(1) Name [redacted]
Addr

(2) LOCATION OF WELL:
County LAKE Owner's number, if any—
R. F. D. or Street No. T13N, R8W, Sec 31 ABOUT 100 Ft. EAST OF HIWAY 29 AT A POINT ABOUT 1/2 MILE SOUTH-EAST JUNCTION OF HI-WAY 29 & LOWER LAKE ROAD

(3) TYPE OF WORK (check):
New well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]
If abandonment, describe material and procedure in Item 11.

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

(5) EQUIPMENT:
Rotary [ ]
Cable [X]
Dug Well [ ]

(6) CASING INSTALLED:
SINGLE [X] DOUBLE [ ]
From 0 ft. to 108 ft. Diam. 12 Gage or Wall
Type and size of shoe or well ring 1/2 X 4
Describe joint BUTT WELD

If gravel packed
Diameter of Bore: 12 from ft. 15 to ft. 102
Size of gravel: 3/4

(7) PERFORATIONS:
Type of perforator used MOSS FACTORY 1/8" HORZ SLOT
Size of perforations 1/2 in., length by 1/8 in.
From 80 ft. to 104 ft. 4 Perf. per row 6 Rows per ft.

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

(9) WATER LEVELS:
Depth at which water was first found 90 ft.
Standing level before perforating 63 ft.
Standing level after perforating 11 ft.

(10) WELL TESTS:
Was a pump test made? [ ] Yes [ ] No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? [ ] Yes [ ] No
Was electric log made of well? [ ] Yes [ ] No

(11) WELL LOG:
Total depth 110 ft. Depth of completed well 108 ft.
Formation: Describe by color, character, size of material, and structure.

15 ft. to	90 ft.	CLAY & ROCK (SMALL) HARDPAN (BROWN)
90 "	92 "	BLUE RED ROCK & CLAY (POROUS)
92 "	95 "	ROCK & CLAY
95 "	100 "	CEMENTED GRAVEL VOLCANIC ROCKS, MIX
100 "	105 "	HARD PAN
105 "	110 "	BLACK VOLCANIC ROCK

NOTE: DEEPENED EXISTING HAND-DUG WELL

CONFIDENTIAL
Section 7076.1, Water Code

FOR OFFICIAL USE ONLY

FEB 6 1985

Work started 6/30 1958 Completed 7/2 1958

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 J. W. HUTTON 00042
(Person, firm, or corporation) (Typed or printed)
Address UPPER LAKE

[SIGNED] J W Hutton
License No. 153 9-2 Well Driller Dated 8/3/58, 19

95699 3-54 50M QUIN ® SPO DWR FORM NO. 246 (REV. 3-54)

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 5
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

LOCATION NOT CHECKED
Do Not Fill In
No 50237
State Well No.
Other Well No. 13N/8W-31

[redacted]

(2) LOCATION OF WELL:

County LAKE Owner's number, if any---

R. F. D. or Street No. T13N, R8W, SEC. 31 ABOUT 1/4 MILE SOUTH OF JUNCTION HIWAY 29 WITH LOWER LAKE ROAD & 200 FT. EAST OF HIWAY 29

(3) TYPE OF WORK (check):

New well [X] Deepening [ ] Reconditioning [ ] Abandon [X]

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic [ ] Industrial [ ] Municipal [ ]
Irrigation [X] Test Well [ ] Other [ ]

(5) EQUIPMENT:

Rotary [ ]
Cable [X]
Dug Well [ ]

(6) CASING INSTALLED:

SINGLE [X] DOUBLE [ ]

From ft.	to ft.	Diam.	Gage or Wall
		12"	

Type and size of shoe or well ring

Describe joint

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:

(7) PERFORATIONS:

Type of perforator used

Size of perforations in., length, by in.

From ft.	to ft.	Perf. per row	Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? [ ] Yes [ ] No To what depth ft.

Were any strata sealed against pollution? [ ] Yes [ ] No If yes, note depth of strata

From ft.	to ft.

