HURVITZ ENVIRONMENTAL
GEOLOGIC & ENVIRONMENTAL CONSULTING

October 27, 2025

Rancho Lake, LLC
19955 Grange Road
Middletown, CA 95461

RE: Technical Memorandum and Response to Comments
19955 Grange Road
Middletown, CA
APN 014-290-08, 014-300-02, 014-300-03, 014-300-04
Hurvitz Environmental Project No. 5148.01

Rancho Lake, LLC:

Hurvitz Environmental Services, Inc. (HES) is pleased to provide this Technical Memorandum as an Addendum to the August 31, 2023, Revised Hydrogeologic Assessment Report previously prepared for the subject property in Lake County, California. This Addendum has been prepared in response to comments received regarding the project's potential groundwater impacts, particularly concerns related to well interference, and possible streamflow depletion affecting neighboring water rights along Putah Creek.

The purpose of this memorandum is to expand upon the prior assessment by providing a more detailed technical evaluation of potential drawdown effects on nearby wells. Specifically, this addendum evaluates projected drawdown and well interference using the Theis analytical method, and also presents monitoring well data from the Hidden Valley Lake Community District to further characterize groundwater trends in the region.

As with the Revised Hydrogeologic Assessment Report, the focus of this Addendum is to determine whether the proposed groundwater demand of approximately 49.2 acre-feet/year for cannabis cultivation can be sustainably met by the underlying aquifer system without creating overdraft conditions, significantly affecting neighboring well performance, or leading to a critical reduction in local groundwater or surface water resources.

During preparation of this Technical Memorandum, HES reviewed the August 31, 2023, Revised Hydrogeologic Assessment Report and identified some typographical errors and inconsistencies that arose from retaining values associated with the original, larger project scope. These discrepancies did not affect the technical analyses or overall conclusions, but to maintain accuracy in the project record, HES has prepared and is re-submitting a corrected version of the Revised Hydrogeologic Assessment Report along with this Addendum (**Appendix C**).

1.0 Introduction and Scope of Services

The applicant is seeking approval from Lake County to develop a commercial cannabis cultivation operation on the 1,627-acre ranch property, with up to 19.63 acres of outdoor canopy and associated ancillary facilities. As required by the Lake County Cannabis Ordinance, HES previously prepared a Revised Hydrogeologic Assessment to evaluate groundwater availability and potential project impacts.

This addendum has been prepared to address comments received during agency and public review, and to expand upon key technical topics previously outlined. Specifically, this memorandum provides:

- A refined evaluation of potential well interference using Theis analytical methods.
- Presentation of groundwater monitoring data from the Hidden Valley Lake Community District.
- Updated discussion of groundwater availability and project water use in light of the new assessments made.

The purpose of this addendum is to confirm that the proposed annual groundwater demand of approximately 49.2 acre-feet can be sustainably met without creating overdraft conditions, adversely affecting neighboring wells, or result in the impairment of downstream water rights.

2.0 WELL INTERFERENCE ANALYSIS

2.1 Nearby Well Locations

Nearby wells were identified through review of California Department of Water Resources (DWR) Well Completion Report Database, GIS data layers provided by the County, and field reconnaissance. Particular attention was given to wells owned by the adjacent landowner who has raised concerns, as well as other nearby agricultural and domestic wells. Well construction logs were reviewed where available to characterize aquifer conditions (depths, screened intervals, yields). These wells are summarized in **Table 1 – Well Inventory**, and mapped in their locations shown on **Plate 1 – Near-Site Well Locations**.

HES identified domestic well log information for five (5) wells on 3 properties within approximately 1.5-mile radius of the Project Well. Available well logs are included in **Appendix A**. Four (4) of the wells identified were completed to total depths between ~140-180 feet below grade (bg). The average well depth of the five wells is 141.4 feet, and the average screened interval thickness is 91 feet. The average well yield is 341 gallons per minute (gpm) and the average specific capacity is 5.64 gpm/foot drawdown. The only well less than 140 feet in total depth is the Luchetti Ranch (LR) Ag Well #1, with a total depth of only 100 feet bg and a less than average screen interval of only 55 feet. The LR Ag Well #2 and the LR domestic well both have specific capacities that are lower than the average and the LR Domestic Well l has the lowest reported yield at 100+ gpm.

TABLE 1 – Well Inventory

APN/Well Number	Well install/ Test Year	Distance to Site Well (Feet)	Surface Elevation (Feet, MSL)	Total Well Depth (Feet)	Screen Interval/ (Feet)	Total Screen (Feet)	Well Yield (GPM)	Draw-down (Feet)	Specific Capacity (GPM/FT)	Well Map #
19955 Grange Road #002299	2021	0	940	140	50-130	80	355	37	9.59	Project Well
LR Ag Well #1 #133872	1989	520	940	100	40-95	55	250	44	5.68	Ag Well #1
LR Domestic Well #0951429	2014	900	945	137	NA	NA	100+	117+/-	0.85	Domestic Well
LR Ag Well #2 #133871	1989	1,080	945	180	35-175	140	400	114	3.5	Ag Well #2
19102 Grange Road #93452	1972	8,250	958	150	30-120	90	600	70	8.57	19102 Well
Average Well Total Depth = 141.4 feet				Average Screen Thickness = 91 Feet Average Well Yield = 341 gpm				Average SC = 5.64 GPM/ft		

In general, the well logs within the area show that the subsurface is composed of materials described as sand, gravel, and minor clay from the near surface to a depth of at least 135 feet below grade (bg). Significant clays were encountered below the sands to depths of approximately 150-170 bg and hard rock was identified between 170-180 feet bg in the one well that extended to that depth. The closest well to the proposed Project Well is the LR Ag Well #1 which is approximately 520 feet away.

2.2 Well Yield Test Re-Evaluation

A pumping test of the onsite irrigation well (Well Completion Report No. 002299) was performed on July 6, 2021, by JAK Drilling & Pump. The test consisted of pumping at an average rate of approximately 355 gallons per minute (gpm) for a duration of over six hours, with drawdown and recovery measured at the well casing. The initial static water level was 17 feet below top-of-casing, and after over six hours of pumping, the stabilized water level was 54 feet below top-of-casing (37 feet of drawdown). Following termination of pumping, the well recovered to approximately 73% of pre-test water levels within 40 minutes.

This test was originally evaluated in the 2023 Revised Hydrogeologic Assessment Report to determine whether the onsite well could meet the project's estimated irrigation demand. The data demonstrated that the well is capable of producing in excess of the required daily volumes and indicated that the underlying aquifer is both productive and hydraulically responsive.

In this addendum, the well yield test is re-evaluated for the purpose of deriving aquifer parameters needed to conduct a Theis analytical model of potential well interference and long-term drawdown. The following subsections summarize the calculation of specific capacity (3.2.1), transmissivity (3.2.2), and storativity (3.2.3) from the available data. These parameters are then applied in Section 3.3 (Theis Analytical Method) to estimate drawdown in neighboring wells over various pumping durations.

2.2.1 Specific Capacity

Specific Capacity (SC) is the measure of the constant flow rate recorded during a pumping test, divided by the amount of stabilized drawdown observed during the test. The SC values are expressed in gpm/foot of drawdown, and can be a measure of a well's sustainable yield. Static water level in the Project Well at the beginning of testing was 17 feet bgs and stabilized at 54 feet bgs (37 ft. drawdown), which resulted in a specific capacity of 9.59 gpm/foot of drawdown (i.e., 355 gpm/37 ft).

Specific Capacity can be used to predict the potential maximum well yield by multiplying the SC by the amount of available well drawdown. If we assume that 66% of well drawdown is the maximum allowable drawdown, then we can calculate the maximum discharge rate of the Project Well as shown below.

> 9.59 gpm/ft drawdown (SC of Site Well) x 52.8 ft (66% of avail. drawdown (80ft)) =
> **506 gpm = Maximum Potential Yield for Project Well**

Given the nature of alluvial aquifers, as discussed in 2023 Revised Hydrology Report prepared by HES, it is considered likely that the Project Well could produce these theoretical volumes for a sustained period of time.

2.2.2 Transmissivity

Aquifer Transmissivity **(T)** refers to the ability of an aquifer to transmit water horizontally through its entire thickness. It quantifies how much water can flow through a unit width of the aquifer over a unit time, under a unit hydraulic gradient. As discussed in the 2023 Revised Hydrogeologic Assessment Report, an approximate relationship between specific capacity calculated from the pumping test, and aquifer transmissivity was used to obtain aquifer characteristics and estimate a potential radius of pumping influence. Using this method, transmissivity was estimated for an unconfined aquifer, using the relationship of Specific Capacity (yield/drawdown) x the coefficient of 1,500 as shown below:

9.59 gpm/ft. drawdown (specific capacity) x 1,500 (unconfined aquifer coefficient) =
14,385 gpd/ft or 1,920 ft²/day = Transmissivity of Site Aquifer

Based on the relationship between T and Hydraulic Conductivity (K) we can calculate the aquifer's K value using the following relationships and equations[1]:

K = T/D (Aquifer Thickness)
K = 14,385 gpd/ft (transmissivity from Site Well) / 80 ft (Site Well screen) =
179.8 gpd/ft^2 = Aquifer Hydraulic Conductivity

2.2.3 Storativity

Aquifer storativity (S) represents the volume of water released from storage per unit surface area of aquifer per unit decline in hydraulic head. It is a key parameter in evaluating well interference and streamflow depletion, but accurate calculation requires time–drawdown data from at least one observation well. Since the project pumping test was conducted without an observation well, storativity could not be directly calculated from field data.

In lieu of site-specific test data, a representative storativity value of **0.01** has been adopted for use in the Theis analytical model. This is consistent with the published range for unconfined alluvial aquifers (Freeze and Cherry, 1979; Fetter, 2001)[1]. The selected value provides a conservative basis for drawdown modeling, ensuring that potential interference effects are not underestimated.

2.3 Theis Analytical Method

The aquifer parameters derived from the Project Well test provide the necessary inputs for evaluating potential well interference using the Theis analytical method. Specifically, the calculated transmissivity and assumed storativity value, together with the project's estimated

[1] Freeze, R.A. and Cherry, J.A. (1979). *Groundwater*. Prentice-Hall, Englewood Cliffs, NJ. 604

pumping rates and distances to nearby wells, allow for simulation of drawdown over varying time intervals. The following section presents the application of the Theis solution to estimate drawdown at selected observation points and to assess the potential for the project well to affect neighboring groundwater users.

To calculate the predicted drawdown in the observation wells over a 3-day, 90-day and 180-day time period we used the Theis equation[2]. To use this method, we relied on the previously estimated storativity value (0.01) for the alluvial aquifer, the aquifer transmissivity calculated from the Site Well test (1,920 ft²/day). Also, for this long-term assessment of drawdown, we used an estimated pumping rate of 60.5 gpm for the Site Well, representing the average cannabis related groundwater demand over the dry season (180 days). The results of the calculations for each of the nearsite wells are tabulated below on **Table 2 – Predicted Drawdown Over Time.**

TABLE 2 – PREDICTED DRAWDOWN OVER TIME

Well ID	Distance to Pumped Well	Pumping Rate	Available Water Column	Drawdown at 3-days	Drawdown at 90-days	Drawdown at 180-days	Total Predicted Effect (180-days)
	feet	gpm	-----feet-----				%
LR Ag#1	520	60.5	84	0.81	2.4	2.73	2.9%
LR Domestic	900	60.5	117	0.38	1.87	2.21	1.9%
LR Ag#2	1,080	60.5	162	0.27	1.70	2.03	1.25%
19102 Grange Rd	8,250	60.5	121	0	0.11	0.28	0.23%

To evaluate if the predicted drawdowns calculated on Table 2 would have adverse effects on nearsite wells, we looked at the Mendocino City Community Services District (MCCSD) Ordinance No. 2021-01 which defines an adverse effect on nearsite wells as greater than 10 percent drawdown of the available water column. Predicted drawdowns for the three time periods ranged from 0.23% to 2.9% of drawdown in the nearsite wells. The highest predicted impact occurred at LR Ag Well #1, the closest neighboring well at 520 feet, however only a 2.9% predicted drawdown would occur after 180 days of continuous pumping. None of the predicted drawdowns exceeded 10 percent of the available drawdown, therefore, based on the MCCSD criteria, no adverse effects to water levels would be expected after 90 or 180-days of pumping the Site Well. It should also be noted that this analysis assumes continuous pumping at the average project demand (60.5 gpm) for the entire 180-day dry season, which represents a conservative worst-case condition compared to typical irrigation schedules. These predicted drawdowns are well within the margin of error for most pumping test analyses and fall far below thresholds typically used by agencies to define adverse well interference further supporting the conclusion that the Project Well can operate at projected demand without material impact on nearby groundwater users.

2 https://www.ose.nm.gov/Hydrology/Theis/index.html

3.0 REGIONAL GROUNDWATER CONDITIONS

3.1 Hidden Valley Lake Monitoring Data

To supplement the site-specific well test data and the previously performed stream depletion assessment, HES reviewed long-term groundwater monitoring records collected by the Hidden Valley Lake Community Services District (**Appendix B**). Monitoring wells MW-5A and MW-5B, located in close proximity to the project site, provide more than 25 years of monthly groundwater elevation data. These records demonstrate stable aquifer conditions, with seasonal water level fluctuations driven primarily by precipitation, and no evidence of long-term decline. The data supports the conclusion that the Coyote Valley Groundwater Basin can sustainably accommodate the project's proposed groundwater demand.

3.2 Groundwater Elevation Trends

HES reviewed the long-term monitoring records from the Hidden Valley Lake Community Services District (District) for the Luchetti monitoring wells MW-5A (deep; perforated 90–100 feet bgs) and MW-5B (shallow; perforated 30–40 feet bgs). The wells are located immediately east of the project area, within the same alluvial valley setting and aquifer system (**Plate 1**). Top-of-casing elevations are 942.15 feet (MW-5A) and 942.14 feet (MW-5B). The data set includes monthly measurements from mid-1998 through late-2024.

Observed patterns

- Groundwater elevations in both wells exhibit consistent seasonal behavior: gradual declines through late summer/early fall followed by recovery during the wet season.
- MW-5A and MW-5B track closely through time, with small, persistent vertical gradients (typically on the order of a few tenths of a foot), indicating strong hydraulic connection between the shallow and deeper portions of the alluvial aquifer near the site.
- Multi-year lows correspond to regional drought periods (e.g., 2007–2009, 2014–2015, and 2021–2022), while marked recoveries occur in wetter years (e.g., 2017, 2019, 2023–2024).
- Over the full period of record, the hydrographs do not display a sustained downward trend. Rather, interannual variability is driven predominantly by precipitation and basin-wide recharge conditions.

Magnitude of fluctuation

- Typical seasonal amplitude (peak to trough within a water year) is on the order of *7-8* feet in both wells MW-5A and MW-5B.
- The long-term range (historic min to max) is approximately 20 feet in both MW-5A and MW-5B (which occurred only once in 1999), with current (2023–2024) levels within/above the typical seasonal amplitude.

Relevance to project water supply

- The tight correspondence between shallow and deep completions indicates that project-scale pumping stresses will be shared within a vertically connected alluvial system rather than concentrated within a thin, isolated horizon.
- Seasonal drops during dry months are followed by reliable recovery in subsequent wet seasons, consistent with recharge-dominated controls and with the District's conclusion that the basin is not experiencing long-term depletion.
- Given the project's average dry-season pumping rate (≈60.5 gpm; Section 2.3) and the modest, modeled drawdowns at nearby wells (**Table 2**), the MW-5A/B record supports the conclusion that the regional aquifer can accommodate the project's demands without inducing persistent declines.

3.3 Regional Aquifer Sustainability

The evaluation of site-specific pumping tests, nearby monitoring well trends, and regional groundwater conditions collectively indicate that the Coyote Valley aquifer system has adequate capacity to support the project's anticipated demand. Modeled stream depletion was shown to be minor relative to natural flow variability, and predicted drawdowns in neighboring wells were well below thresholds for adverse effects. Accordingly, no significant adverse impacts to groundwater availability or surface water flows are anticipated as a result of the project.

4.0 CONCLUSIONS

HES has completed this technical Addendum to the hydrogeologic evaluation of the proposed Project Well and its potential effects on neighboring wells, and the broader Coyote Valley aquifer system. The findings from field data, analytical modeling, and review of regional groundwater monitoring are summarized below:

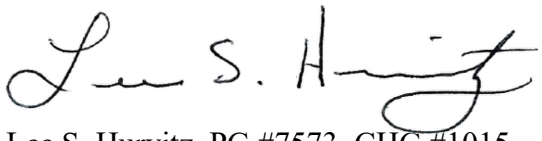
- **Well Interference:** A Theis analytical model was applied using aquifer parameters derived from the Project Well yield test. Predicted drawdowns in nearby domestic and agricultural wells are minimal, ranging from 0.2% to 2.9% of available drawdown after 180 days of continuous pumping. These values are well below the 10% decline threshold commonly used as a criterion for adverse effects, and therefore, no significant interference to neighboring wells is anticipated.
- **Monitoring Well Trends:** Long-term groundwater level data from nearby Hidden Valley Lake monitoring wells (MW-5A and MW-5B) demonstrate stable seasonal fluctuations without evidence of long-term decline. These data indicate that the aquifer is resilient and capable of sustaining municipal and agricultural pumping demands under a range of hydrologic conditions.
- **Regional Groundwater Conditions:** Review of basin-scale hydrogeologic information confirms that the Coyote Valley Basin is designated as a very low priority basin under SGMA and has shown stable groundwater conditions over decades of monitoring. Groundwater levels generally recover following average or above-average precipitation, and no evidence of chronic overdraft has been observed.
- **Neighboring Well Conditions:** The adjacent landowner's nearest well (LR Ag Well #1), which has been cited as experiencing reduced supply, is considerably shallower than the regional average and constructed with a shorter screened interval. Their additional wells (LR Ag Well #2 and LR Domestic Well) also exhibit below-average specific capacities compared to other local wells. These construction and performance limitations, combined with the age of the wells, provide a more plausible explanation for their reduced productivity than any scenario involving regional aquifer overdraft. Available data indicate that pumping from the Project Well is unlikely to cause or exacerbate performance issues at the neighboring wells. Regional monitoring further demonstrates stable groundwater conditions over an extended period of time and under diverse hydrologic scenarios.

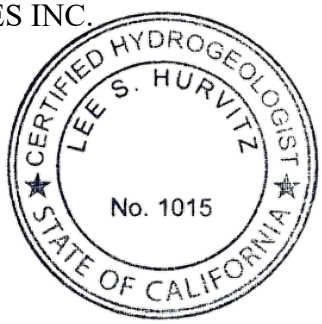
Overall Conclusion:

Based on the collective lines of evidence, groundwater pumping from the Project Well is expected to meet project demands without creating significant adverse effects to neighboring wells, Putah Creek flows, or the regional aquifer system. The results demonstrate that both onsite groundwater availability, and long term regional trends support a finding of negligible impact, and that the project is hydrologically sustainable under average hydrologic conditions.

We trust that this provides the information you require at this time. If you have any questions or follow up comments, please feel free to contact at 707-824-1690 or www.hurvitzenvironmental.com.

Sincerely,
HURVITZ ENVIRONMENTAL SERVICES INC.





Lee S. Hurvitz, PG #7573, CHG #1015
Certified Hydrogeologist

Attachments:

Plate 1,	Site Plan
Appendix A,	Well Completion Reports
Appendix B,	Hidden Valley Lake Monitoring Well Data: MW-5A/5B
Appendix C,	2023 Revised Hydrogeologic Assessment Report (Edited)

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CA PG# 7573

Site Plan -Detail

19955 Grange Road
Middletown CA

JOB NUMBER: 5148.01
DATE: 10/22/25
PLATE: 1B

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CA PG# 7573

Site Plan

19955 Grange Road
Middletown CA

JOB NUMBER: 5148.01
DATE: 10/22/25
PLATE: 1A

APPENDIX A
Well Completion Reports

State of California

Well Completion Report

Form DWR 188 Submitted 2/23/2021

WCR2021-002299

Owner's Well Number | Date Work Began 02/02/2021 | Date Work Ended 02/11/2021

Local Permit Agency Lake County Health Services Department - Environmental Health Division

Secondary Permit Agency | Permit Number WE-5548 | Permit Date 01/20/2021

Well Owner (must remain confidential pursuant to Water Code 13752)

Name James Comstock

Mailing Address C/O All Good LLC

2349 Circadian Way

City Santa Rosa State Ca Zip 95407

Planned Use and Activity

Activity New Well

Planned Use Water Supply Irrigation - Agriculture

Well Location

Address 19955 Grange RD

City Middletown Zip 95461 County Lake

Latitude 38 Deg. 46 Min. 34.7 Sec. N Longitude -122 Deg. 31 Min. 28 Sec. W

Dec. Lat. 38.7763056 Dec. Long. -122.5244444

Vertical Datum | Horizontal Datum WGS84

Location Accuracy 20 Ft | Location Determination Method

APN 014-029-08

Township 11 N

Range 06 W

Section 28

Baseline Meridian Mount Diablo

Ground Surface Elevation

Elevation Accuracy

Elevation Determination Method

Borehole Information

Orientation Vertical | Specify

Drilling Method Direct Rotary | Drilling Fluid Bentonite

Total Depth of Boring 160 Feet

Total Depth of Completed Well 140 Feet

Water Level and Yield of Completed Well

Depth to first water | (Feet below surface)

Depth to Static Water Level 22 (Feet) | Date Measured 02/11/2021

Estimated Yield* 300 (GPM) | Test Type Air Lift

Test Length 1 (Hours) | Total Drawdown 113 (feet)

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

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	20	Sand, soil and gravel
20	79	Sand and gravel
79	90	Sand and clay
90	112	Gravel and sand
112	129	Gravel
129	160	Clay

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	50	Blank	PVC	OD: 8.625 in. | SDR: 17 | Thickness: 0.508 in.	0.508	8.625			
1	50	130	Screen	PVC	OD: 8.625 in. | SDR: 17 | Thickness: 0.508 in.	0.508	8.625	Milled Slots	0.032	
1	130	140	Blank	PVC	OD: 8.625 in. | SDR: 17 | Thickness: 0.508 in.	0.508	8.625			

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	50	Cement	Portland Cement/Neat Cement		Seal
50	160	Filter Pack	Other Gravel Pack	3/8	Pea Gravel

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	50	14.75
50	160	12.25

Certification Statement

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

Name: WEEKS DRILLING AND PUMP CO (Person, Firm or Corporation)

PO BOX 176 (Address) | SEBASTOPOL (City) | CA (State) | 94573- (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 02/23/2021 (Date Signed) | 177681 (C-57 License Number)

Attachments

014-290-08.pdf - Location Map

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N

Latitude Deg/Min/Sec

W

Longitude Deg/Min/Sec

TRS:

APN:

11N/06W-28M

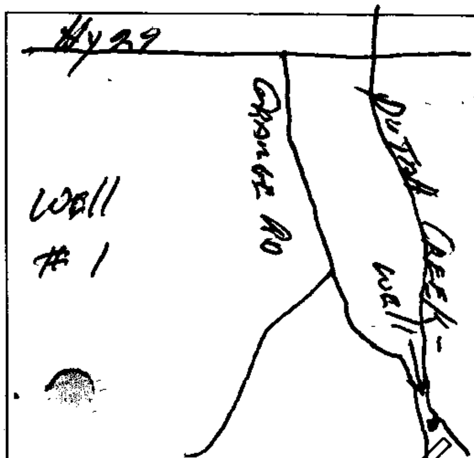
ORIGINAL
File with DWR

Notice of Intent No.
Local Permit No. or Date

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

Do not fill in
No. 133872
State Well No.
Other Well No.

(2) LOCATION OF WELL (See instructions):
County: Lake —   Owner's Well Number
Well address if different from above: Luchetti Ranch End of Grange Rd
Township: Middletown Range: 6 W-11N Section: 27 28 28
Distance from cities, roads, railroads, fences, etc. T11N R6W - Sec 28
2 ½ miles in from end Grange Road



WELL LOCATION SKETCH

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

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

(5) EQUIPMENT:
Rotary [ ] Reverse [ ]
Cable [X] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:
Yes [ ] No [X] Size
Diameter of bore 12 3/4
Packed from ___ to ___ ft.

(7) CASING INSTALLED:
Steel [X] Plastic [ ] Concrete [ ]

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

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
+2	100	12¾	188	40	98	1/8 X 3"

(9) WELL SEAL:
Was surface sanitary seal provided? Yes [X] No [ ] If yes, to depth 20 ft.
Were strata sealed against pollution? Yes [ ] No [X] Interval ___ ft.
Method of sealing: Cement —

(10) WATER LEVELS:
Depth of first water, if known 22 ft.
Standing level after well completion 16 ft.

(11) WELL TESTS:
Was well test made? Yes [X] No [ ] If yes, by whom? Rain Bow
Type of test: Pump [X] Bailer [ ] Air lift [ ]
Depth to water at start of test 16 ft. At end of test 16 ft.
Discharge 450+ gal/min after 4 hours Water temperature Cold
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 100 ft. Depth of completed well 100 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

Top - 60' Clay + Gravels - Brown
60 - 100' Blue Clay + Gravels —
Well - pumping 450 Gpm
At - 160'

MAR 23 1990

Work started April 6 1989 Completed April 25 1989

WELL DRILLER'S STATEMENT: 415
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
SIGNED [signature] (Well Driller)
NAME Eugene Louisone
(Person, firm, or corporation) (Typed or printed)
Address PO Box 15
City Lower Lake Zip 95457
License No. 196290 Date of this report May 17-89

CONFIDENTIAL
DO NOT FOR PUBLIC USE
WATER CODE SEC. 13752

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

11N/06W-28M

ORIGINAL

File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do not fill in

No. 133871

Notice of Intent No.

Local Permit No. or Date

State Well No.

Other Well No.

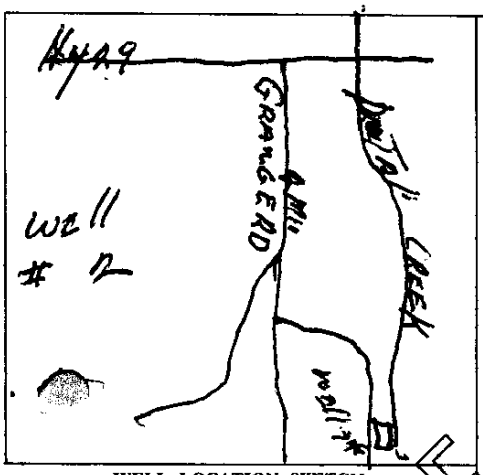
(2) LOCATION OF WELL (See instructions):

County LAKE Owner's Well Number

Well address if different from above LUCHETTI RANCH END GRANGE RD

Township MIDDLETOWN Range 6-W 11 N Section 27 28

Distance from cities, roads, railroads, fences, etc. 11N/6W-28
2½ MILES IN FROM GRANGE ROAD



WELL LOCATION SKETCH

(3) TYPE OF WORK:

New Well [X] Deepening [ ]
Reconstruction [ ]
Reconditioning [ ]
Horizontal Well [ ]
Destruction [ ] (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:

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

(5) EQUIPMENT:

Rotary [ ] Reverse [ ]
Cable [X] Air [ ]
Other [ ] Bucket [ ]

(6) GRAVEL PACK:

Yes [ ] No [X] Size
Diameter of bore 18 3/4"
Packed from to ft.

(7) CASING INSTALLED:

Steel [X] Plastic [ ] Concrete [ ]

From ft.	To ft.	Dia. in.	Gage or Wall
+2	180	16"	.188

(8) PERFORATIONS:

Type of perforation or size of screen

From ft.	To ft.	Slot size
35	175	18 X 3"

(9) WELL SEAL:

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

(10) WATER LEVELS:

Depth of first water, if known 30 ft.
Standing level after well completion 19 ft.

(11) WELL TESTS:

Was well test made? Yes [X] No [ ] If yes, by whom? Rain Bow
Type of test Pump [X] Bailer [ ] Air lift [ ]
Depth to water at start of test 18 ft. At end of test 18 ft
Discharge 800+ gal/min after 4 hours Water temperature Cold
Chemical analysis made? Yes [ ] No [X] If yes, by whom?
Was electric log made? Yes [ ] No [X] If yes, attach copy to this report

(12) WELL LOG: Total depth 190 ft. Depth of completed well 190 ft.

from ft.	to ft.	Formation (Describe by color, character, size or material)
0	35	Top Soil - Brown
35	60	Clay & Gravels - Brown
60	62	Gravel - Water
62	105	Blue Clay -
105	110	Rock -
110	135	Blue Gravel - Water
135	170	Soft Blue -
170	190	Boulders
150		Bed Rock -
Test - pumped 400 GPM		
DD - 130'		

DO NOT USE FOR PUBLIC USE
WATER CODE SEC 13752

MAR 23 1999

Work started May 6 19 99 Completed May 15 19 99

WELL DRILLER'S STATEMENT: 415

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

SIGNED (Well Driller)

NAME EUGENE LOUISOINE
(Person, firm, or corporation) (Typed or printed)

Address PO BOX 65

City LOWER LAKE Zip 95457

License No. 461290 Date of this report MAY-17-99

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

ORIGINAL
File with DWR

APR - 1 2014

Page ___ of ___

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 0951429

DWR USE ONLY — DO NOT FILL IN
11N/06W-29
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. ___
Date Work Began 3/6/2014, Ended 3/13/2014
Local Permit Agency Lake County Environmental Health
Permit No. WE 3005 Permit Date 3/5/2014

GEOLOGIC LOG

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

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	5	Brown Soil
5	18	Brown Clay
18	31	Brown Sand + Gravel
31	40	Blue Clay
40	45	Brown Sand
45	103	Blue Clay w/some gravel
103	137	Blue Green gravels with Clay
137	168	Hard Black + Blue Vol. Rock Very Broken

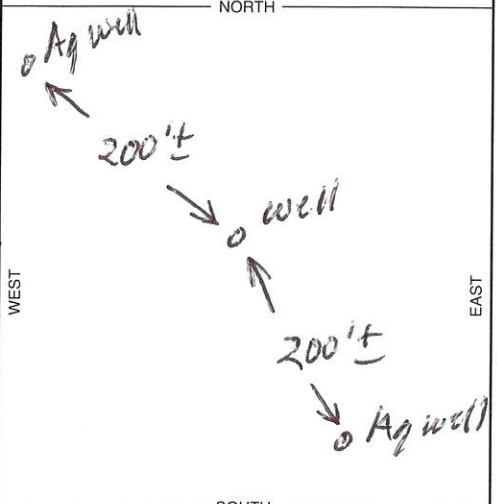
TOTAL DEPTH OF BORING 168 (Feet)
TOTAL DEPTH OF COMPLETED WELL 168 (Feet)

[redacted]

WELL LOCATION

Address 21333 Orange Rd.
City Middletown
County Lake
APN Book 014 Page 400 Parcel 040
Township 11N Range 06W Section 29
Lat ___ DEG. ___ MIN. ___ SEC. N
Long ___ DEG. ___ MIN. ___ SEC. W

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")*

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 25± (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 20 (Ft.) & DATE MEASURED 3/12/2014
ESTIMATED YIELD 100± (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	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	137	15"	X				PVC/F480	8"	SDR 21	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	2	X			
2	22		X		
22	135			X	pea gravel
135	137		X		

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 P.O. Box 951 CITY Lower Lake STATE CA ZIP 95457
Signed Dan McMullen C-57 LICENSED WATER WELL CONTRACTOR
DATE SIGNED 3/14/2014 C-57 LICENSE NUMBER 533152

DWR 188 REV. 05-03 IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM OSP 03 78836

CENTRAL DIST

ON MICROFILM

ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In
№ 93452
State Well No.
Other Well No. 11N/6W 29E

(1) OWNER:
Na
Ad

(2) LOCATION OF WELL:
County LAKE. Owner's number, if any
Township, Range, and Section
Distance from cities, roads, railroads, etc. 5 mi N. of Middletown [illegible] off of Hy 53 on Grange Rd.

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

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

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Other ☐

(6) CASING INSTALLED:
STEEL: SINGLE ☒ DOUBLE ☐ OTHER:

If gravel packed

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	150	12 3/4	188			

Size of shoe or well ring: 1/2 x 4" Size of gravel:
Describe joint But weld.

(7) PERFORATIONS OR SCREEN:
Type of perforation or name of screen Central Valley Mill Cut.

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
70	120			7/16 x 3"

(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.
From ft. to ft.
Method of sealing

(9) WATER LEVELS:
Depth at which water was first found, if known ~~[illegible]~~ 28 ft.
Standing level before perforating, if known 28 ft.
Standing level after perforating and developing 29 ft.

(10) WELL TESTS:
Was pump test made? Yes ☒ No ☐ If yes, by whom? Hopkins
Yield: 600 gal./min. with 70 ft. drawdown after 4 hrs.
Temperature of water Cold Was a chemical analysis made? Yes ☐ No ☒
Was electric log made of well? Yes ☐ No ☒ If yes, attach copy

(11) WELL LOG:
Total depth 150 ft. Depth of completed well 150 ft.
Formation: *Describe by color, character, size of material, and structure*
0 ft. to 28 ft.
Top Soil Black
28-65 Good Gravel
65-150 Clay & Gravel

CONFIDENTIAL LOG
Water Code Sec. 13752

Work started Sept. 10 1972, Completed Sept. 20 1972

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 Eugene Lovisone
(Person, firm, or corporation) (Typed or printed)

Address PO Box 65
Lower Lake Ca.

[SIGNED] Eugene Lovisone
(Well Driller)

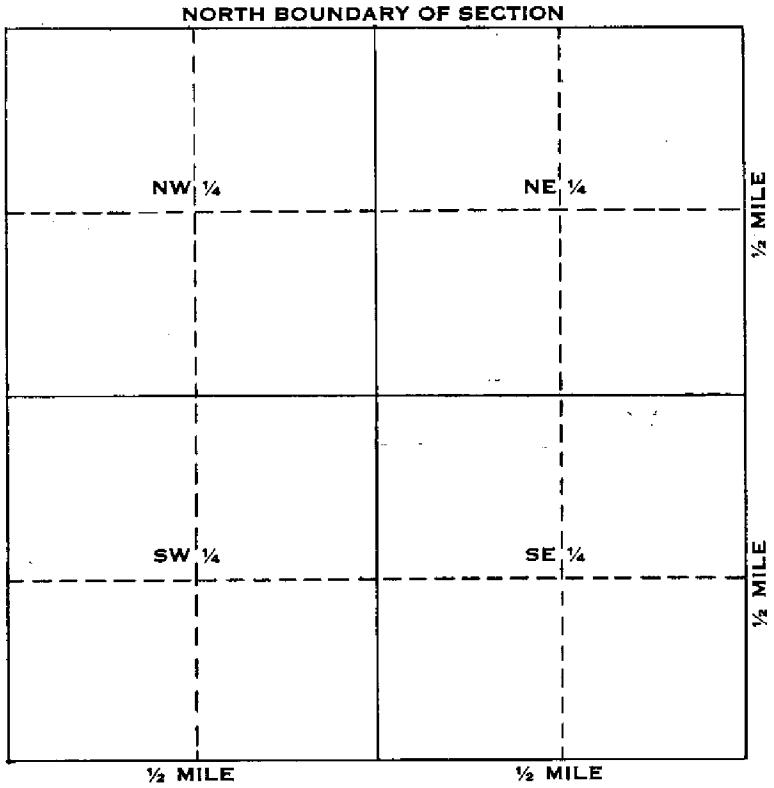
License No. 196290 Dated Oct. 10, 1972

SKETCH LOCATION OF WELL ON REVERSE SIDE

DWR 188 (REV. 9-68)

25179-950 9-68 50M TRIP △D OSP

WELL LOCATION SKETCH

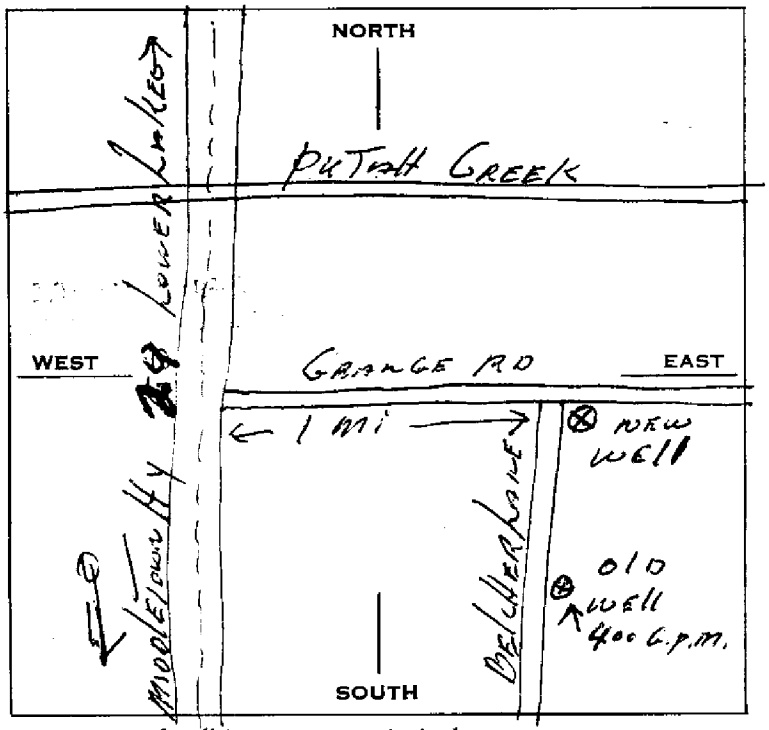


Township [redacted] N/S

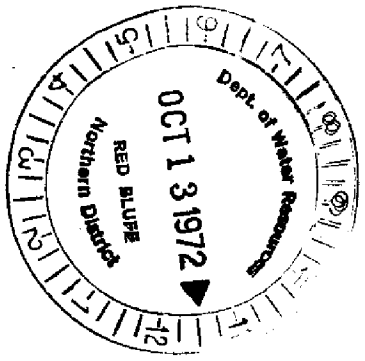
Range [redacted] W

Section No. 27

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.



LUCHETTI RANCH MONITORING WELL LOGS

(MW 5A, MW 5B)

Wells 5A + 5B

The Geoservices Group

October 27, 1998
Job No. 108.07.01

James C. Hanson Consulting Civil Engineer
444 North Third Street, Suite 400
Sacramento, California 95814

5A 5B

Monitoring Well Installation
MW-~~4A~~ and ~~4B~~, Luchetti Ranch
Hidden Valley Lake CSD
Lake County, California

Gentlemen:

This letter summarizes the drilling activities and transmits our geologic log associated with the installation of monitoring well MW-4A and -4B for the Hidden Valley Lake Community Services District in Lake County, California. The wells were drilled on the Luchetti property, north of Grange Road and about 2.53 miles southeast of Highway 29, at the location shown on the attached Location Map, Plate 1. Our scope of services consisted of logging the conditions encountered during drilling of the well boring, providing geologic input to the construction of the wells, and presenting the findings in this letter.

Field Activities

On June 1 and 2, 1998, our engineering geologist observed the drilling of the boring for wells MW-4A and 4B by Weeks Drilling and Pump Company of Sebastopol, California. The well boring was drilled to a total depth of 100 feet, using a truck-mounted Failing 1500 rotary wash drill rig, equipped with a 7-7/8 inch diameter bit. The subsurface conditions encountered were logged by observing the drill cuttings circulated out of the borehole. The lithologic log for the boring is attached as Plate 2. The alluvial soils encountered were classified according to the Unified Soil Classification System described on Plate 3.

At the completion of drilling, the boring was flushed with clean water and two monitoring well casings were installed. The well completion detail is presented on Plate 2. The wells were constructed of 2-inch diameter Schedule 40 PVC casing, with 0.020-inch machine-slotted well screens. The deeper well casing (MW-4A) was screened from a depth of 90 to 100 feet and the second, shallower well (MW-4B) was screened from a depth of 30 to 40 feet. The dual well completion was performed to allow measurement of slight differences in

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Phone • 707-823-9290 • Fax : 707-823-9218

water levels, as an indicator of vertical ground-water gradients. The static water level was obscured by the bentonite mud used to drill the boring and we were not able to measure a water level at the time of drilling.

The annular space around the screened interval of each well consists of Lonestar #3 sand. A bentonite seal was placed above the sandpack from a depth of 20 to 16 feet. A surface grout seal, consisting of cement with approximately 5% bentonite was placed under the observation of Mr. Manual Ramirez of the Lake County Department of Environmental Health. The well casings extend above grade and are housed within a locking steel well vault.