Method of Sealing

(9) WATER LEVELS:

Depth at which water was first found 115 ft.
Standing level before perforating 78 ft.
Standing level after perforating 78 ft.

(10) WELL TESTS:

Was a pump test made? [X] Yes [ ] No If yes, by whom?

Yield: 75 gal./min. with 15 ft. draw down after 10 hrs.

Temperature of water Was a chemical analysis made? [ ] Yes [X] No

Was electric log made of well? [ ] Yes [X] No

(11) WELL LOG:

Total depth 216 ft. Depth of completed well — ft.

Formation: *Describe by color, character, size of material, and structure.*

ft. to ft.	
0 – 8	SOIL
8 – 12	BOULDERS
12 – 18	ROCK & CLAY (BLUE)
18 – 110	CEMENTED ALLUVIUM (BLUE)
110 – 115	30 FT BLUE CLAY
115 – 125	CEMENTED ALLUVIUM (WATER-BEARING)
125 – 150	ROCK (VOLCANIC RUBBLE)
150 – 175	CONGLOMERATE & BLUE CLAY
175 – 177	BOULDERS (BASALT)
177 – 187	CONGLOMERATE & BLUE CLAY
187 – 208	ROCK (VOLCANIC-PINK)
208 – 216	ROCK & CLAY

HOLE LEFT COVERED BUT NOT BACK-FILLED AT OWNERS REQUEST.

CONFIDENTIAL
Section 7076.1, Water Code

FOR OFFICIAL USE ONLY
FEB 6 1985

Work started 9/23/58 19 , Completed 10/15/58 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.

NAME J. W. HUTTON 00042
(Person, firm, or corporation) (Typed or printed)

Address UPPER LAKE

[SIGNED] J W Hutton
Well Driller

License No. 15391 Dated , 19

57025 6-57 30M QUIN △ SPO

DWR 188 (REV. 3-54)

ORIGINAL
File with DWR

RECEIVED
SEP 08 1993

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 414705

DWR USE ONLY — DO NOT FILL IN
13N/08W-31M1
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page ___ of ___
Owner's Well No. ___
Date Work Began 7-8-93 D.W.R. 8-24-93
Local Permit Agency Lake County Environmental Health
Permit No. WE917 Permit Date 7-12-93

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DEPTH TO FIRST WATER 580 (Ft.) BELOW SURFACE

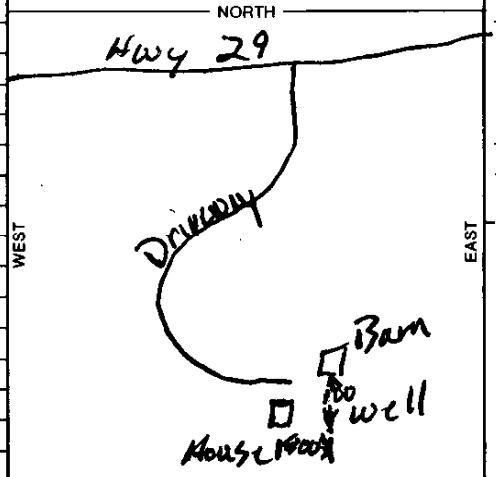
DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	460	Vol Rock
460	540	Pink+Green Vol. Rock
540	670	Red+Black Vol. Rock

TOTAL DEPTH OF BORING 670 (Feet)
TOTAL DEPTH OF COMPLETED WELL 660 (Feet)

WELL LOCATION

Address 7659 Hwy 29
City Kelseyville
County Lake
APN Book 9 Page 24 Parcel 09-01
or Township 13N Range 08W Section 31
or Latitude ___ DEG. ___ MIN. ___ SEC. NORTH Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Landmarks such as Roads, Buildings, Fences, Rivers, etc.
PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

X NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
___ DESTROY (*Describe Procedures and Materials Under "GEOLOGIC LOG"*)

PLANNED USE(S) (✓)

___ MONITORING
WATER SUPPLY
X Domestic
___ Public
___ Irrigation
___ Industrial
___ "TEST WELL"
___ CATHODIC PROTECTION
___ OTHER (Specify)