Interpretation of Subsurface Conditions

Wells MW-1 through MW-3, previously installed further west, encountered predominantly clean sands and gravels, indicative of stream channel deposits. The boring for MW-4A and 4B encountered interbedded sandy gravel, gravelly sand, clayey sand, and sandy clay alluvial strata to the depth explored. The clean sand and gravel units (soil symbols SP and GP) appear to represent stream channel deposits, possibly deposited as the main stream channel occasionally shifted across the valley bottom, or from tributaries. These strata are interbedded with finer grained materials that are more likely overbank and flood plain deposits, somewhat more removed from the main channel. We assume that ground water in the more permeable sand and gravel strata is at least partially confined.

We trust this letter provides the information you require. If you have questions about our findings, please call the undersigned at (707) 823-9290.

Very truly yours,
The Geoservices Group

David H. Peterson

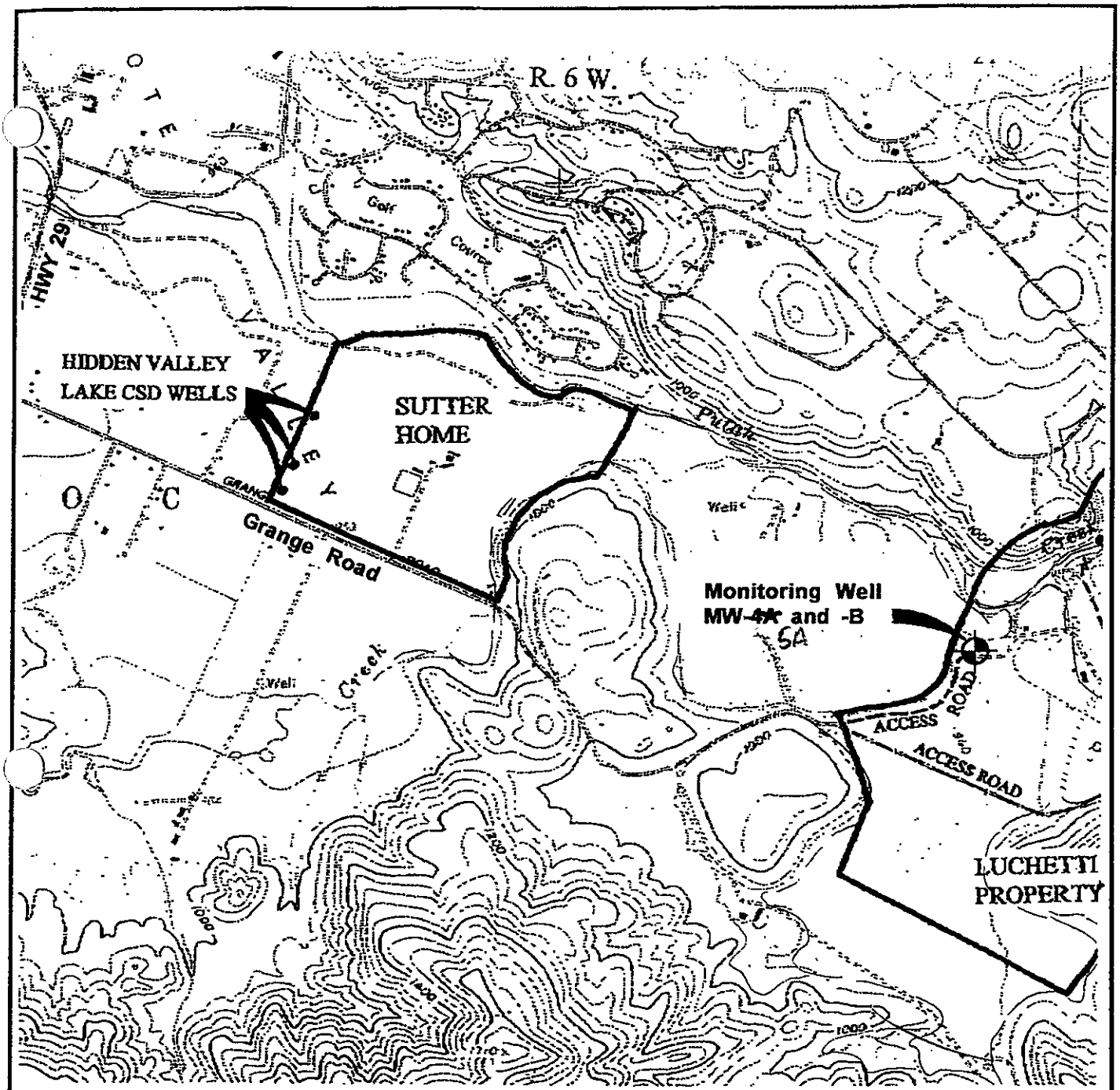
David H. Peterson
Engineering Geologist - 1186

REGISTERED GEOLOGIST
DAVID H. PETERSON
No. 1186
CERTIFIED
exp 12-31-98
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Attachments: Location Map, Plate 1
Log of Boring MW-4A and B, Plate 2
Unified Soil Classification System, Plate 3

DHP:dhp\1080701.MWI

Original and two copies submitted



Reference: U.S. Geological Survey, Middletown 7.5 Minute Quadrangle.

The Geoservices Group

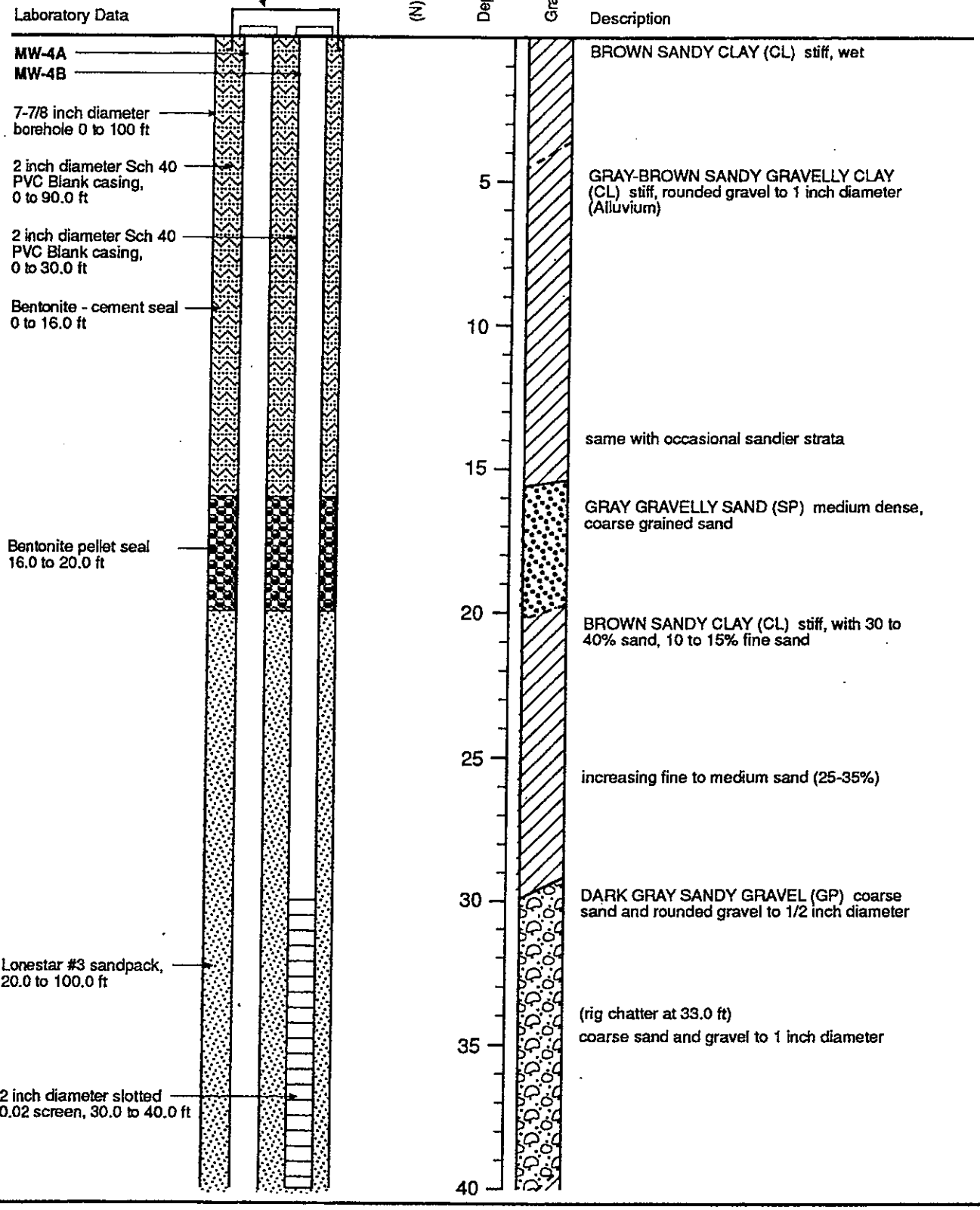
Location Map
Hidden Valley Lake CSD
Lake County, California

PLATE
1

Job Number: 108.07.01 | Drawn: DHP | Approved: DHP | Date: 10/98

Log of Boring MW-#A and B

Job Number 108.07.01 Date Completed 6-1-98
Drilling Method 7-7/8" Rotary Wash Depth 100 ft
Logged by DHP Elevation



The Geoservices Group

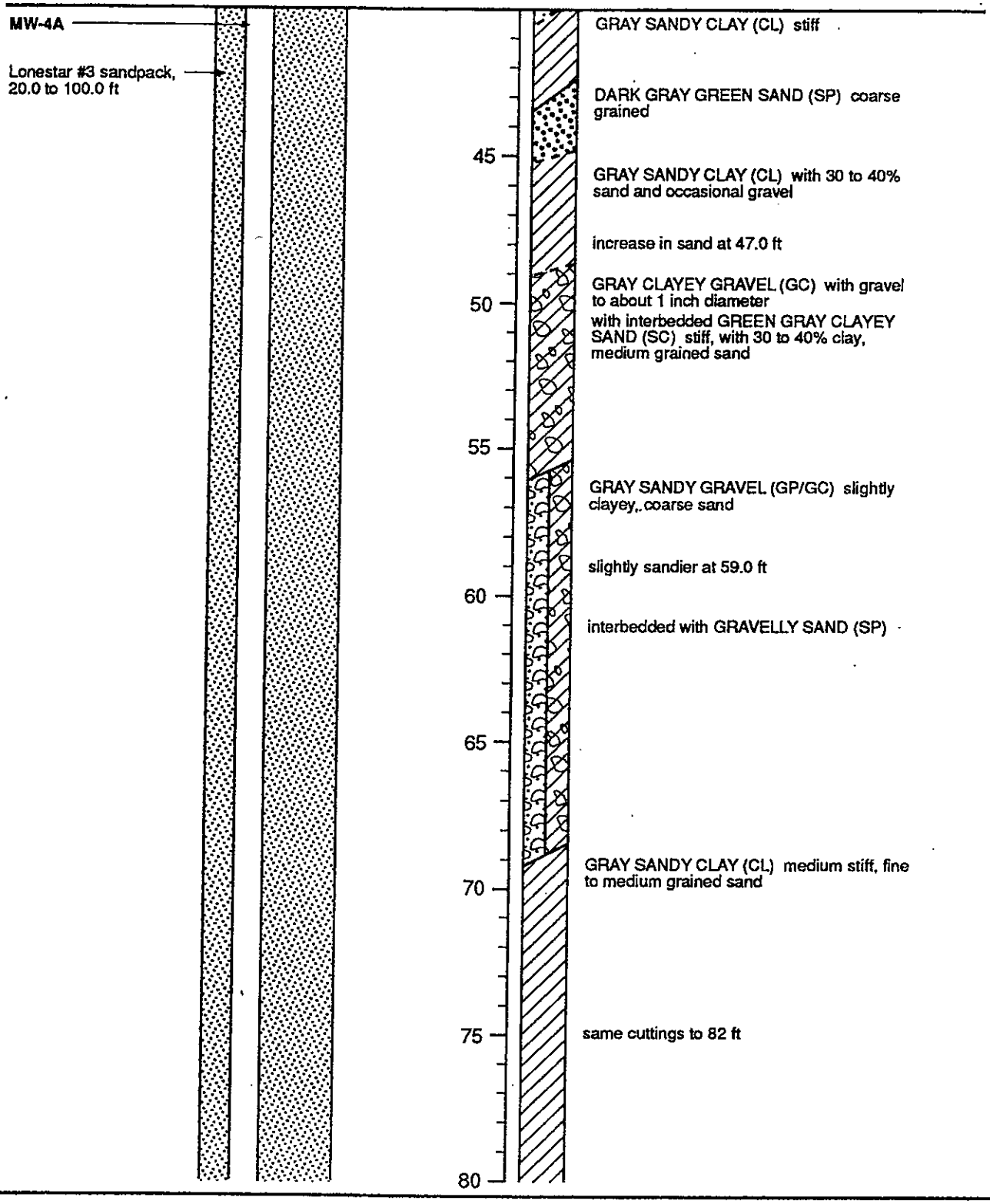
Log of Boring MW-4A and B
Hidden Valley Lake CSD
Lake County, California

PLATE **2**

Job Number: 108.07.01 Drawn: PM Approved: DHP Date: 6/98

Log of Boring MW-4A and B, cont.

Job Number 108.07.01 Date Completed 6-1-98
Drilling Method 7-7/8" Rotary Wash Depth 100 ft
Logged by DHP Elevation



The Geoservices Group

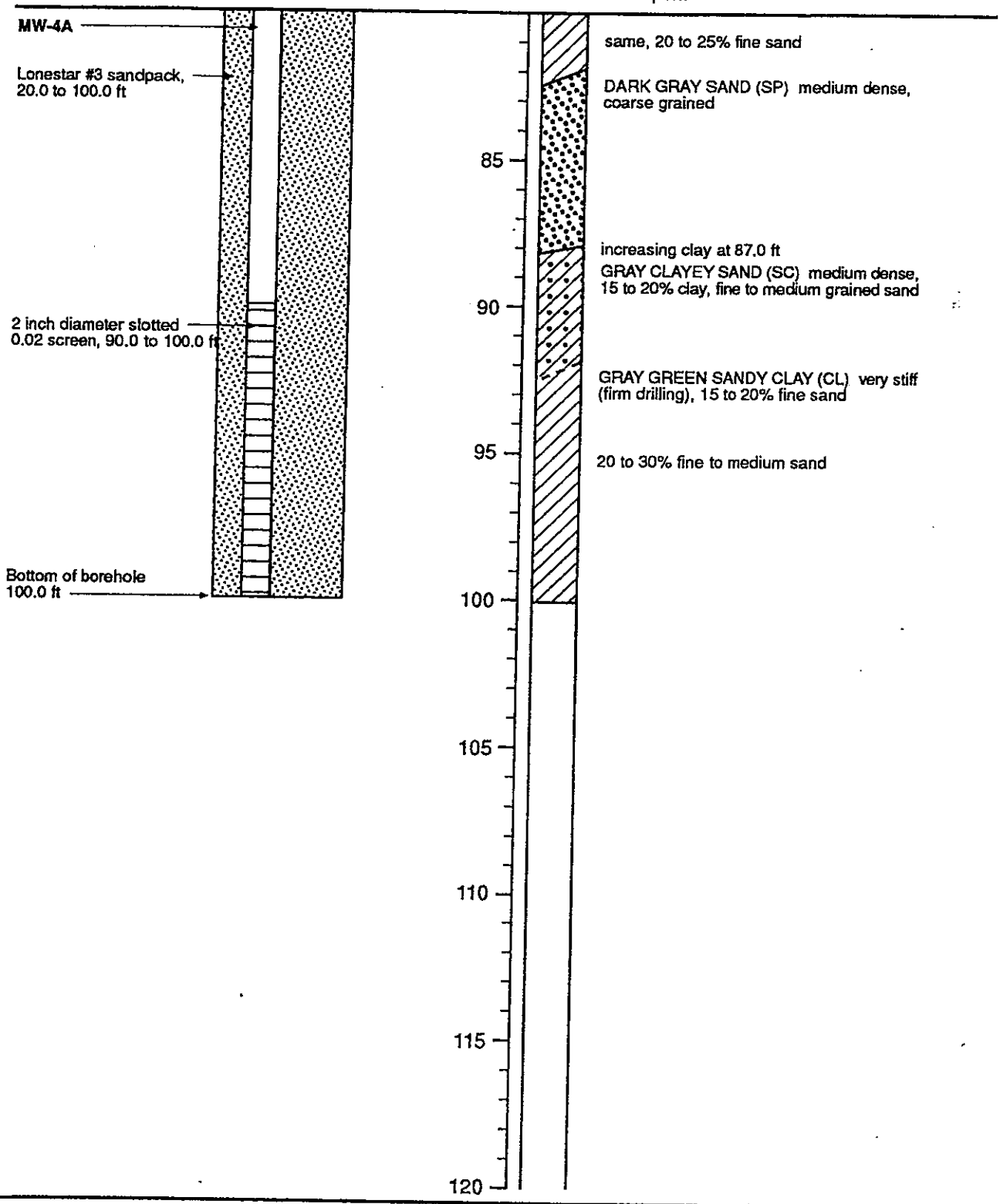
Log of Boring MW-4A and B, continued
Hidden Valley Lake CSD
Lake County, California

PLATE **2**

Job Number: 108.07.01 Drawn: PM Approved: DHP Date: 6/98

Log of Boring MW-4A and B, cont.

Job Number 108.07.01 Date Completed 6-1-98
Drilling Method 7-7/8" Rotary Wash Depth 100 ft
Logged by DHP Elevation



The Geoservices Group

Log of Boring MW-4A and B, continued PLATE **2**
Hidden Valley Lake CSD
Lake County, California

Job Number: 108.07.01 Drawn: PM Approved: DHP Date: 6/98

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE TO NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN No. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS WITH LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS

UNIFIED SOIL CLASSIFICATION - ASTM D2487-85

Perm	–	Permeability
Consol	–	Consolidation
LL	–	Liquid Limit (%)
PI	–	Plastic Index (%)
G_s	–	Specific Gravity
MA	–	Particle Size Analysis
■	–	"Undisturbed" Sample
☒	–	Bulk or Classification Sample

Shear Strength (psf)		Confining Pressure	
TxUU (FM) or (S)	3200	(2600)	– Unconsolidated Undrained Triaxial Shear (field moisture or saturated)
TxCU (P)	3200	(2600)	– Consolidated Undrained Triaxial Shear (with or without pore pressure measurement)
TxCD	3200	(2600)	– Consolidated Drained Triaxial Shear
SSCU (P)	3200	(2600)	– Simple Shear Consolidated Undrained (with or without pore pressure measurement)
SSCD	3200	(2600)	– Simple Shear Consolidated Drained
DSCD	2700	(2000)	– Consolidated Drained Direct Shear
UC	470		– Unconfined Compression
LVS	700		– Laboratory Vane Shear

KEY TO TEST DATA

The Geoservices Group

Soil Classification Chart and Key to Test Data
Hidden Valley Lake CSD
Lake County, California

PLATE **3**

Job Number: 108.07.01 | Drawn: PM | Approved: DWP | Date: 6/98

APPENDIX B
Hidden Valley Lake
Monitoring Well Data:
MW-5A/5B

TABLE 2

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	GR 1[7]	GR 2	GR 3	TP 1	TP 2	TP 3	MW 1A	MW 1B	MW 2A	MW 2B	MW 3A	MW 3B	MW 4	MW 5A	MW 5B	AG 1
02-Feb-90	934.42	935.44														
09-Mar-90	936.42	937.36														
12-Apr-90	933.50	935.11														
11-May-90	929.92	931.11														
11-Jun-90	932.50	934.36														
15-Jul-90		931.78														
20-Aug-90	926.25	925.28														
02-Oct-90	922.50	922.53														
07-Nov-90	923.67	925.11														
14-Dec-90	925.83	927.28														
14-Jan-91	927.08	928.53														
08-Feb-91	927.83	929.11														
08-Mar-91	931.17	932.61														
12-Apr-91	935.42	936.53														
13-May-91	935.42	936.53														
17-Jun-91	932.33	933.53														
18-Jul-91	931.00	932.19														
15-Aug-91	913.50	928.61														
13-Sep-91	925.08	926.69														
14-Oct-91	924.08	924.11														
27-Nov-91	921.17	923.11														
13-Dec-91	924.75	926.19														
10-Jan-92	927.25	928.53														
18-Feb-92	930.25	931.53														
18-Mar-92	933.75	935.19														
10-Apr-92	933.33	934.36														
13-Jun-92	925.50	927.36														
09-Jul-92	925.50	927.36														
14-Aug-92	923.92	926.03														
12-Oct-92	920.58	922.69														
11-Nov-92	922.75	924.36														
15-Dec-92	925.92	927.03														
16-Feb-93	940.83	941.19														
16-Mar-93	941.00	941.78														
10-May-93	935.80	936.66														
15-Jul-93	927.40	929.26														
19-Aug-93	927.40	927.76														
15-Oct-93	925.50	926.86														
30-Nov-93	928.30	929.66														
30-Dec-93	930.70	931.76														
20-Jan-94	930.90	931.76														
17-Feb-94	933.00	934.56														
15-Mar-94	934.50	935.16														

TABLE 2

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	GR 1[7]	GR 2	GR 3	TP 1	TP 2	TP 3	MW 1A	MW 1B	MW 2A	MW 2B	MW 3A	MW 3B	MW 4	MW 5A	MW 5B	AG 1
29-Apr-94	931.50	933.06														
31-May-94	930.00	931.26														
24-Jun-94	926.20	927.56														
22-Jul-94	921.70	923.56														
12-Oct-94	916.50	918.56														
04-Jan-95	928.50	930.06														
03-Mar-95	940.50	941.06		954.75	957.36	961.13										
17-Mar-95	932.83	934.94														
14-Apr-95	941.00	941.86		954.75	957.44	962.30										
17-May-95	938.17	939.19	937.02													
13-Aug-95	926.25	926.19														
15-Sep-95	922.50	923.36														
19-Oct-95				952.58	957.36	960.96										
20-Oct-95	920.50	922.53														
15-Nov-95	923.58	924.84														
12-Jul-96	929.58	930.19	931.02													
15-Aug-96	926.08	927.36		948.75	954.44	957.21							941.36			
15-Sep-96	923.92	925.03	925.11	949.92	955.11	958.96	963.90	963.99	935.96	936.88	969.85	969.85				
15-Oct-96	921.83	924.53		945.08	954.53	958.55	963.74	963.74	936.05	937.46	969.27	969.18	941.69			
15-Nov-96	926.00	928.03		948.00	951.28	954.63	964.32	964.65	937.71	939.55	970.02	969.77	942.11			
15-Dec-96	930.00	931.61	932.02	949.17	955.53	959.96	966.32	966.82	938.80	940.46	971.85	971.60	945.19			
15-Jan-97	940.17	941.19	938.27	951.50	955.53	960.05	961.49	961.57	941.05	941.05	975.35	975.27	946.02			
12-Feb-97	941.75	942.86	939.19	951.92	955.44	959.96	960.49	960.57	940.96	940.71	973.77	973.68	945.94			
12-Mar-97	938.92	939.69	937.19	951.08	955.11	959.13	967.24	967.32	939.88	940.05	971.60	971.52	943.11			
18-Apr-97	934.67	935.78	934.69	950.67	954.86	958.30	965.90	965.99	939.30	939.96	971.68	971.43	942.02			
14-May-97	930.75	932.19	932.44	948.83	954.69	957.38	965.40	965.32	938.80	939.80	970.85	970.77	941.69			
17,18-Jun-97	935.83	934.94	931.69	946.00	952.44	954.80	964.40	964.49	937.88	939.05	969.85	969.77	941.44			
17-Jul-97	927.75	928.61	930.02	947.08	953.86	956.30	965.65	965.99	938.88	939.96	971.52	971.77	941.11			
21-Aug-97	920.33	922.94	926.86	944.08	952.11	954.46	963.99	963.99	935.30	935.46	971.18	971.18	945.52			
18-Sep-97	920.33	921.53	911.61	942.42	946.44	948.13	963.74	963.57	933.80	935.46	968.93	969.10	940.52			
20-Oct-97	924.25	921.28	923.77	939.25	953.36	955.55	960.15	960.65	932.63	935.63	970.93	970.89	941.94			
18-Nov-97	925.50	927.44	929.19	954.50	956.11	944.88	966.24	966.82	939.71	941.21	971.35	971.35	942.86			
17-Dec-97	931.42	932.78	933.11	949.67	955.19	959.55	968.32	968.57	939.30	940.21	971.60	971.68	945.69			
14-Jan-98	935.00	935.94	935.86	952.42	955.86	960.21	971.44	971.74	940.13	940.63	974.35	974.27	946.69			
18-Feb-98	945.33	946.11	942.19	953.42	955.94	960.63	973.82	974.78	942.25	941.30	977.52	977.43	947.69			
23-Mar-98	941.17	942.28	934.36	952.33	955.78	960.30	969.82	970.07	940.21	939.63	972.52	972.35	946.02			
15-Apr-98	937.58	938.69	937.02	951.67	955.11	959.55	969.07	968.82	939.63	940.05	971.85	971.68	945.94			
18-May-98	935.58	936.86	935.94	950.83	954.86	958.80	966.99	967.15	938.71	938.80	971.35	971.10	943.44			
17-Jun-98	937.00	938.03	935.94	950.75	954.03	958.63	967.32	967.49	938.63	938.80	971.35	971.18	943.11	923.98	924.22	
14-Jul-98	933.17	934.36	933.69	946.58	954.44	956.71	965.40	965.49	937.38	938.21	970.77	970.68	941.94	921.90	922.72	
14-Aug-98	930.83	932.53	932.02	947.67	954.36	958.05	964.49	964.65	937.05	937.80	971.60	971.52	941.44	921.07	922.39	
18-Sep-98	929.17	930.86	930.11	946.92	953.11	955.63	963.82	963.99	936.71	937.63	969.60	969.52	940.86	921.82	922.64	
16-Oct-98	929.00	930.36	929.69	945.42	952.19	954.80	963.74	963.99	936.80	937.71	969.43	969.27	941.02	922.15	922.47	

TABLE 2

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	GR 1[7]	GR 2	GR 3	TP 1	TP 2	TP 3	MW 1A	MW 1B	MW 2A	MW 2B	MW 3A	MW 3B	MW 4	MW 5A	MW 5B	AG 1
09-Nov-98	930.25	931.44	931.52	947.00	953.11	955.55	963.82	964.15	936.88	937.80	969.18	969.27	940.94	922.07	922.39	
15-Dec-98	933.25	934.44	931.77	949.42	954.61	958.63	966.57	966.90	937.88	938.21	970.52	970.52	943.11	923.65	923.81	
01-Jan-99	930.50	931.44	937.11	949.92	954.86	959.05	965.15	965.32	937.80	937.55	975.93	976.10	942.36	922.73	923.06	
19-Feb-99	935.50	936.78	936.19	952.17	955.69	960.47	972.49	972.90	939.71	939.88	975.02	974.93	946.61	926.73	926.64	937.87
19-Mar-99	938.50	939.44	936.94	951.58	955.19	959.71	970.40	970.57	939.13	938.88	972.85	973.02	945.86	925.98	926.06	939.87
21-Apr-99	938.92	939.94	937.52	951.17	955.03	959.38	969.15	969.32	939.13	938.80	972.27	972.18	945.11	925.07	925.22	941.29
14-May-99	935.42	936.44	934.77	950.92	954.86	958.80	966.90	967.07	937.88	938.05	971.35	971.18	942.52	922.40	922.39	937.12
18-Jun-99	929.50	931.11	931.44	950.50	954.61	957.55	965.07	965.24	936.71	937.46	970.52	970.60	941.52	922.82	922.39	931.62
16-Jul-99	929.17	930.44	930.19	949.67	954.44	956.30	964.24	964.57	936.17	937.21	969.68	969.77	941.11	922.15	923.31	930.29
16-Aug-99	926.92	928.28	930.27	951.08	954.03	952.30	963.90	964.15	935.96	935.80	974.02	974.43	940.77	921.32	922.72	931.04
16-Sep-99	925.25	927.19	928.61	946.58	953.86	956.46	963.57	963.90	935.05	935.96	969.27	969.18	940.61	920.32	921.14	927.04
16-Oct-99	925.83	926.86	927.69	945.67	952.69	954.96	963.49	963.57	935.80	936.71	969.10	968.85	940.61	920.73	921.97	927.87
15-Nov-99	928.67	929.78	930.11	944.00	951.36	953.80	963.57	963.90	936.13	937.13	969.18	968.52	940.69	921.23	921.56	930.54
16-Dec-99	930.92	932.28	931.69	944.42	952.78	956.05	963.82	964.24	937.05	937.38	969.27	969.43	940.86	921.82	921.64	932.70
Max 1999	957.50	959.36	956.69	961.25	963.86	966.63	978.82	978.82	955.63	955.63	991.35	991.35	960.69	942.15	942.14	957.87
Min 1999	957.50	959.36	956.69	961.25	963.86	966.63	978.82	978.82	955.63	955.63	991.35	991.35	960.69	942.15	942.14	957.87
19-Jan-00	932.33	933.28	933.11	948.08	954.86	959.30	964.32	964.99	937.96	938.63	970.35	970.52	943.11	922.90	922.06	934.04
15-Feb-00	936.75	937.78	936.44	955.17	955.86	958.30	971.90	972.15	940.46	940.71	976.10	975.60	947.02	927.15	926.89	938.79
16-Mar-00	936.08	941.69	934.11	951.92	955.11	959.96	971.90	972.15	939.63	939.30	974.02	974.18	946.27	926.48	926.89	943.04
15-Apr-00	934.75	935.78	934.02	950.25	954.94	959.05	967.40	967.74	937.46	937.80	971.43	971.60	942.61	923.48	923.89	937.12
15-May-00	932.25	933.03	932.69	950.08	954.69	957.71	965.82	966.07	936.80	937.21	970.68	970.43	941.86	922.82	923.22	933.29
14-Jun-00	926.50	929.78	930.52	949.67	954.36	962.30	964.57	964.90	936.38	937.05	972.27	972.52	941.61	921.07	922.64	930.45
14-Jul-00	923.75	926.03	927.77	948.08	954.44	955.13	963.99	964.24	935.71	936.21	969.60	969.68	940.94	920.15	920.89	924.37
15-Aug-00	927.42	924.28	926.52	948.08	954.11	955.30	963.82	964.24	934.55	935.38	970.68	970.93	940.52	922.57	922.97	921.87
14-Sep-00	920.83	920.19	926.69	944.50	951.86	953.96	963.74	963.90	934.46	935.63	969.18	969.06	940.52	921.07	921.89	923.87
16-Oct-00	920.17	921.86	925.11	942.92	951.04	953.13	963.40	963.65	934.71	936.38	969.02	968.93	940.27	919.82	921.47	919.95
15-Nov-00	925.92	927.44	928.94	941.33	950.86	952.96	963.82	964.07	935.80	937.13	968.93	968.85	940.19	921.40	921.31	927.62
13-Dec-00	928.67	930.19	930.44	940.75	950.78	952.63	963.74	963.90	936.30	937.05	969.10	969.10	940.61	921.40	921.39	930.54
17-Jan-01	930.50	931.69	931.69	946.46	954.40	958.38	965.15	965.57	937.55	938.13	969.77	969.77	942.52	922.48	921.89	932.12
15-Feb-01	932.00	933.19	933.11	949.83	954.94	959.30	967.44	967.78	937.63	938.21	970.97	970.85	945.31	923.07	922.93	932.95
15-Mar-01	936.50	937.57	936.15	950.92	955.03	959.71			938.30	938.38	975.27	975.60	941.11	924.82	924.97	938.45
17-Apr-01	929.37	930.78	932.36	950.00	954.69	958.92	967.07	967.36	937.09	937.55	971.43	971.39	942.56	923.07	923.31	932.62
17-May-01	929.00	930.28	930.61	950.00	954.61	958.38	965.40	965.57	936.38	937.13	970.77	970.81	942.61	921.02	921.72	929.70
19-Jun-01	922.92	925.15	928.61	951.50	954.61	956.05	954.49	954.74	938.05	938.30	969.60	969.77	941.36	922.15	922.39	926.04
18-Jul-01	920.17	921.61	926.27	948.25	954.44	958.55	964.07	964.28	934.05	933.84	969.27	969.18	940.81	918.27	921.26	957.87
20-Aug-01	911.37	912.69	916.11	944.79	952.19	954.30	959.24	958.78	931.92	933.92	968.72	968.18	938.90	922.57	922.01	917.08
18-Sep-01	910.04	917.73	912.86	946.21	952.61	954.50	960.61	960.74	933.88	934.00	968.06	967.77	941.94	918.23	918.01	909.49
16-Oct-01	908.08	911.11	918.36	940.04	950.53	952.63	961.24	963.40	931.84	932.71	968.35	968.18	940.31	917.77	920.56	912.62
16-Nov-01	917.33	919.19	923.81	934.75	951.94	954.55	960.90	960.69	934.88	934.63	971.77	971.89	943.11	923.52	923.39	919.12
18-Dec-01	926.25	928.53	930.86	949.67	955.28	959.80	968.99	969.32	937.46	937.55	971.93	971.97	943.06	923.40	923.22	925.08
16-Jan-02	936.17	937.11	936.69	952.17	955.78	960.55	972.24	972.40	939.55	939.13	975.27	975.10	946.27	926.07	926.56	938.29
19-Feb-02	933.42	934.11	934.61	950.33	955.19	959.80	961.57	961.82	937.88	938.05	972.60	972.27	943.11	923.48	923.89	934.29
15-Mar-02	933.00	934.44	934.02	950.50	955.57	958.71	961.07	960.57	935.71	935.55	970.73	971.27	941.94	922.19	921.97	935.50

TABLE 2

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	GR 1[7]	GR 2	GR 3	TP 1	TP 2	TP 3	MW 1A	MW 1B	MW 2A	MW 2B	MW 3A	MW 3B	MW 4	MW 5A	MW 5B	AG 1
18-Apr-02	931.13	932.44	932.36	950.42	954.99	959.05	965.53	965.90	937.05	937.63	970.85	970.73	942.11	922.32	922.97	934.45
16-May-02	929.67	932.36	928.52	949.67	955.11	958.05	959.90	959.74	936.01	935.88	971.27	971.35	941.11	923.36	923.14	930.70
18-Jun-02	930.08	931.61	931.44	949.83	954.53	956.71	964.65	964.74	936.21	937.05	970.77	970.68	941.27	921.32	921.47	[6]
17-Jul-02	921.42	924.11	926.69	947.13	954.07	955.71	964.32	964.61	934.88	936.05	969.27	969.14	941.48	920.90	920.93	922.37
16-Aug-02	914.33	915.78	929.02	945.92	953.11	954.88	964.32	964.40	933.63	934.96	969.02	969.10	936.27	918.82	920.89	915.54
16-Sep-02	913.17	914.69	920.36	948.04	952.11	956.71	957.49	957.20	935.67	935.55	969.43	969.27	940.44	921.90	921.72	916.12
16-Oct-02	910.42	910.44	917.40	938.88	949.78	951.80	962.65	962.95	930.05	932.13	967.52	967.35	939.94	915.57	918.97	910.29
14-Nov-02		917.69	919.61	934.33	951.19	953.30	964.32	964.65	933.46	936.05	968.10	967.60	941.27	918.57	918.81	917.29
18-Dec-02		926.53	927.61	943.17	954.69	959.38	970.65	970.82	937.55	938.46	977.93	977.68	946.11	924.48	924.81	926.87
15-Jan-03		938.28	935.94	953.04	955.74	961.26	972.32	972.40	939.13	939.30	975.35	975.35	945.69	927.15	927.06	939.62
14-Feb-03		936.61	934.86	951.25	955.19	959.96	968.82	969.15	938.05	938.21	971.93	971.77	944.02	925.32	925.56	938.45
14-Mar-03		933.94	928.86	952.17	955.44	959.63	967.57	967.57	937.63	938.63	971.02	971.02	942.86	923.15	923.64	936.45
17-Apr-03		936.69	932.44	950.00	954.69	959.09	967.03	967.32	937.13	937.42	970.27	970.35	942.44	923.40	923.89	938.37
13-May-03		936.94	932.27	950.50	954.69	958.88	967.65	967.82	937.96	937.88	970.77	970.60	943.77	922.98	928.47	938.79
16-Jun-03		930.44	918.69	950.75	955.03	958.88	965.15	965.24	936.13	936.63	969.77	969.68	940.69	921.32	921.89	932.87
15-Jul-03	926.89	927.53	921.69	950.42	954.94	957.63	964.82	965.15	937.38	936.88	970.10	970.02	942.19	921.40	921.56	927.62
18-Aug-03	924.06	925.53	923.02	948.17	954.24	956.17	959.90	959.70	934.88	936.42	969.35	969.23	940.94	921.07	921.56	927.87
15-Sep-03	922.89	925.94	925.36	950.00	954.86	959.30	963.99	964.15	935.55	935.71	969.27	969.18	940.69	920.98	921.14	926.29
13-Oct-03	922.56	925.69	923.94	948.00	954.36	956.63	963.74	963.99	934.63	935.63	969.27	969.02	940.44	920.40	920.22	925.79
14-Nov-03	926.97		926.07	945.17	952.78	955.88	959.61	959.74	935.46	936.67	971.23	971.52	941.90	923.53	923.60	929.45
15-Dec-03	929.47		931.44	950.04	951.94	953.46	961.03	960.78	936.46	936.59	971.60	971.48	943.11	923.94	924.02	932.29
15-Jan-04	936.06	939.36	936.69	951.08	955.61	960.05	972.07	971.99	939.63	939.55	974.10	974.02	945.77	926.32	926.14	941.04
13-Feb-04	935.72	939.03	936.69	951.25	955.19	959.88	969.57	969.49	938.13	938.05	972.35	972.27	944.69	925.32	925.22	940.70
16-Mar-04		938.53	936.69	951.67	955.28	959.96	970.32	970.40	939.55	939.63	973.35	973.35	945.11	925.65	926.31	941.70
14-Apr-04	932.56	935.11	933.77	953.17	956.11	959.09	961.07	960.99	936.55	936.67	972.35	972.14	941.94	923.61	923.56	935.37
17-May-04	927.56	931.61	931.02	950.67	954.94	958.71	961.24	961.15	937.55	938.63	970.35	970.77	941.61	920.90	921.22	932.87
16-Jun-04	927.39	928.44	926.02	950.50	954.78	957.46	964.99	965.07	937.80	938.38	970.10	969.85	941.19	921.65	921.06	930.04
17-Jul-04	923.31	927.28	927.69	949.00	954.53	956.63	964.40	964.57	936.63	938.38	969.52	969.35	940.77	919.65	920.81	928.45
16-Aug-04	922.81	924.36	924.61	946.92	953.36	955.96	963.82	963.99	934.71	935.71	968.85	968.77	940.52	921.32	921.14	[6]
16-Sep-04	920.56	924.28	925.19	944.25	952.11	953.55	963.24	963.65	933.05	934.46	968.10	968.06	940.40	919.48	920.06	[6]
15-Oct-04	921.81	923.53	924.77	943.38	951.03	953.01	958.99	958.82	935.63	936.21	971.18	971.02	940.27	922.48	922.39	924.54
16-Nov-04	926.56		928.11	941.46	950.86	952.96	964.57	964.90	936.63	938.34	968.56	968.52	940.94	921.07	921.02	929.08
15-Dec-04	929.56		931.27	947.50	954.53	958.63	966.28	966.65	937.26	938.21	969.98	970.02	943.27	921.57	922.22	[6]
18-Jan-05	935.43		936.36	952.94	956.07	959.44	963.74	963.84	939.98	939.92	975.27	975.18	946.27	925.53	925.56	938.79
15-Feb-05	936.64	938.69	936.36	951.96	954.92	957.59	961.92	961.88	938.03	938.11	974.02	974.06	944.23	924.98	924.85	940.12
15-Mar-05	937.72	939.61	937.02	950.92	954.94	959.46	969.36	969.53	938.92	938.88	972.06	971.93	944.77	924.82	925.31	941.29
15-Apr-05	931.56	934.78	934.61	949.42	[8]	[8]	[8]	[8]	[8]	[8]	970.60	970.77	[8]	921.82	921.77	936.70
16-May-05	933.02	934.28	934.02	950.46	955.11	959.51	968.03	968.15	937.88	938.46	971.27	971.18	943.19	923.40	923.97	934.45
15-Jun-05	931.97	934.86	931.69	950.33	954.86	959.30	966.65	966.74	937.05	938.13	970.35	970.27	942.19	921.90	922.22	936.54
18-Jul-05	926.31	930.61	929.69	945.60	[8]	[8]	[8]	[8]	936.30	936.34	971.31	971.43	941.19	922.44	922.39	933.12
16-Aug-05	922.64	927.94	926.94	947.58	954.11	956.55	964.57	964.57	936.42	936.42	969.52	969.35	940.44	[8]	[8]	929.12
16-Sep-05		927.94	927.69	946.25	953.36	955.21	964.07	964.07	936.13	937.51	968.93	968.85	940.69	920.86	920.81	928.37
18-Oct-05	924.72	926.03	[8]	948.75	951.53	949.63	963.82	963.90	936.13	937.71	968.77	968.60	940.61	920.65	921.14	928.29
16-Nov-05	928.56	930.36	[8]	948.00	950.69	948.96	964.49	964.74	937.21	938.55	969.27	969.10	940.52	921.15	921.39	[8]