DRILLING METHOD Air Rotary FLUID ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH OF STATIC WATER LEVEL 580± (Ft.) & DATE MEASURED 8-18-93
ESTIMATED YIELD* 50 (GPM) & TEST TYPE Air Lift
TEST LENGTH 1 (Hrs.) TOTAL DRAWDOWN None (Ft.)
* *May not be representative of a well's long-term yield.*

CASING(S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL/GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	60	9	X				F480 PVC	4½	SDR26	
60	640	6¾	X				F480 PVC	4½	SDR26	
640	660	6¾					F480 PVC	4½	SDR26	2 x ⅛

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	44	X			
44	660				Pea Gravel

SEP

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 Dan McMullen Well Drilling 1603
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 1487 Old Long Valley Rd. CITY Clearlake Oaks STATE CA ZIP 95423
Signed Dan McMullen (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 8-30-93 C-57 LICENSE NUMBER 533152

DWR 188 REV. 7-90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

OCT 13 2009

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. e0098850

DWR USE ONLY --- DO NOT FILL IN
13N/08W-31
STATE WELL NO./ STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Page 1 of 1

Owner's Well No. DRY HOLE #1

Date Work Began 8/21/2009, Ended 8/31/2009

Local Permit Agency Lake County Envrionmental

Permit No. WE4096 Permit Date 7/22/2009

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD N/A FLUID N/A

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain, size, color, etc.*
		DRY HOLE
0	10	Tan clay
10	25	Black volcanic/obsidian
25	55	Red volcanic rock
55	110	Sandy white rock
110	130	Obsidian
130	160	Red volcanic rock
160	170	Loose white rock
170	200	Fractured black rock
200	380	Volcanic red/black sandy rock
		Dry hole backfilled and abandoned per Lake County Environmental

TOTAL DEPTH OF BORING 380 (Feet)

TOTAL DEPTH OF COMPLETED WELL N/A (Feet)

[redacted]
CITY STATE ZIP

WELL LOCATION

Address 8025 Highway 175

City Kelseyville CA

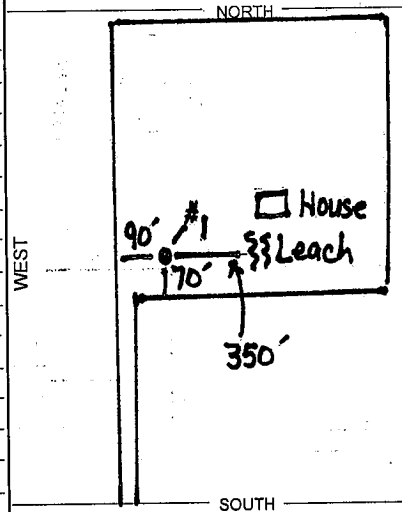
County Lake

APN Book 009 Page 022 Parcel 43 0

Township 13N Range 8W Section 31

Latitude ___ DEG. ___ MIN. ___ SEC. ___ DEG. ___ MIN. ___ SEC.

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.**

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 N/A (Ft.) BELOW SURFACE 1

DEPTH OF STATIC WATER LEVEL N/A (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * N/A (GPM) & TEST TYPE N/A

TEST LENGTH N/A (Hrs.) TOTAL DRAWDOWN N/A (Ft.)

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

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	11"								
20	380	8"								
-----		----------					----------	----------	----------	----------

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
-----	-----				----------

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 Weeks Drilling & Pump (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

P.O. Box 176 ADDRESS Sebastopol CITY CA STATE 95473 ZIP

Signed Melissa G Lopez WELL DRILLER/AUTHORIZED REPRESENTATIVE

09/30/09 DATE SIGNED

177681 C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page ___ of ___

Owner's Well No. ___

Date Work Began 4-8-04 Ended 4-13-04

Local Permit Agency Health Dept.