TABLE 2

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	GR 1[7]	GR 2	GR 3	TP 1	TP 2	TP 3	MW 1A	MW 1B	MW 2A	MW 2B	MW 3A	MW 3B	MW 4	MW 5A	MW 5B	AG 1
15-Dec-05	930.27	931.94	931.42	945.67	954.38	956.96	965.70	965.70	937.34	938.30	968.60	968.48	941.19	920.40	921.72	932.87
18-Jan-06	938.35	939.57	[6]	951.17	955.32	960.30	963.24	963.24	940.13	940.21	974.18	974.23	945.61	925.57	925.56	943.12
16-Feb-06	935.81	937.53	[6]	951.25	955.36	960.30	969.40	969.49	939.21	939.13	972.35	972.35	944.11	924.48	925.31	939.62
15-Mar-06	939.47	941.86	[6]	953.04	956.19	961.05	972.82	972.86	940.63	940.55	975.18	975.06	945.94	928.36	928.81	943.45
19-Apr-06	940.72	943.78	[6]	955.58	956.44	959.80	973.82	973.82	941.21	941.21	976.52	976.52	945.86	928.90	929.72	945.87
26-May-06	934.89	937.86	[6]	951.25	955.36	959.63	967.82	967.78	938.30	938.21	971.35	971.27	942.77	923.40	924.14	939.12
16-Jun-06	930.89	934.28	[6]	950.54	955.03	958.71	966.32	966.36	937.38	937.67	970.43	970.35	941.73	921.98	922.22	936.45
17-Jul-06	927.06	929.78	927.02	949.92	955.03	957.13	965.15	965.24	936.21	937.63	970.02	970.10	941.27	922.15	921.64	932.54
17-Aug-06	921.56	925.69	928.19	943.58	950.28	949.71	960.74	960.90	931.96	931.88	969.52	969.43	937.02	919.98	917.64	926.37
15-Sep-06	920.89	926.69	927.02	948.83	951.53	950.71	963.90	963.90	935.71	937.30	968.60	968.60	939.94	916.73	918.89	928.54
16-Oct-06	918.89	928.11	927.69	943.83	950.53	952.96	963.82	963.99	936.13	937.96	968.77	968.77	940.32	922.98	923.22	[6]
15-Nov-06	927.81	929.61	929.44	942.67	950.99	953.13	963.24	963.24	937.30	937.21	974.18	974.14	943.57	924.48	924.52	[6]
14-Dec-06	929.39	930.94	930.61	939.92	951.69	953.63	964.65	964.32	937.46	938.71	969.10	968.98	940.77	924.40	924.43	[6]
17-Jan-07	923.14	931.11	930.36	943.17	951.86	957.46	964.90	960.24	936.21	936.05	970.02	969.77	936.77	921.82	921.72	[6]
15-Feb-07	930.47	932.86	926.94	950.08	955.24	959.55	962.90	963.03	937.88	937.63	972.35	966.35	[6]	922.98	923.22	[6]
15-Mar-07	932.22	928.36	926.69	950.38	954.94	959.55	962.82	962.74	937.13	937.76	972.27	972.06	937.52	923.57	923.14	[6]
16-Apr-07	920.31	924.19	922.19	942.92	954.69	954.96	960.07	960.15	943.55	943.30	964.85	965.10	935.36	916.57	915.72	[6]
15-May-07	923.56	924.86	927.94	946.08	948.53	953.88	965.32	965.24	935.46	936.05	970.18	970.18	941.02	921.82	921.64	[6]
15-Jun-07	914.97	920.11	921.11	941.31	948.57	950.88	960.90	960.40	928.96	930.30	969.14	968.77	937.02	915.57	913.97	[6]
16-Jul-07	919.39	924.36	919.36	940.25	948.19	950.13	958.15	958.07	929.30	929.55	962.68	962.52	936.44	919.15	918.81	[6]
14-Aug-07	915.14	920.36	919.61	945.00	953.03	955.13	957.82	958.15	931.63	934.63	960.93	960.85	933.11	917.57	920.72	[6]
14-Sep-07	915.39	917.86	917.77	943.42	952.61	954.30	957.40	957.57	930.63	933.63	969.02	969.18	936.11	918.82	918.81	[6]
15-Oct-07	913.89	917.65	917.11	943.25	948.78	950.21	963.61	963.82	931.63	935.30	962.18	961.85	938.61	917.15	916.47	[6]
15-Nov-07	917.39	919.28	921.61	942.75	951.28	953.63	959.07	961.82	934.13	936.30	966.68	966.52	936.27	919.98	919.64	[6]
14-Dec-07	921.81	923.53	924.27	940.25	948.24	949.96	963.82	963.99	935.51	937.13	968.10	968.14	931.61	917.15	920.14	[6]
15-Jan-08	923.14	925.94	926.27	944.79	951.65	956.13	964.90	965.38	930.63	930.69	968.60	968.52	943.48	919.75	920.39	[6]
15-Feb-08	929.56	932.36	930.15	950.50	955.32	952.13	970.65	970.82	937.42	937.80	969.52	969.25	945.11	924.03	921.39	[6]
14-Mar-08	930.64	933.69	930.86	947.08	951.86	956.38	965.57	965.65	937.96	934.80	968.68	971.98	940.27	919.90	920.72	[6]
15-Apr-08	926.89	934.53	929.19	946.33	951.53	955.13	962.82	962.99	932.38	932.05	967.18	967.18	938.23	918.48	919.47	[6]
16-May-08	924.89	929.28	926.11	949.75	954.69	959.63	964.57	964.90	937.96	937.71	973.18	973.39	940.19	925.19	924.89	926.29
16-Jun-08	915.89	924.36	922.19	946.17	951.19	953.71	960.74	960.70	930.80	931.26	965.73	965.60	937.65	916.40	919.35	920.37
15-Jul-08	910.22	913.53	916.86	945.21	951.11	953.26	959.11	960.24	929.38	931.46	965.14	965.02	936.86	917.23	915.97	913.12
15-Aug-08	908.64	910.36	[6]	942.83	950.69	952.34	959.57	959.74	927.63	929.96	964.52	964.43	936.61	915.57	916.85	909.54
19-Sep-08	904.97	906.94	910.77	944.17	952.28	954.05	962.90	962.90	928.63	932.13	967.35	967.18	939.52	919.15	920.06	908.79
15-Oct-08	908.39	908.94	[6]	942.25	951.28	953.17	963.15	963.36	928.80	931.63	967.27	967.18	939.44	919.65	920.06	910.04
13-Nov-08	915.31	915.53	[6]	939.00	951.19	953.13	963.99	963.90	933.55	936.63	967.85	967.77	940.44	920.65	921.14	916.45
15-Dec-08	917.72	919.28	[6]	938.67	951.03	952.63	963.82	963.82	934.63	937.38	968.02	967.68	940.36	920.69	921.22	918.37
15-Jan-09	922.31	923.78	925.11	944.92	953.78	955.96	964.57	964.74	935.13	937.34	968.68	968.60	940.86	920.98	921.64	923.54
17-Feb-09	920.39	921.86	926.19	949.58	956.78	960.46	966.74	966.90	936.96	939.88	969.60	969.43	943.86	921.48	922.22	921.04
13-Mar-09	929.31	930.86	931.86	950.92	955.15	959.80	971.03	971.32	937.30	938.09	972.85	972.68	945.44	923.40	924.39	929.91
14-Apr-09	925.97	929.61	928.94	949.83	954.94	959.05	967.32	967.24	936.30	938.46	971.02	970.77	942.52	921.82	922.64	929.45
16-May-09	925.56	929.11	928.86	949.83	954.69	958.21	966.24	966.15	935.71	937.30	970.10	970.18	941.61	921.73	922.39	930.62
15-Jun-09	925.22	927.44	926.52	949.83	952.61	955.30	963.82	964.74	934.96	936.96	969.68	969.52	941.11	919.65	921.14	927.20

TABLE 2

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	GR 1[7]	GR 2	GR 3	TP 1	TP 2	TP 3	MW 1A	MW 1B	MW 2A	MW 2B	MW 3A	MW 3B	MW 4	MW 5A	MW 5B	AG 1
15-Jul-09	919.22		921.69	949.33	954.53	956.63	964.07	964.24	933.96	935.71	978.18	978.02	940.52	920.32	921.56	922.54
17-Aug-09	914.14		918.19	946.75	954.61	955.63	963.24	963.40	931.71	934.05	968.35	968.43	939.94	919.07	921.06	916.79
14-Sep-09	912.81		916.27	944.33	952.78	954.21	962.99	963.07	930.30	932.96	968.93	968.77	939.61	919.23	920.56	914.70
15-Oct-09	914.39		917.02	944.00	952.78	954.55	964.07	964.15	932.46	936.80	968.02	967.93	940.69	920.07	920.72	915.79
16-Nov-09	920.39		924.19	943.00	949.94	952.96	963.57	963.82	934.46	936.84	967.93	967.85	940.19	920.98	921.06	921.54
16-Dec-09	922.47		925.61	942.50	951.44	953.38	964.40	964.32	935.38	937.30	966.43	966.43	940.69	920.82	921.31	924.45
15-Jan-10	925.47	927.11	927.94	946.08	954.57	958.63	965.57	965.99	936.13	937.63	969.14	969.18	942.27	921.15	921.81	927.37
17-Feb-10	935.06	937.36	935.27	950.75	955.19	959.96	970.82	971.07	938.05	938.21	972.93	972.93	945.27	923.82	925.06	938.41
15-Mar-10	936.47	938.53	936.69	951.00	955.36	960.05	970.57	970.57	938.55	938.55	972.43	972.52	945.11	924.32	925.39	940.29
15-Apr-10	933.97	936.19	935.44	951.08	955.28	959.80	969.24	969.90	938.63	938.88	971.43	971.43	944.94	924.15	924.72	938.50
20-May-10	931.97	935.53	933.19	949.92	954.94	958.80	966.65	966.74	936.05	937.63	975.10	974.60	940.94	921.07	922.56	936.87
15-Jun-10	929.31	934.11	932.02	949.75	954.61	957.96	965.65	965.57	936.21	937.21	973.10	973.27	941.44	921.40	922.81	933.37
15-Jul-10	925.97	926.86	927.02	949.46	954.36	956.71	964.15	964.15	935.26	937.05	969.35	969.27	940.69	921.57	919.64	928.70
17-Aug-10	921.81	923.86	925.61	947.25	954.28	955.96	963.40	963.32	936.55	935.55	[8]	[8]	940.44	919.48	920.31	924.79
15-Sep-10	920.64	920.69	923.11	945.71	953.19	954.96	962.90	962.82	933.38	935.05	[8]	[8]	939.94	919.98	920.56	922.62
13-Oct-10	919.14	920.69	919.19	944.63	952.11	953.88	962.74	962.74	932.46	934.63	[9]	[9]	939.69	919.65	920.31	921.20
15-Nov-10	924.81	926.61	927.19	943.83	951.44	953.38	963.90	963.99	935.30	936.80	968.27	968.35	940.69	920.73	921.47	926.70
16-Dec-10	927.72	929.44	929.61	947.67	954.53	958.63	965.40	965.32	936.21	937.38	969.18	969.06	941.77	921.40	922.31	929.87
14-Jan-11	933.39	935.61	934.11	950.08	955.03	959.46	970.07	970.15	937.55	937.96	972.35	972.43	944.77	923.32	924.47	937.04
11-Feb-11	932.89	935.53	933.36	949.58	954.69	958.88	967.32	967.57	936.80	937.46	970.77	970.73	942.36	922.15	923.31	936.45
16-Mar-11	936.06	939.07	936.77	951.25	955.65	960.13	970.36	970.40	938.71	938.88	972.52	972.35	945.27	924.57	925.81	940.87
18-Apr-11	936.64	940.03	936.27	950.83	955.03	959.46	969.82	969.90	939.63	939.71	972.85	972.60	944.69	924.65	926.81	942.37
16-May-11	932.56	935.19	932.69	950.00	954.78	958.30	966.49	966.65	936.71	937.38	970.60	970.52	941.86	921.90	925.22	936.37
15-Jun-11	931.31	934.69	931.44	949.75	954.61	957.96	965.90	965.90	936.55	937.21	970.02	970.02	941.69	921.98	924.14	936.45
15-Jul-11	928.47	930.19	929.02	949.46	954.36	956.71	964.49	964.49	935.63	937.05	969.56	969.52	940.69	921.32	923.35	933.29
15-Aug-11	926.14	927.53	926.61	947.08	953.94	955.80	963.82	963.99	934.96	936.63	973.27	973.85	940.27	921.07	922.31	930.62
16-Sep-11	922.39	927.44	927.19	945.50	952.78	954.46	963.15	963.24	934.46	936.21	968.52	968.35	939.94	919.98	921.72	927.87
20-Oct-11	927.06	929.36	928.52	944.25	951.44	953.30	963.15	963.32	935.17	936.63	968.27	968.31	940.11	921.07	921.81	929.95
15-Nov-11	928.47	930.36	929.86	943.42	951.03	952.88	963.24	963.57	935.38	936.71	[8]	[8]	940.11	920.82	921.22	931.20
15-Dec-11	928.97	931.11	930.44	943.04	950.86	952.55	963.40	963.57	935.63	936.63	[8]	[8]	940.44	920.90	921.31	931.87
17-Jan-12	929.06	931.28	930.36	942.17	950.65	952.38	963.07	963.15	935.63	936.71	[8]	[8]	940.19	920.82	921.31	932.20
15-Feb-12	929.89		930.98	947.92	954.44	958.42	965.65	966.11	936.01	937.13	969.52	969.43	941.36	921.23	922.06	933.20
15-Mar-12	928.31	929.44	930.36	950.83	955.78	960.05	967.15	967.65	937.80	939.30	970.68	970.68	944.02	921.98	923.06	929.54
16-Apr-12	933.39	935.69	933.77	951.17	956.19	960.38	970.32	970.49	937.88	938.30	972.43	972.35	945.02	923.48	924.81	936.79
16-May-12	929.47	932.61	930.36	949.50	954.69	958.38	966.65	967.15	936.38	937.38	970.85	969.85	941.94	921.57	923.35	933.95
14-Jun-12	926.64	930.36	928.02	949.38	954.36	957.21	964.65	964.70	935.55	937.05	969.77	969.77	940.86	921.23	922.14	931.20
16-Jul-12	920.97	925.03	920.77	947.42	954.28	956.26	963.57	963.57	933.80	936.46	968.93	969.02	940.27	920.32	921.56	925.62
14-Aug-12	918.89	918.78	924.02	945.25	953.69	955.46	963.15	963.24	932.05	931.80	968.43	968.43	939.86	919.98	920.97	920.87
14-Sep-12	915.31	916.86	916.61	948.75	952.19	949.30	962.82	963.07	930.46	933.05	968.18	968.02	939.44	920.15	920.89	917.54
18-Oct-12	913.31	914.86	908.48	941.75	950.94	952.80	962.65	962.82	928.80	932.05	967.77	967.77	939.19	920.32	920.72	915.04
14-Nov-12	918.31	918.94	919.27	939.42	950.69	952.38	962.74	963.15	930.63	932.80	967.77	967.52	939.19	920.32	920.97	919.20
13-Dec-12	928.56	928.36	929.65	949.42	955.78	959.05	970.99	970.74	936.63	937.80	972.68	972.27	944.61	924.07	925.31	928.12
15-Jan-13	935.64	933.94	934.86	949.92	954.94	959.55	969.40	969.90	937.63	938.05	972.35	972.35	944.36	922.98	926.14	[6]