Permit No. WE-2230 Permit Date 7-14-03

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 824954

DWR USE ONLY — DO NOT FILL IN

13N/08W-31

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD air rotary FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	20	Volcanic Ash
20	100	Hard Gray Volcanics
100	140	Red Volcanics
140	255	Volcanic Ash
255	260	Broken Black Volcanics

water drained into Low formation

Hole Plug from 205' to 260'

TOTAL DEPTH OF BORING 260 (Feet)

TOTAL DEPTH OF COMPLETED WELL 205 (Feet)

[redacted]

CITY STATE ZIP

WELL LOCATION

Address 8025 Hwy 175

City Lakeyville

County Lake

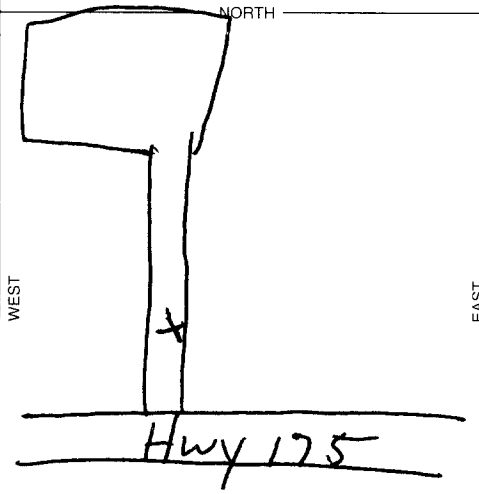
APN Book 009 Page 022 Parcel 43

Township 13N Range 8W Section 31

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH

Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

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

PLANNED USES (✓)

WATER SUPPLY
X 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 140 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 140 (Ft.) & DATE MEASURED 4-12-04

ESTIMATED YIELD * 12 (GPM) & TEST TYPE air lift

TEST LENGTH 72 (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

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

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	20	9	X				PVC	4½	160	
20	160	7	X				"	"	"	
160	220	7		X			"	"	200	.030

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	20	X			
20	205			5/16	Pea
205	260			3/8	Hole Plug

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 Larry Herman Drilling (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 13011 Hwy 29 CITY Lower Lake STATE Ca ZIP 95457

Signed Larry Herman (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 4-13-04 C-57 LICENSE NUMBER 465071

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

APPENDIX C

WELL TEST REPORT

CAL-TECH PUMP WELL & WATER TREATMENT

P.O. Box 1261
Middletown, CA 95461
Ph. 707-987-4488

www.cal-techpump.com
State License # 923640
Fax. 707-987-4411

Well Inspection Log

For: Cheryl Forberg

Site: 7661 Hwy 175
Project:

Ph: (707) 355-0020

Email:

Start Date: 8/10/21

Technician: Joe

WELL DEPTH	CASING SIZE	STATIC LEVEL	PUMP TYPE	PUMP SETTING	MAX PUMP OUTPUT	TOTAL DRAWDOWN	DEAD HEAD	AMPS	VOLTAGE
105'	6" St.	89'	20GPM 1Hp 230v	100'	18.5 GPM	92.5'	N/A	N/A	230v
			Submersible						

DATE	TIME	TECH	WATER LEVEL	GAL.PER MINUTE	WATER COLOR	WATER METER	COMMENTS
8/10/2021	10:58	Joe	89'	18.5	Clear/cold	426,900	
	11:00	Joe	91'	18.5	Clear/cold		
	11:01	Joe	92'	18.5	Clear/cold		
	11:12	Joe	92'	18.5	Clear/cold		
	11:23	Joe	92'	18.5	Clear/cold		
	12:41	Joe	92'	18.5	Clear/cold		
	1:03	Joe	92'	18.5	Clear/cold		
	1:30	Joe	92.5	18.5	Clear/cold		
	2:30	Joe	92.5	18.5	Clear/cold		
	3:10	Joe	92'	18.5	Clear/cold		
	3:45	Joe	92'	18.5	Clear/cold		
	4:41	Joe	92'	18.5	Clear/cold		
	4:58	Joe	92'	18.5	Clear/cold		
	5:58	Joe	92'	18.5	Clear/cold		
	6:58	Joe	92'	18.5	Clear/cold	435,780	
Recovery:	7:03	Joe	89'				

Water Quality Sample Taken: No
Pump Broke Suction During Test: No

Total Pumping Time: 8 Hrs
Estimated Total Volume Pumped: 8,880
Well Yield For Duration Of Test: 18.5 GPM

NOTES & RECOMMENDATIONS:

Eight hour drawdown test, and water level recovery.