TABLE 2

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	**GR 1[7]**	**GR 2**	**GR 3**	**TP 1**	**TP 2**	**TP 3**	**MW 1A**	**MW 1B**	**MW 2A**	**MW 2B**	**MW 3A**	**MW 3B**	**MW 4**	**MW 5A**	**MW 5B**	**AG 1**
12-Feb-13	935.06	936.69	934.36	949.33	954.61	958.96	966.65	966.90	937.13	937.46	970.52	970.60	942.27	922.32	924.56	[6]
12-Mar-13	932.97	935.44	932.44	949.42	954.61	958.80	965.90	965.99	936.80	937.46	970.27	970.10	941.69	922.07	923.64	[6]
15-Apr-13	930.56	931.19	931.11	949.25	954.36	958.05	965.57	965.65	937.13	936.30	969.85	969.85	940.27	921.73	922.97	931.04
14-May-13	926.39	926.69	926.69	948.08	954.19	956.63	964.40	964.65	935.30	936.71	969.43	969.35	940.69	921.65	922.81	928.37
13-Jun-13	923.39	925.36	926.19	946.42	953.86	956.63	963.74	963.99	934.63	936.46	968.93	968.85	940.61	920.65	921.97	925.04
15-Jul-13	920.56	922.69	922.69	945.67	953.36	955.13	963.49	963.15	933.38	935.13	968.85	968.77	939.86	920.98	921.89	923.37
15-Aug-13	913.31	915.11	912.69	944.75	952.28	954.05	962.82	962.99	930.21	932.80	968.02	968.10	939.36	920.23	921.56	916.45
16-Sep-13	909.72	907.61	912.19	942.42	950.86	952.63	962.40	963.65	928.30	931.38	967.52	967.52	938.94	920.65	920.97	909.29
15-Oct-13	907.22	907.69	911.02	938.00	950.44	952.21	962.40	962.82	927.38	930.55	967.52	967.43	938.69	921.65	921.22	906.95
14-Nov-13	910.06	911.53	912.44	933.17	950.28	951.88	962.49	962.82	927.05	929.80	967.52	967.52	938.61	920.65	921.14	911.95
16-Dec-13	910.56	913.36	914.77	930.92	950.28	951.71	962.74	962.74	931.96	935.71	967.35	967.68	938.77	920.15	920.89	913.37
15-Jan-14	914.14	917.19	919.52	931.00	950.36	951.71	962.82	963.24	933.63	941.30	967.93	967.98	939.36	919.98	920.64	917.29
11-Feb-14	916.31	917.61	921.86	942.83	954.36	958.21	964.90	965.32	937.21	937.88	968.77	968.60	942.61	921.57	922.31	916.12
13-Mar-14	920.06	921.36	924.44	948.42	954.74	958.63	966.40	966.74	935.55	937.46	969.43	969.43	942.94	922.15	923.31	919.62
14-Apr-14	921.06	923.69	926.52	949.17	954.69	958.80	966.99	967.07	935.38	937.13	970.35	969.52	946.52	921.82	922.72	927.70
13-May-14		922.86	924.36	948.92	954.36	957.38	965.32	965.24	934.63	936.63		[8]	[8] 940.86	922.15	921.22	922.37
16-Jun-14		920.53	922.94	948.17	954.36	957.55	964.15	963.99	936.96	937.38	968.77	968.68	940.36	920.57	921.56	921.12
15-Jul-14	913.72		920.69	945.88	954.11	955.80	963.07	963.07	930.96	933.21	968.10	968.93	939.69	918.73	920.72	915.62
29-Aug-14	910.72	912.69	916.44	945.00	953.53	955.21	962.65	962.74	935.13	931.96	967.52	967.43	939.19	917.07	919.39	913.70
15-Sep-14	915.81	917.11	918.36	944.25	952.69	954.46	962.32	962.40	928.88	930.71	967.68	967.68	938.94	915.57	918.14	916.95
15-Oct-14	915.97	916.53	917.52	943.67	951.86	953.63	962.32	962.40	928.13	929.96	966.85	966.85	938.69	917.07	916.31	917.70
5-Nov-14	917.22	918.28	919.11	943.00	951.40	953.05	962.49	962.49	928.13	929.80	966.93	966.85	938.61	916.23	916.64	918.95
9-Dec-14	919.81	921.69	920.86	945.75	954.86	958.63	964.40	964.82	934.63	938.80	967.68	967.77	942.11	919.07	919.06	919.79
13-Jan-15	930.64	932.44	931.86	949.42	954.78	958.96	968.07	968.07	936.30	937.21	971.60	971.27	943.27	922.07	924.89	932.95
11-Feb-15	930.97	933.36	932.02	949.33	954.69	958.88	966.32	966.49	936.21	936.96	970.27	970.35	941.77	921.57	923.97	934.29
9-Mar-15	932.72	935.03	934.27	949.92	954.86	959.13	968.40	968.57	937.38	937.63	971.77	971.77	943.61	922.57	924.89	937.54
7-Apr-15	930.31	932.36	931.77	949.50	954.53	958.05	965.49	965.57	936.21	936.80	970.10	970.02	941.44	921.23	923.14	934.54
4-May-15	928.97	930.69	930.19	949.42	954.36	957.21	964.15	964.65	935.55	936.63	970.35	970.35	941.69	920.15	921.81	930.54
5-Jun-15	927.81	929.53	929.27	948.00	954.36	956.46	963.99	964.15	935.30	936.21	969.02	968.85	940.52	920.90	921.64	929.95
7-Jul-15	926.64	927.61	927.02	946.58	953.69	955.55	963.15	963.40	933.80	933.71	968.35	968.18	939.86	919.82	919.31	930.12
11-Aug-15	923.22	926.28	925.36	945.17	952.44	954.21	962.90	962.99	931.88	932.88	967.93	967.68	939.44	918.32	918.89	927.20
9-Sep-15		925.61	924.27	949.08	951.11	953.88	962.65	962.74	930.88	931.80	967.52	967.35	940.02	917.07	918.81	925.95
20-Oct-15	923.47		[10]	942.25	950.44	952.21	963.24	963.15	930.38	931.30		[10]	[10] 939.19	917.40	913.89	[10]
5-Nov-15	923.14	924.94	[10]	940.75	950.28	951.80	962.99	962.99	930.13	931.05		[10]	[10] 939.11	917.57	918.31	[10]
7-Dec-15	923.97	925.53	925.69	938.33	950.44	951.88	962.90	963.07	934.46	936.46	967.35	967.52	939.52	918.89	918.89	[10]
7-Jan-16	927.06	928.53	928.94	942.42	954.78	957.63	964.32	964.32	936.38	937.71	968.35	968.52	941.36	922.15	921.22	[10]
18-Feb-16	932.22	933.94	933.11	949.33	954.78	958.88	968.15	968.32	937.05	937.55	971.27	971.35	943.44	922.48	924.47	934.87
3-Mar-16	929.56	931.78	932.19	949.25	954.78	958.88	966.65	966.90	936.55	937.38	970.43	970.52	942.27	922.15	923.64	932.87
5-Apr-16	934.64	935.86	935.02	950.33	955.19	959.80	970.07	970.07	937.80	937.88	973.60	973.68	944.36	923.65	923.47	936.70
18-May-16	933.31	935.03	932.27	949.92	954.89	958.71	965.99	966.15	936.80	937.55	970.43	970.52	942.02	922.15	925.14	936.20
14-Jun-16	930.22	931.11	930.86	949.75	954.69	957.88	964.32	964.40	937.30	937.21	971.02	971.10	941.19	920.73	923.47	931.20
14-Jul-16	917.14	928.19	927.69	948.83	954.61	957.13	963.57	963.82	936.88	935.30	969.18	969.27	940.69	920.57	922.47	926.79
9-Aug-16	923.39	928.44	927.19	947.00	954.44	956.38	963.24	963.07	935.05	936.71	969.02	968.93	940.44	920.23	922.14	929.29
22-Sep-16	927.36	928.86	927.36	945.75	953.44	955.21	962.65	962.99	936.63	935.05	968.43	968.60	940.11	921.23	920.06	929.12

TABLE 2

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	**GR 1[7]**	**GR 2**	**GR 3**	**TP 1**	**TP 2**	**TP 3**	**MW 1A**	**MW 1B**	**MW 2A**	**MW 2B**	**MW 3A**	**MW 3B**	**MW 4**	**MW 5A**	**MW 5B**	**AG 1**
18-Oct-16	927.64	929.28	929.44	944.67	952.24	954.42	962.99	963.24	935.55	936.88	968.43	968.35	940.02	920.73	920.97	930.12
15-Nov-16	929.39	930.94	930.36	948.75	954.53	957.88	964.74	965.15	937.21	936.13	969.27	969.35	941.44	921.40	922.72	931.54
21-Dec-16	931.22	934.03	933.19	950.58	955.61	958.88	969.82	970.24	936.30	937.13	973.35	973.43	945.44	924.98	925.64	932.62
31-Jan-17	935.99	927.28	930.60 [11]	953.33	956.78	960.96	974.57	974.82	942.63	942.55	980.27	980.43	948.52	930.90	930.39	945.46 [11]
14-Feb-17	931.58	946.53	933.39	952.75	956.19	960.80	973.82	973.90	942.80	941.88	978.10	978.10	947.61	928.90	930.47	948.29
14-Mar-17	929.20	925.43	934.52	951.42	954.44	959.96	971.07	971.07	940.13	939.55	973.35	973.43	945.61	925.65	927.14	944.37
21-Apr-17	931.04	941.03	935.44	951.00	955.61	959.63	970.40	970.15	935.88	935.80	972.10	972.02	945.44	925.23	926.22	941.45
16-May-17	933.10	939.11	935.44	950.25	955.11	958.88	967.40	967.65	936.88	937.05	970.85	970.77	942.61	923.15	924.39	939.70
20-Jun-17	932.05	936.11	932.19	949.92	954.94	957.88	965.57	965.65	936.55	937.13	973.10	973.02	941.52	922.15	923.14	936.62
31-Jul-17	929.75	931.86	935.62	946.17	952.94	954.88	963.49	963.74	936.63	935.63	969.10	969.10	940.69	921.15	922.14	933.29
16-Aug-17	925.60	931.11	934.53	945.25	952.19	954.13	963.15	963.40	935.21	935.13	968.85	968.93	940.69	921.32	922.14	932.62
8-Sep-17	921.88	930.11	934.13	944.25	951.36	953.30	962.99	963.24	935.21	936.45	968.60	968.77	940.69	921.40	922.39	928.54
25-Oct-17	926.97	929.86	925.72	942.25	950.69	952.55	962.65	962.99	935.30	935.71	968.18	968.35	940.27	921.90	920.81	929.04
20-Nov-17	929.39	931.94	931.69	940.92	950.94	952.63	964.07	963.82	936.13	937.96	968.68	968.60	937.44	921.48	922.14	931.62
21-Dec-17	930.14	931.36	931.30	947.00	950.53	945.71	963.65	964.07	936.55	935.80	968.35	968.60	940.61	922.15	921.47	932.62
1-Jan-18		[12]	[12] [12]		[12]	[12] [12]	[12]	[12]	[12]	[12]	[12]	[12]	[12]	[12]	[12]	[12]
19-Feb-18	930.89	932.78	929.52	951.75	954.86	958.96	965.07	965.07	939.13	937.38	970.35	970.02	941.52	921.73	922.64	934.29
16-Mar-18	932.31	933.78	932.44	951.67	954.11	955.63	966.82	966.82	940.63	939.30	973.35	972.85	942.02	923.15	922.64	934.79
16-Apr-28	922.63	935.36	933.35	950.08	955.28	959.38	968.82	968.82	937.63	937.96	971.35	971.35	943.69	922.82	923.72	935.87
14-May-18	928.41	931.46	934.40	949.75	954.36	958.13	966.65	966.15	937.46	937.30	970.27	970.35	941.94	922.48	921.47	932.87
14-Jun-18	926.08	937.88	928.04	948.08	954.69	957.13	964.74	964.74	935.71	936.71	969.43	969.68	941.27	921.73	922.06	929.45
17-Jul-18	925.25	930.19	924.98	946.33	954.03	956.55	963.40	963.40	945.55	934.80	968.52	968.93	940.61	921.07	921.72	926.45
15-Aug-18	921.58	930.43	935.62	946.42	953.69	956.21	962.82	963.32	936.38	934.63	968.35	968.60	940.44	920.15	921.64	925.04
19-Sep-18	925.14	926.36	925.77	945.00	953.44	955.13	962.74	962.82	934.63	936.30	968.27	968.35	939.86	921.15	920.81	927.37
16-Oct-18	926.97	928.44	928.02	945.25	951.94	953.71	962.40	962.90	935.21	936.71	968.02	968.18	939.77	920.98	921.14	929.79
20-Nov-18	927.14	930.86	928.61	943.25	951.19	953.13	962.49	962.82	935.63	936.96	967.85	968.35	940.19	921.07	921.31	930.62
21-Dec-18	929.64	933.36	930.19	943.17	952.36	954.88	963.82	964.32	937.30	936.63	968.85	968.68	940.86	922.15	922.64	932.29
19-Jan-19	931.14	932.44	931.11	948.33	955.03	956.38	966.65	965.99	937.63	938.30	970.27	970.35	943.94	923.23	923.97	933.79
26-Feb-19	940.06	942.44	939.19	952.08	956.03	960.55	973.32	973.82	940.96	940.55	977.02	977.27	947.19	928.40	928.56	944.12
21-Mar-19	940.39	944.36	937.19	951.67	955.86	960.63	972.32	971.82	940.21	940.13	973.85	973.85	943.27	926.15	927.14	944.87
17-Apr-19	938.56	940.36	937.61	950.67	955.11	959.55	969.82	969.90	939.13	938.80	971.60	971.93	944.69	925.23	926.72	942.62
30-May-19	934.89	936.53	934.52	953.83	955.11	955.55	967.40	967.82	938.55	938.21	970.43	970.60	943.77	924.32	924.64	937.04
26-Jun-19	929.89	931.86	931.36	949.42	954.78	957.30	965.40	965.49	936.21	936.80	969.85	969.85	941.86	923.23	922.14	932.62
11-Jul-19	928.64	933.36	926.77	948.42	954.69	956.71	964.15	964.65	935.80	936.71	969.93	970.10	941.69	921.98	922.72	930.20
13-Aug-19	927.06	930.19	928.02	947.17	953.78	955.63	963.49	963.65	935.46	935.30	968.93	968.93	941.02	922.32	921.31	929.87
19-Sep-19	926.89	929.94	927.77	945.08	952.19	953.80	962.82	962.90	936.71	935.55	968.18	968.43	940.69	921.23	920.72	930.45
22-Oct-19	927.14	930.61	928.52	943.33	950.86	OOS	962.82	962.99	936.71	935.96	967.93	968.35	940.69	920.90	921.22	931.95
18-Nov-19	926.47	929.53	928.94	943.17	950.61	OOS	962.90	963.15	936.38	937.88	968.77	968.93	940.69	921.90	921.31	930.20
17-Dec-19	932.06	933.78	932.36	949.17	955.03	959.13	966.32	966.49	937.96	937.88	OOS	OOS	944.44	923.07	924.06	934.79
29-Jan-20	933.72	936.78	933.19	949.75	955.36	959.13	967.82	967.90	937.63	937.80	OOS	OOS	942.77	923.65	923.06	937.20
20-Feb-20	932.81	935.03	933.02	949.33	954.94	958.96	966.82	966.82	937.46	937.13	970.10	970.27	942.19	923.23	922.22	937.45
18-Mar-20		933.61	932.69	941.17	955.11	958.80	965.99	966.15	936.46	937.80	OOS	OOS	941.44	OOS	OOS	935.95
24-Apr-20	929.72	933.94	930.44	949.17	954.53	957.55	965.32	965.49	936.13	936.80	OOS	OOS	940.77	OOS	OOS	934.87
20-May-20		933.86	930.11	951.08	954.19	951.71	964.99	965.15	936.71	937.63	OOS	OOS	940.69	922.65	922.31	933.87
16-Jun-20	926.81	929.53	927.44	949.42	952.61	950.38	963.99	964.40	935.30	936.30	OOS	OOS	940.61	922.73	921.72	929.70
16-Jul-20	922.47	924.36	925.44	948.25	951.53	949.21	962.90	962.90	935.30	936.96	OOS	OOS	940.27	922.57	921.47	926.79
13-Aug-20	921.81	922.03	923.61	943.33	951.36	953.46	962.82	963.15	933.88	935.46	OOS	OOS	940.11	921.73	919.31	924.12
16-Sep-20	919.47	921.53	922.19	940.33	951.03	952.80	962.57	962.90	932.46	934.21	OOS	OOS	939.94	920.82	919.14	922.04
15-Oct-20	918.81	920.36	921.52	938.33	950.69	952.21	962.49	962.07	933.55	931.80	OOS	OOS	939.61	919.73	916.81	920.62
17-Nov-20	919.22	921.03	922.27	938.50	950.78	952.21	962.07	962.49	933.80	936.05	OOS	OOS	939.69	919.40	919.39	920.87

TABLE 2

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	GR 1[7]	GR 2	GR 3	TP 1	TP 2	TP 3	MW 1A	MW 1B	MW 2A	MW 2B	MW 3A	MW 3B	MW 4	MW 5A	MW 5B	AG 1
15-Dec-20	924.06	925.53	926.86	947.50	951.28	946.13	962.74	963.07	935.71	937.63	OOS	OOS	939.69	921.48	921.06	926.12
15-Jan-21	926.64	929.44	927.86	941.33	950.69	952.46	962.74	963.32	935.55	936.80	OOS	OOS	940.19	920.32	920.72	929.12
17-Feb-21	927.47	931.28	929.77	944.08	952.44	954.38	963.90	964.32	936.55	937.21	OOS	OOS	940.86	922.48	921.72	931.20
15-Mar-21	927.39	931.28	930.69	944.17	952.44	953.96	963.82	962.90	937.38	936.05	OOS	OOS	940.77	921.15	922.06	931.54
22-Apr-21	924.06	924.11	926.02	950.25	953.78	950.88	963.82	963.99	935.71	937.46	OOS	OOS	940.86	921.15	921.39	925.37
14-May-21	923.89	926.36	926.36	946.17	954.28	956.30	962.74	963.74	934.55	937.21	OOS	OOS	940.52	922.90	921.89	924.45
17-Jun-21	922.72	924.69	923.77	945.42	953.78	955.30	961.99	962.15	933.71	935.46	OOS	OOS	939.27	920.90	919.31	925.04
16-Jul-21	919.89	922.86	911.77	945.42	952.03	953.63	962.07	961.82	933.63	932.13	OOS	OOS	939.69	917.23	920.31	922.12
17-Aug-21	901.72	915.36	916.94	944.25	950.69	947.63	960.32	961.32	929.96	931.96	OOS	OOS	939.36	919.32	915.31	915.70
15-Sep-21	915.89	916.03	918.52	938.25	949.78	951.96	961.65	961.82	926.55	931.63	OOS	OOS	939.19	919.07	913.56	916.87
14-Oct-21	914.56	914.11	916.36	946.33	950.53	940.46	961.24	961.49	928.38	930.21	OOS	OOS	939.02	914.82	918.06	916.29
12-Nov-21	921.64	922.78	925.44	954.00	955.44	954.30	965.57	966.24	936.30	938.05	OOS	OOS	942.94	922.15	921.64	922.70
15-Dec-21	926.14	929.03	936.61	950.00	956.11	960.05	966.40	966.99	938.96	937.38	OOS	OOS	943.52	921.73	922.56	927.62
13-Jan-22	931.81	934.36	933.11	950.92	955.69	960.21	970.07	970.32	938.38	938.13	OOS	OOS	950.44	924.73	923.64	934.29
15-Feb-22	931.89	934.86	932.44	950.25	955.44	959.46	967.15	967.49	936.96	937.55	OOS	OOS	941.19	923.15	922.39	934.79
15-Mar-22	931.31	934.19	932.02	950.17	955.19	958.63	965.57	966.15	936.63	937.46	OOS	OOS	941.69	921.82	922.64	934.37
11-Apr-22	926.72	929.36	929.19	949.50	955.11	957.96	965.49	965.74	936.13	942.21	969.77	970.10	941.36	922.48	921.14	929.29
11-May-22	925.56	928.11	928.11	947.92	955.11	957.88	965.15	965.40	936.13	937.30	OOS	OOS	941.44	922.65	921.72	928.62
8-Jun-22	922.64	926.36	925.94	951.75	954.61	957.13	964.57	964.65	935.63	937.13	OOS	OOS	941.19	921.48	920.97	925.37
5-Jul-22	921.47	922.36	924.52	950.08	953.61	960.55	936.07	962.74	934.38	935.96	OOS	OOS	940.44	920.65	919.72	923.54
8-Aug-22	918.89	919.94	921.94	945.00	952.44	954.55	962.74	963.07	933.05	934.88	OOS	OOS	940.02	918.90	919.81	920.20
13-Sep-22	917.56	918.78	920.69	945.42	950.78	952.46	962.15	962.49	932.38	930.55	OOS	OOS	939.27	918.73	918.47	918.29
11-Oct-22	916.89	919.19	920.11	945.58	951.11	952.55	962.32	962.32	932.63	930.63	OOS	OOS	939.44	918.65	918.72	917.45
7-Nov-22	916.31	918.11	919.27	939.25	951.19	952.96	962.65	963.07	931.55	933.63	OOS	OOS	939.61	919.98	919.72	916.54
7-Dec-22	918.31	920.19	922.44	937.83	951.28	952.96	963.24	963.40	934.05	934.46	OOS	OOS	940.94	919.98	919.72	918.87
9-Jan-23	927.47	929.11	931.19	957.17	959.61	962.21	971.32	972.32	942.05	945.46	OOS	OOS	947.44	OOS	OOS	927.37
7-Feb-23	937.31	940.03	936.61	950.25	954.69	961.38	969.49	970.15	938.55	938.30	OOS	OOS	945.44	925.90	925.14	940.29
10-Mar-23	937.72	940.86	938.02	952.92	957.15	961.38	971.49	972.07	940.30	941.05	OOS	OOS	946.02	927.90	927.39	940.70
17-Apr-23	939.39	943.03	938.61	951.00	956.11	960.63	970.32	940.74	939.21	938.55	OOS	OOS	945.11	928.90	925.72	943.29
10-May-23	935.81	938.94	936.94	950.92	955.69	956.96	968.24	968.32	938.46	938.21	OOS	OOS	943.52	927.48	925.72	940.70
8-Jun-23	932.97	935.44	931.86	940.67	948.11	952.13	965.65	966.07	936.38	936.63	OOS	OOS	942.02	925.90	922.64	935.37
12-Jul-23	930.89	931.36	929.69	948.83	954.69	956.88	964.32	964.15	935.05	936.13	OOS	OOS	941.19	924.98	922.97	930.37
9-Aug-23	925.56	928.19	927.27	950.58	953.94	956.21	963.15	963.49	934.46	935.63	OOS	OOS	949.86	924.23	917.97	927.20
6-Sep-23	924.22	926.19	926.69	945.25	952.44	954.30	963.32	962.65	934.80	936.05	OOS	OOS	940.61	931.48	920.64	924.79
17-Oct-23	925.89	927.61	927.44	943.83	951.53	953.46	962.65	962.40	934.05	935.30	OOS	OOS	940.11	922.48	919.47	OOS
16-Nov-23	926.47	929.94	929.27	943.58	951.19	953.13	963.24	961.82	935.13	936.05	OOS	OOS	940.27	922.32	922.14	OOS
8-Dec-23	928.56	930.69	930.11	942.92	950.78	951.30	963.82	963.40	936.05	936.80	OOS	OOS	940.36	922.32	921.31	937.37
8-Jan-24	931.06	932.86	932.02	948.67	955.03	959.05	967.15	966.65	936.80	937.30	OOS	OOS	943.61	923.65	922.47	933.70
8-Feb-24	936.31	939.69	937.37	951.92	955.94	960.30	973.57	972.99	940.05	939.71	OOS	OOS	947.19	928.65	927.22	940.95
4-Mar-24	939.72	942.28	939.19	952.08	955.94	960.55	973.82	973.40	941.21	940.80	OOS	OOS	946.61	928.48	928.06	944.20
8-Apr-24	937.22	939.78	936.86	950.25	955.28	959.55	969.99	969.65	938.55	938.21	OOS	OOS	944.52	926.57	925.64	941.29
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10-Jun-24	929.97	932.36	930.61	947.58	954.53	957.05	965.74	965.65	935.71	OOS	OOS	OOS	941.27	924.98	922.14	933.37
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11-Sep-24	921.64	923.61	923.94	944.83	952.03	954.13	962.74	962.99	934.13	935.71	OOS	OOS	940.19	923.48	920.72	923.87
9-Oct-24	924.22	925.36	925.69	943.08	951.11	952.88	962.57	962.40	933.55	934.96	OOS	OOS	940.36	922.40	919.72	925.70
6-Nov-24	925.64	927.11	927.52	943.25	951.36	953.30	962.49	962.82	935.30	936.46	OOS	OOS	940.69	922.40	920.56	927.54
11-Dec-24	932.31	933.78	932.69	949.33	955.19	959.30	967.49	967.82	937.38	937.63	OOS	OOS	943.52	924.07	923.39	934.79

Notes:

TABLE 2

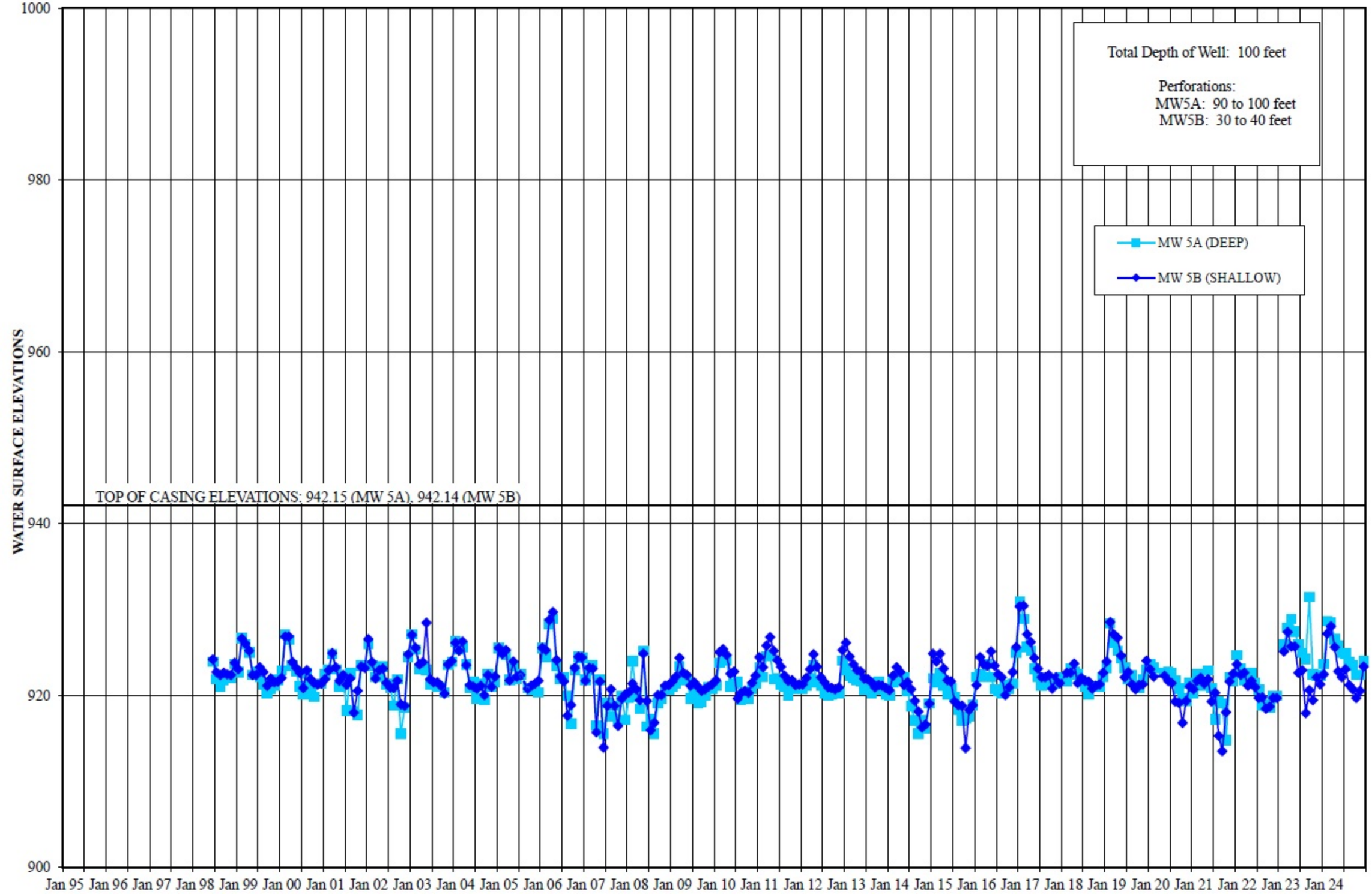
HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
COYOTE VALLEY GROUNDWATER BASIN MONITORING PLAN

WATER SURFACE EVELVATIONS
(all amounts in feet above mean sea level)

	Grange Road Wells [1]			Treatment Plant Wells [2]			Spyglass #7 [3]		Grange Road [3]		American Rock [3]		Golf Course	Luchetti [3, 4]		Ag Well [5]
Date	GR 1[7]	GR 2	GR 3	TP 1	TP 2	TP 3	MW 1A	MW 1B	MW 2A	MW 2B	MW 3A	MW 3B	MW 4	MW 5A	MW 5B	AG 1

1. Grange Road Well #3 (GR 3) well casing shifted after installation resulting in the inability to make measurement in some months.
2. Treatment Plant wells were installed in October 1994.
3. A = Deeper Completion, B = Shallow Completion
4. Luchetti Monitoring Well was installed in May 1998.
5. Agricultural Well rehabilitated in 1997.
6. Pump out of service.
7. Grange Road Well #1 failed in 2002. Grange Road Well #4 was installed in 2003 at the same location to replace it.
8. Data is not available.
9. Measurement made incorrectly and excluded from the record.
10. Valley Fire damaged pumps
11. SWRCB new measurement requirement - hourly data logging
12. Static measuring tool (solenus) failure

HIDDEN VALLEY LAKE COMMUNITY SERVICES DISTRICT
WATER SURFACE ELEVATIONS - LUCHETTI WELLS (MW 5A, MW 5B)



APPENDIX C
Revised 2023
Hydrogeologic Assessment Report
(Edited Oct. 2025)

HYDROGEOLOGIC ASSESSMENT REPORT

19955 Grange Road
Middletown, CA, 95461
APN 014-290-08

PREPARED FOR:

Rancho Lake, LLC
19955 Grange Road
Middletown, CA 95461

July 1, 2021
Revised August 31, 2023
Edited October 25, 2025

PREPARED BY:

HURVITZ ENVIRONMENTAL SERVICES INC.
105 Morris Street, Suite 188
Sebastopol, California 95472

Lee S. Hurvitz, PG #7573 CHG #1015
Certified Hydrogeologist

PROJECT NO. 5148.01

HURVITZ ENVIRONMENTAL
GEOLOGIC & ENVIRONMENTAL CONSULTING

August 31, 2023

Rancho Lake, LLC
19955 Grange Road
Middletown, CA 95461

RE: Hydrogeologic Assessment Report (edited Oct. 25, 2025)
19955 Grange Road
Middletown, CA
APN 014-290-08, 014-300-02, 014-300-03, 014-300-04
Hurvitz Environmental Project No. 5148.01

Rancho Lake, LLC:

Hurvitz Environmental Services, Inc. (HES) is pleased to submit this Hydrogeologic Assessment Report for the above referenced property. HES prepared this Report in accordance with the Lake County Cannabis Ordinance. The purpose of this Report was to outline the sites proposed water usage rates as well as to evaluate the aquifer beneath the site to determine if it can adequately meet the sites water demands without creating overdraft conditions, significantly affecting neighboring wells or cause a critical reduction in nearby streamflow.

Based on the information and assessments contained herein, we conclude that the proposed well discharge capacity and rate of recharge are sufficient to sustainably provide for the projected annual water use at the site. The quantity of groundwater to be used for the project is unlikely to result in significant decline in regional groundwater availability, or depletion of groundwater resources over time. The potential for the project water-use to cause well interference is also considered minimal.

We appreciate the opportunity to provide you with these services. Please do not hesitate to contact us at your convenience, should you have any questions or comments regarding this report or our recommendations.

Sincerely,
HURVITZ ENVIRONMENTAL SERVICES, INC.

Lee S. Hurvitz, PG# 7573 CHG #1015
Certified Hydrogeologist

CERTIFIED HYDROGEOLOGIST
LEE S. HURVITZ
No. 1015
STATE OF CALIFORNIA

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1.0 INTRODUCTION AND SCOPE OF SERVICES

We understand that Rancho Lake LLC (the applicant) is applying to Lake County for approval to develop a commercial cannabis cultivation operation that will ultimately be composed of twenty (20) A-Type, 3 "Medium Outdoor" license types, with up to 854,940ft² (19.63 acres) of outdoor canopy area. Proposed ancillary facilities include five (5) 6,000ft² Harvest Storage & Staging Areas, two (2) 120ft² Pesticides & Agricultural Chemicals Storage Areas, and a 120ft² Security Center/Shed.

The project property is composed of four (4) parcels totaling approximately 1,627 acres (Lake County APN's 014-290-08 and 014-300-02, 03, & 04), all of which are owned by Comstock Ranch, LLC. James Comstock (Managing Member of Comstock Ranch, LLC) has given Rancho Lake permission to establish the proposed cultivation operation on one parcel (014-290-08), and conduct the proposed cannabis cultivation activities, once the appropriate permits and licenses have been obtained.

According to the Lake County Cannabis Ordinance, development of property with the intent to cultivate cannabis requires a Water Use / Water Availability Study. Therefore, on behalf of the applicant Hurvitz Environmental Services (HES) conducted a Hydrogeologic Assessment of the site and prepared this Report in accordance with the Lake County requirements.

This Hydrogeologic Assessment Report includes the following elements:

- Estimates of existing and proposed water uses for the property.
- Characterization of local geologic and hydrogeologic conditions including defining water sheds and sub-basins.
- Review of a well yield test and recharge evaluation.
- Well Completion Report Assessment.
- Discussion on proposed methods for water level and water usage monitoring.
- Calculations on water availability and aquifer recharge.
- Evaluations of existing groundwater monitoring data.
- Assess potential for well interference between the project well and neighboring wells.

2.0 SITE DESCRIPTION

The site lies in the eastern half of Coyote Valley in unincorporated Lake County, California, approximately 4.5 miles northeast of downtown Middletown CA. (**PLATE 1 – SITE LOCATION MAP**). Access to 19955 Grange Road, Middletown is from Comstock Ranch Road, a gravel road which runs north off of the paved Grange Road. Locking metal gates across Grange and Comstock Ranch Roads will control access to the project property and the area of the proposed cultivation operations.

The site consists of four separate parcels identified by Lake County Assessor's Office as Assessor's Parcel Nos. (APN) 014-290-08, 014-300-02, 014-300-03, and 014-300-04. The total assessed acres for the project are 1,626.97. All cultivation will occur on parcel 014-290-08

Current and past land uses of the project property are/were rural residential with intensive and extensive agriculture. The cultivation parcel (APN 014-290-08) has been improved with two groundwater wells (a domestic well and irrigation well), a residence/house, and five accessory structures/buildings (used to store hay, tools, and equipment, and to house livestock). The proposed cultivation operation will be established in portions of the site that have been used to farm oats and hay, as well as for cattle grazing, since at least the early 1900's. Site Photographs are presented in **APPENDIX A**.

2.1 USGS 7.5 - MINUTE QUARDGRANLE MAP

HES reviewed the United States Geological Survey (USGS) Middletown 7.5-minute Quadrangle Map, 2018, (**PLATE 2 – USGS TOPOGRAPHIC MAP**). The approximately 1,627-acre site encompasses a variety of topographic terrains from flat grasslands to rolling hills to a mountain peak at 1,710 feet (ft) above mean sea level (MSL) on parcel APN 014-300-03. The lowest elevation in the project area is 940 feet MSL on the south side of APN 014-290-08.

The proposed cultivation parcel (014-290-08) is bordered to the north by a Class I watercourse identified as Putah Creek. Putah Creek flows from east to west along the northern border of the site before turning northerly just beyond the site's western boundary. Crazy Creek (a Class II stream) flows southerly across the eastern border of the site before turning westerly and flowing westerly across the southern border of the cultivation site. Crazy Creek flows into Putah Creek just west of the cultivation site. Multiple unnamed ephemeral Class III watercourses flow from the southern portions of the site into Crazy Creek and a large complex wetland occupies the floor of a small valley in the southern portion of the cultivation parcel.

The area of the proposed cultivation operation is accessed via a road crossing above Crazy Creek that is composed of a 5-foot diameter CMP culvert with native fill and an 8' wide cattle guard on concrete abutments, **APPENDIX B – ENGINEERED SITE PLANS**.

2.2 GEOLOGICAL CONDITIONS

HES reviewed the Geologic Map of the Santa Rosa Quadrangle, 1982, prepared by the California Division of Mines and Geology. According to the Map reviewed, the site lies within a geologic region characterized by three separate geologic formations. The southeastern portion of the site is underlain by Jurassic aged Serpentinized Ultramafic Rocks (um), the northeastern portion of the site is underlain by the Plio-Pleistocene aged Clear Lake Volcanics, and the northwestern portions of the site is underlain by Quaternary aged Alluvial Deposits. The proposed cannabis operations and the proposed project irrigation well are located in the area delineated as Quaternary aged Alluvial Deposits **PLATE 3 – GEOLOGIC MAP.**

2.3 REGIONAL GROUNDWATER

The project site is located within the Upper Putah Hydrologic Region (sub-basin - HUC-8), the Upper Putah Creek Watershed Region (watershed -HUC-10), and the sub-watershed-HUC-12 Crazy Creek – Putah Creek, (sub-watershed-HUC-12 180201620307) all within the jurisdiction of the Central Valley Regional Water Quality Control Board. The Upper Putah Creek Watershed encompasses 178,477 acres in southeast Lake County and some of Napa and Solano Counties. It is approximately 35 miles in length and 20 miles at its widest point. Elevations range from 440 feet at Lake Berryessa to 4,722 feet at Cobb Mountain.

The project site is also within the Coyote Valley Basin located in the southeastern portion of Lake County along Putah Creek and is part of the Upper Putah Inventory Unit. Coyote Valley Basin is a designated as A very Low Priority Groundwater Basin by the California Department of Water Resources. The basin is 5 miles long and 2.5 miles wide. Clear Lake Volcanics border Coyote Valley Basin to the east, serpentinized ultramafic rocks border the basin to the south and west, and the Franciscan Formation borders the basin to the north. Low hills of basalt are found in the south and southeastern part of the valley. Holocene alluvium is the primary water-bearing unit in the basin and overlies the Cache Formation. The alluvium consists of floodplain and channel deposits of Putah Creek and alluvial fan deposits in the southwestern portion of the valley and at the valley boundaries. The deposits are primarily composed of poorly stratified sand and gravel, with limited fine-grained material. The formation is predominantly interbedded coarse sand and gravel, and ranges from about 100 to 300 feet thick (DWR 1976[1]). Groundwater within the upper 100 feet of the formation is largely unconfined (Peterson 1996[2]). Wells drilled in the alluvium produce on average 1,000 gallons per minute (Aust 2006[3]).

[1] California Department of Water Resources (DWR). September 1976. Southwestern Sacramento Valley Ground Water Investigation. California Department of Water Resources, Northern District. Draft Memorandum Report.
[2] Peterson, David H. 15 October 1996. (Trans Tech Consultants). Memorandum to Robert Wagner of Wagner and Bonsignore Consulting Civil Engineers, Sacramento, California.
[3] Aust Mel. 04 January 2006. (Hidden Valley Lake Community Services District). Telephone conversation with John Ayres of Camp Dresser and McKee Inc., Sacramento, California.

Putah Creek is the main groundwater recharge source for Coyote Valley Basin however some recharge occurs from precipitation on the alluvial plain and from side-stream runoff. Water levels in the basin are typically between 10 to 15 feet below ground surface (bgs) on average in the spring. Spring groundwater levels have been generally stable throughout the valley. Spring to summer drawdown of the water table varies by position in the Coyote Valley Basin, with areas in the west experiencing larger drawdown than the rest of the basin. Spring to summer drawdown in the western areas ranges from 20 to 25 feet, and drawdown on the eastern side of the valley ranges from 5 to 10 feet. The general direction of groundwater flow in the Coyote Valley is to the southeast, in the direction of Putah Creek flow. In 1960 the DWR estimated that there is 29,000-acre-ft of storage capacity in the aquifer and 7,000-acre-ft of useable storage capacity. Historically, the average-year agricultural groundwater demand in the Coyote Valley basin is approximately 671 acre-ft/year and according to the Sustainable Management Act Dashboard Prioritization Site[4] the Coyote Valley Basin has a current groundwater usage rate of 0.49 acre-feet/acre.

2.4 WATER LEVEL ELEVATION DATA

HES Reviewed historical water level data from two (2) nearby observation wells on the State's Water Data Library[5]. The observation well identified as 11N-06W-27M1 is located approximately 900 feet southeast of the proposed project well and is the closest well to the site. The observation well identified as 11N-06-29M1 is located approximately 2 miles southwest of the proposed project well. The locations of the observation wells relative to the site are shown on **APPENDIX C – TIME VS. ELEVATION GRAPHS** and on the **Plate 4A - Site Plan.** Between the time period of 1950 -2009, Well # 11N-06W-27M1 has shown decreasing water levels with an average decline of approximately 9 feet over that time period. Well # 11N-06W-29M1 has also shown a slightly decreasing water level trend during the time period between 1960-2020 with an average decline of approximately 1-2 feet.

While the well 11N-06W- 29M1 has had a fairly stable 60-year water level history, well # 11N06W-27M1 has shown a more consistent decline. Overall, the data suggests that the water levels in the area have slowly been declining over the past sixty to seventy years. The declining water levels observed are not considered significant given the period of time involved, and are likely attributed to the increased residential density in the area, as well as, from irrigation demands for the Hidden Valley Lake Golf Course. The Hidden Valley Lake Golf Course and surrounding residential community were developed in the late 1960's.

[4] https://gis.water.ca.gov/app/bp-dashboard/final/#
[5] https://wdl.water.ca.gov/WaterDataLibrary/

3.0 SITE DEVELOPMENT AND WATER USE

We understand that Rancho Lake LLC (the applicant) is applying to Lake County for approval to develop a commercial cannabis cultivation operation that will ultimately be composed of twenty (20) A-Type, 3 "Medium Outdoor" license types, with up to 854,940ft² (19.63 acres) of outdoor canopy area. Proposed ancillary facilities include five (5) 6,000 ft² Harvest Storage & Staging Areas, two (2) 120ft² Pesticides & Agricultural Chemicals Storage Areas, and a 120ft² Security Center/Shed. The project property is composed of four parcels totaling approximately 1,627 acres (Lake County APNs 014-290-08 and 014-300-02, 03, & 04), all of which are owned by Comstock Ranch, LLC.

It is our understanding that there will be two cannabis harvests per year and the cultivation activities will occur between May and November (214 days) each year. The Site irrigation well located on the east side of the cultivation parcel (APN 014-290-08) will provide water for cannabis irrigation. Discussions on the well construction and well yield are presented in Section 3.5 and 3.6 of this Report. The approximate locations of the proposed outdoor cultivation areas, domestic well and other site features are shown on (**PLATE 4A –SITE PLAN OVERVIEW)**.

As part of the site development the Applicant also plans to install twenty (20) 5,000-gallon, poly, water-storage tanks proximate to the cultivation areas. Irrigation of the individual cannabis plants will then be performed from the poly tanks through drip emitter systems.

The estimated annual water usage for the project development (19.63-acre canopy) is approximately 16,000,000 gallons or 49.1 acre-feet. The project plans do not involve any water diversions, or imported water so all project water will be derived from the site irrigation well. Details on the cultivation projects water usage, including breakdowns of average and peak monthly usage, are presented in **TABLE 1A and 1B**.