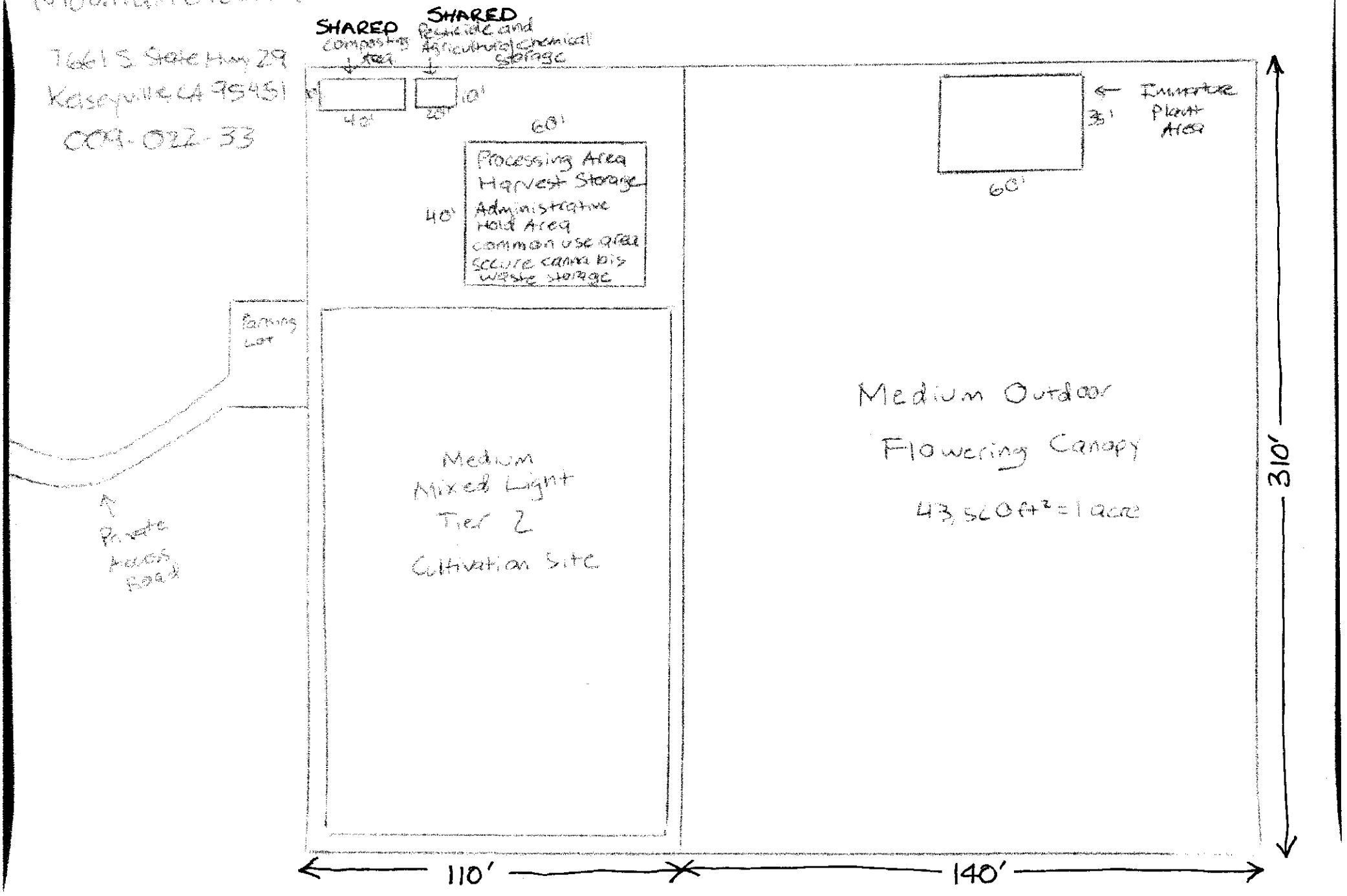
APPENDIX D

CANNABIS CULTIVATION AND PROCESSING AREA

DIAGRAM 2

Mountain Green Farms

7661 S. State Hwy 29
Kelseyville, CA 95451
009-022-33



APPENDIX E

WATER USE MANAGEMENT PLAN

Water Use Management Plan

Purpose

This Water Use Management Plan is designed to conserve Lake County's water resources and to ensure that the proposed cultivation operation's water use practices are in compliance with applicable County, State, and Federal regulations at all times. This Water Use Management Plan focuses on designing a water efficient delivery system and irrigation practices, and the appropriate and accurate monitoring and reporting of water use practices. The Water Use Plan aims to provide details for all the sources of water on the property, how it will be used and its amount of use.

A. Water Sources and Irrigation

Water is provided to MGF's proposed cultivation operation from a groundwater well, located at Latitude 38.937037, and Longitude -122.779053 (via google maps imagery). The well will pump water to 4 2,500-gallon and one 10,00-gallon steel/fiberglass water tanks through underground irrigation lines. Water will then be delivered to the plants using highly efficient drip irrigation. Water lines are a combination of PVC piping, black poly tubing, and drip lines. The water storage tanks will be equipped with float valves to prevent overflow and runoff of irrigation water when full. Additionally, safety valves will be equipped to supply lines in case the flow of water needs to be stopped in an emergency situation. A meter compliant with Title 23, Division 3, Chapter 2.7 of the California Code of Regulations will be installed and attached to the water system in order to record continuous data that will be maintained for a 5-year duration minimum. All records will be made available to all interested state and county departments upon request. The monitoring of the well will begin 3 months prior to the use of the well for cultivation.

The 2 meters to be installed on the well will be:

- A totalizing well meter that continuously measures the total water output. The consultant for the project has recommended the use of the GPI G2 Series meter depending on the well configuration. Please see attached product sheet on the final page of the management plan.
- A continuously recording water level monitor. The consultant for the project has recommended the use of the Well Watch 670. Please see attached Product sheet for more details. Please see attached product sheet on the final page of the management plan.

*If the professional installation company recommends different meters, the new well meter specifications will be supplied to water resources.

B. Projected Water Use

Due to the federally illegal status of cannabis, the industry is far behind other crops in water use studies. While few exist, it is probable that the resulting water use numbers from these studies are only accurate to a certain degree, particularly as water use is extremely dependent upon the natural conditions of the location where cultivation is taking place. According to Bauer et al. (2015), a study of water use in Northern California determined cannabis plants used approximately 22.7 liters per day, which translates to roughly 5.99 gallons per day. It has also been documented through CalCannabis's Final Programmatic Environmental Impact Report that outdoor cannabis uses between 25-35 inches per year, based on Hammon et al. (2015). The PEIR also stated that it is comparable to other crops such as corn, tomatoes, alfalfa, and hops. However, projecting cannabis water use in line with that of tomatoes (20 inches per year) would likely be the absolute minimum as the few water use studies published have been more in line with 25-35 inches per year.

It is almost a certainty that water use will differ between projects, based on soil type, irrigation method, and growing method, among other factors, however, through well monitoring these estimates can be replaced with much more robust numbers in the future. For the purposes of this Water Use Management Plan, the following table below will display water use estimates based on range of probable outcomes starting at 20 inches (a probable best case scenario) up to 35 inches (a probable worst case scenario) of water per year and a total canopy area of 43,560 ft^2. The average (27.5 inches) being the projected water use total for this project until further data is captured.

Total Project Water Use Estimates*	
Inches	Gallons
20-25 (best case scenario)	804,895 - - - 1,006,100
25-30 (likely scenario)	1,006,100 - - - 1,207,320
30-35 (worst case scenario)	1,207,320 - - - 1,408,540
Estimated Water Use Total for Project*	
27.5 (average)	***1,106,731****