3.1 OUTDOOR CULTIVATION

As discussed, the project will involve a 19.63-acre canopy of outdoor cannabis development with two annual harvests scheduled/year all on parcel (APN 014-290-08). The applicant has not had any specific experience growing cannabis at this location but the applicant is an experienced cannabis cultivator and is designing the system to use minimal amounts of water. The first annual crop will be planted by May and harvested by the end of July followed by a second crop that will be planted in July and harvested in November. All cannabis will be grown utilizing point emitter drip irrigation and irrigate early in the day while temperatures are coolest to minimize evaporation rates.

It is our understanding that the average cannabis water irrigation rate for indoor/ greenhouse farming is 4-acre ft/acre/year, and 2-acre ft/acre/year for outdoor cannabis cultivation. Based on the

proposed farming methods discussed above, and the two scheduled harvest per year, the applicant estimates that they will use approximately 2.5 acre-feet/acre/year for the 19.63 acres of proposed cultivation for a total of 49.1 acre-feet/year. An estimate of monthly water use for cannabis irrigation is presented in **TABLE 1- TOTAL SITE WATER USAGE - IRRIGATION WELL**.

3.2 RESIDENTIAL WATER USE

There is one residential dwelling on the project property. Domestic water use for the residents is supplied by a separate domestic well as shown on **PLATE 4B –SITE PLAN DETAIL** and in the **APPENDIX B – ENGINEERED SITE PLANS**. The existing domestic well is approximately 3,000 feet east of the proposed project irrigation well. Typically, residential water usage is between 0.5 and 1 acre-foot per year. Since the domestic water use at this site is obtained from a separate domestic well that is over ½ mile from the proposed cannabis irrigation well, domestic water use is considered de minimis and was not factored into the water use assessment for this property.

3.3 EMPLOYEE WATER USE

We understand that the Project will require two full-time farm mangers, as well as, several part-time seasonal employees. Therefore, for the purpose of this Assessment we estimate that the project will require an average of ten full-time employees throughout the growing season (214 days). Potable water for farm workers will come from the proposed project irrigation well. Using the Napa County Water Availability Guidance Document[6] estimate of 15 gallons of water utilized per day per cultivation worker on site, we calculated the following groundwater usage for the Project:

- Annual Onsite Worker Water Use = 10 (average number of daily employees) x 15 gallons/day (daily employee water usage) x 214 days/year) = **32,100 gallons /year = 0.13 acre-ft/year = Employee Water Use**

So, the Annual Project Water Use estimate is **49.1 acre-ft/year** (19.63 acres of canopy area) + **0.1 acre-ft/year** (Employee Water Usage) = **49.2 acre-ft/year**

[6] Water Availability Analysis (WAA) Guidance Document, Napa County, Adopted May 12, 2015.

3.4 LIVESTOCK

We understand that the property owner historically grazed cattle on the property but now only occasionally grazes a small herd of cattle on portions of the subject property. We have also estimated that after cannabis planting there will be approximately 300-acres of pasture land onsite suitable for cattle grazing. Sonoma County provides an estimate for livestock water use at 0.05 acre-feet/acre/year[7]. Therefore, using this water use rate we have provided a water use estimate for the total volume of water needed for cattle based on the estimated 300-acres of pasture available onsite.

300 acres (pasture land onsite) x 0.05 acre-feet/year (livestock usage rate) =
15 acre-feet/year – Potential Livestock Usage Rate

TABLE 1A – TOTAL SITE WATER USAGE FOR 19.63-acre CANOPY

Source	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total Gallons/AF
	gallons/acre-ft												
Cultivation (19.63-acres)	0	0	0	0	2.1M/ 6.5AF	2.4M/ 7.3AF	2.5M/ 7.7AF	2.7M/ 8.3AF	2.5M/ 7.7AF	2.3M/ 7AF	1.5M/ 4.6AF	0	16M/ 49.1AF
Employees	0	0	0	0	4,000	4,000	4,000	5,000	5,000	5,000	5,100	0	32,100/ 0.1AF
Potential Livestock	0	0	0	0	600,000	700,000	700,000	800,000	800,000	700,000	587,765	0	4,887,765 15Af
TOTAL SITE USAGE	**0**	**0**	**0**	**0**	**2,704,000**	**3,104,000**	**3,204,000**	**3,505,000**	**3,305,000**	**3,005,000**	**2,092,865**	**0**	**20,919,865 64.2AF**

Based on these estimates for onsite water use it appears that the total annual water usage for cannabis irrigation and employees is approximately 49.2 acre-ft/year (16,032,100 gallons) and the total potential water use for the site, including future livestock is 64.2 acre-feet/year (20,919,865). The peak water demand for the Site will occur annually in August, with the peak daily water demand being approximately 0.35 acre-feet (113,065 gallons/day).

Assuming cannabis operations over 214 days from early May until late November, the average daily water demand for Cannabis Irrigation is expected to be 0.23 acre-feet (74,916 gallons/day) and peak Cannabis Irrigation demand will be 0.27 care-feet (87,097 gallons/day).

[7] Sonoma County Permit and Resource Management Department, Policy and Procedure 8-2-1, Appendix A.

3.5 IRRIGATION WELL INFORMATION

Review of the Well Completion Report for the onsite irrigation water well (Well Completion Report No. 002299) indicates the site well was drilled to a total depth of 160 feet and completed at 140 feet (**APPENDIX D - WELL COMPLETION RPEORT**). This well was completed on February 11, 2021 by Weeks Drilling and Pump Co. under Drillers License (C-57) #177681. The driller logged the first 129 feet as alluvial sediments, sand, gravel and clay. The bottom 31 feet was logged as clay. The driller noted that static ground water level was 22 feet below grade (bg). And the well was installed with a 50-foot sanitary seal.

The shallow groundwater elevation indicates that the aquifer is likely unconfined. Further, the well log demonstrated fairly consistent geologic conditions without any thick clay layers or aquitards which also indicates unconfined aquifer conditions. The well screen interval extends from 50 to 130 feet bg, indicating an aquifer thickness of at least 80 feet. The Well Completion Report also noted a well yield of 300 gallons per minute (gpm) from a 1 hour well test with a drawdown of 113 feet. This well log description appears to be consistent with aquifers associated with alluvial basins which tend to store large volumes of water. The Well Completion Report is attached in **APPENDIX D**.

3.6 WELL YIELD TEST

On July 6, 2021, JAK Drilling & Pump performed a well yield test for the proposed cultivation irrigation well (Well No. 002299). The initial water level was measured at 17 feet below the top-of casing. The well did not a have a pump installed so a temporary submersible pump was placed in the well. The well yield test lasted for approximately ~6-hours pumping at an average sustained rate of 355gpm. Approximately 145,898gallons were pumped from the well during the test. Drawdown was 37 ft. after ~6-hours of pumping and after pumping was completed, the well recovery data showed that the water level had recovered to 73% in 40-minutes. A Specific Capacity of 9.59 gpm/foot of drawdown (i.e., 355 gpm / 37 feet) was calculated from this test data. The well yield test data and along with the well pump performance datasheet are attached in **APPENDIX E - WELL YIELD TEST**.

The well yield test data suggests that the onsite irrigation well can produce approximately 9.59gpm for every foot of drawdown in the well during ~6 hours of pumping. The well recovery observations demonstrated that the well may be able to produce this water without causing overdraft conditions. With the site aquifer extending to approximately 130 feet bgs, that calculates to approximately 113 ft. of available well drawdown (17ft. (static water level) - 130 ft. (aquifer depth = 113 ft. of available drawdown). This further suggests that well has ample capacity to meet the water demands of the project.

Based on the well yield test and the Well Completion Report information, it does appear that the well can produce a flow rate of at least 355-gpm for 6-hours a day. Based on the Applicants average daily irrigation and employee water demand of 74,916 gallons/day we estimate it would take approximately 3-hours and 31-minutes of pumping at 355-gpm. The peak irrigation/employee water demand at the site of 87,097 gallons per day could be met with approximately 4 hrs. and 6 minutes of pumping at 355gpm. Based on the yield test results and the anticipated water demand for the project is evident that the aquifer beneath the site can sustainably produce the water needed to meet the project demands.

3.7 MONITORING AND REPORTING

The applicant currently does not have a water totalizing meter installed at the well head. Once the project is further developed the applicant plans to design an irrigation system to pump water from the well to the cultivation sites. Once constructed, a water meter will be installed at the well head and utilized to measure total water use associated with cannabis irrigation. Monthly water usage totals will be recorded by the applicant in a log book that will be kept onsite and provided to the oversight agencies upon request.

Depth to water measurements will also be recorded from the project well on a monthly basis during the growing season. A NSF/ANSI 61 compliant positive displacement mechanical brass totalizing meter, and water level meter equipped with data logging capabilities, will be installed on the existing water supply groundwater well prior to cultivation. Inline water meters compliant with California Code of Regulations, Title 23, Division 3, Chapter 2.7 will also be installed on the main water supply lines running between the groundwater well and the storage tanks of the cultivation operation. The applicant will obtain monthly depth to water readings directly from the site well. The readings will be taken on the same day of each month and prior to daily pumping activities. Results of the water level measurements will also be recorded in a log book and stored onsite and provided to the oversight agencies upon request.

4.0 WATER BALANCE INFORMATION

4.1 PRECIPITATION

Precipitation, primarily as rainfall is the major source of inflow to the Coyote Valley Watershed. Though there are no climate stations on site or in the immediate vicinity, we estimate that the seasonal precipitation for the site is 39-inches/year**.** Based on this precipitation it can be reasonably expected that approximately 3.25 acre-ft of rain falls on every acre of the site annually, or 5,288 acre-ft over the 1,627-acres of the cultivation parcel.

4.2 GROUNDWATER RECHARGE

Groundwater recharge is the replenishment of an aquifer with water from the land surface. It is usually expressed as an average rate of inches of water per year, similar to precipitation. Thus, the volume of recharge is the rate times the land area under consideration times the time period, and is usually expressed as acre-ft per year. In addition to precipitation, other sources of recharge to an aquifer are stream and lake or pond seepage, irrigation return flow (both from canals and fields), inter-aquifer flows, and urban recharge (from water mains, septic tanks, sewers, drainage ditches).

For this site, the alluvial aquifer is considered unconfined. Drainage features that intersect and border the site have likely eroded through some of the overlying layers and are contributing to the recharge of the site's aquifer through the stream bottom. However, it is also likely that a portion of the rain water falling directly on the site infiltrates the ground surface and migrates downward through the soil matrix until it recharges the shallow aquifer. In addition, there are nearby wetlands to the southeast and ponds to the south that may be contributing to the recharge of the aquifer as well.

To estimate the groundwater recharge at the site we first assumed that the recharge to the aquifer is primarily through rainfall and that all rainfall accumulated within the 1,627-acre cultivation properties drains to Crazy Creek or Putah Creek. Therefore, the annual precipitation available for recharge onsite can initially be estimated using the following data and equation.

> 1,627-acres x 3.25 feet (Annual precipitation in Cumulative Impact Area) =
> **Estimated Annual Precipitation Onsite = 5,288 acre-ft/year**

However, this estimate does not account for surface run-off, stream underflow, and evapo-transpiration that occurs in all watersheds. According to the Santa Rosa Plain Groundwater Management Plan, the long-term average precipitation that is available for groundwater recharge is approximately 15%[8]. However, in steep mountainous areas the groundwater recharge rate can

[8] Santa Rosa Plain Groundwater Management Plan, Sonoma County Water Agency, 2014, Prepared by the Santa Rosa Plain Basin Advisory Panel.

be as low as 1.67%[9]. Since this site has some mixed topography with low-lying areas with alluvial sands and gravels as well as upland areas where runoff is high, we estimate that the long-term average precipitation that recharges groundwater within the entire site is approximately 15%. With this data and the precipitation data presented above, we can re-calculate the groundwater recharge by using the following equation.

> 5,288 acre-ft/year (annual precipitation onsite) x 0.15 (long term average for recharge) =
> **793.2 acre-ft/year Estimated Groundwater Recharge**

Based on the estimated annual recharge to the site aquifer (~793.2 acre-feet/year) and the estimated annual project usage (49.2 acre-feet/year), it appears that the Applicant will have enough water to meet their demands without causing overdraft conditions.

4.3 DROUGHT CONDITIONS

The recharge assessment presented above is based on a 5-year average from 2013 through 2017. If we were to perform a recharge analysis of one single year using a value that is 50% of the 5-year average presented above, we could estimate the possible low-end value for annual aquifer recharge as follows.

> 793.2 acre-feet/year (average aquifer recharge) x 0.5 (drought factor) =
> **396.6 acre-feet/year - Estimated Groundwater Recharge for Severe Drought Year**

Based on the estimated annual recharge to the site aquifer during severe drought (396.6) acre-feet/year) and the estimated total Site groundwater usage (64.2 acre-feet/year), it appears that the Site has sufficient groundwater resources to meet the proposed demands of the project and potential livestock grazing without creating an aquifer overdraft condition. Further, the Sites proposed annual groundwater use rate for cannabis is 0.03acre-feet/Site-acre (49.2 acre-feet/year / 1,627- acres) is well below the Coyote Valley Groundwater Basin usage rate of 0.49 acre-feet/Basin- acre[6]

[9] Metzger, L.F., Farrar, C.D., Koczot, K.M., and Reichard, E.G., 2006, Geohydrology and Water Chemistry of the Alexander Valley, Sonoma County, California: U.S. Geological Survey Scientific Investigations Report 2006-5115, 83 p.

5.0 POTENTIAL IMPACTS TO STREAMS AND NEIGHBORING WELLS

To evaluate potential well pumping impacts to surface water bodies or wells on other properties, the potential lateral extent of pumping from the planned project well was estimated. Using general relationships discussed in Driscoll (1986)[10], we estimated the lateral pumping influence using information from the 2021 well yield test performed by JAK Drilling and Pump. An approximate relationship between specific capacity calculated from the well yield test and aquifer transmissivity was used to obtain aquifer characteristics and estimate a potential radius of pumping influence. Transmissivity was estimated for an unconfined aquifer, using the relationship of specific capacity (yield/drawdown) x the coefficient of 1,500 (unconfined aquifer). To develop the slope of the drawdown curve from the pumping well, the value of Δs (drawdown over one log graph cycle) was calculated for a distance-drawdown relationship, where $T = 528Q/\Delta s$ (Driscoll,1986, Equation 9.11). The analysis is shown on the attached semi-log plot, **APPENDIX F – RADIUS OF PUMPING INFLUENCE**

As estimated, pumping the project well at 355 gpm with a drawdown of 37 feet indicates a specific capacity of 9.59 gpm/foot drawdown. Using this data and applying it to the site, we calculated a zone of pumping influence extending approximately 220 feet from the well for an unconfined aquifer. No neighboring wells were identified within the 220 radius of pumping influence. Therefore, it does not appear that pumping for cultivation will have a significant effect on nearby domestic wells.

According to the Engineered Site Plan (**APPENDIX B**), the irrigation well is located approximately 180 feet from the flood zone for Putah Creek and approximately 230 feet from the current Putah Creek channel. The radius of pumping influence graphs suggest that pumping would not have a direct effect on stream flow at this distance. However, for the purposes of this analysis, streamflow depletion is defined as the reduction in streamflow resulting from groundwater pumping. Streamflow depletion is a consequence of the law of physics requiring the conservation of mass applied to water balance models describing the movement of water in watersheds and groundwater aquifers. In such water balance models, inflows to an aquifer must be balanced by outflows from the aquifer adjusted for changes in the volume of water in storage. In most watersheds, streamflow accounts for the majority of outflow; as groundwater pumping proceeds, the volume of water supplied to wells is largely balanced by decreases in streamflow and/or aquifer storage. In the short-term, water supplied to wells is derived primarily from decreases in aquifer storage. Over longer periods these storage changes generally stabilize and streamflow depletion becomes the primary source of water pumped from wells[11].

[10] Groundwater and Wells, Second Edition, Fletcher G. Discoll, 1986, published by Johnson Division, St. Paul Minnesota, 1089p.

[11] Barlow, P.M., & Leake, S.A., 2012. Streamflow Depletion by Wells – Understanding and Managing the Effects of Groundwater Pumping on Streamflow, U.S. Geological Survey Circular 1376, 84 p.

For a conceptual watershed water balance with a control volume including groundwater aquifers, the status of the hydrologic system can be expressed most simply as:

Inflow = Outflow +/- Change in Storage

For a water balance describing a groundwater system, inflows to an aquifer typically include groundwater recharge and subsurface inflow. Outflow terms typically include streamflow, groundwater pumping, evapotranspiration from groundwater, and subsurface outflow[12]. Over long periods of time (years or decades), groundwater recharge generally represents the majority of inflow to an aquifer and stream baseflow (streamflow) and groundwater pumping generally represent the majority of outflow. Consequently, an approximate aquifer water balance can be restated as:

Groundwater Recharge ≈ Streamflow + Groundwater Pumping +/- Change in Storage

As groundwater pumping increases, those increases must be balanced by either reduction in streamflow (streamflow depletion), reductions in storage, or increases in groundwater recharge. Over the long-term, changes in storage and recharge generally stabilize such that the majority of water supplied to wells is balanced by streamflow depletion[8].

As the rate of groundwater pumping approaches the rate of groundwater recharge, streamflow approaches zero; this scenario is equivalent to a ratio of groundwater pumping to groundwater recharge equal to one. From these relationships, it can be seen that the ratio of groundwater pumping to groundwater recharge (i.e., groundwater pumping divided by groundwater recharge) provides an objective, hydrologically significant, indicator of the relative magnitude of streamflow depletion occurring in a given watershed. To determine the stream depletion for the Site itself, HES used available data from the USGS Special Bulletin 118[13] and the parameters and values that were discussed in the Site Water Use and Water Balance Sections of this Assessment Report.

Site Specific Groundwater Data

- Mean annual groundwater use = 0.03 acre-feet/acre/year
- Groundwater Recharge = 0.4875 acre-feet/acre/year
  (3.25 feet/year (average rainfall) x 0.15 (estimated recharge rate)
- Pumping Ratio (Water Use/Recharge) **6.15%**

[12] Healy, R.W. (2010) Estimating Groundwater Recharge. Cambridge University Press, Cambridge.
[13] https://gis.water.ca.gov/app/bp-dashboard/final/#

To classify each subwatershed as having a Low, Medium, or High level of streamflow depletion we used the findings of Richter et al. (2012)[14] who proposed presumptive standards for environmental flow protection in the absence of detailed studies evaluating site-specific environmental flow needs. A high level of ecological protection is presumed to be provided when flow alterations are no greater than 10% and a moderate level of protection is provided when flow alterations are in the 11-20% range[12]. The distributed model scenarios indicate that streamflow depletion of 10% or less occurs when the groundwater pumping ratio remains below ~5% and streamflow depletion of 11-20% occurs when the groundwater pumping ratio remains below ~10%.

Based on this criterion, the Site is located within a range that provides a relatively "high level of ecological protection" and is significantly below the Coyote Valley Basin Usage rate of 0.49 acre- feet/acre/year and pumping ratio of 68%[15]. As proposed, the Sites proposed pumping ratio will be 56% less than the Basin Average and appears to be consistent with the Coyote Valley Basin Prioritization Assessments. As a result, stream depletion is not considered a significant concern for this project at this time.

[14] Richter, B.D., Davis, M.M., Aspe, C., and Konrad, C., 2012. A Presumptive Standard for Environmental Flow Protection, River Research and Applications 28: 1312-1321.
[15] https://gis.water.ca.gov/app/bp-dashboard/final/#

6.0 WATER QUALITY

On March 1, 2021, water samples were collected from the on-site irrigation well and tested for Hardness, Iron, pH, and total dissolved solids (TDS). Results of the water sampling are presented below in **TABLE 2 – WATER QUALITY DATA and APPENDIX D - WELL YIELD TEST**.

TABLE 2 – WATER QUALITY DATA

Location (APN)	**Hardness (gpg)**	**Iron (mg/L)**	**TDS (mg/L)**	**pH**
Project well (014-290-08)	**41**	**1.6**	**690**	**6.8**
Comments	Very Hard softener recommended if >7 gpg	Higher than 0.3 can cause rust staining	Less than 500 ppm is acceptable	7.0 is neutral

7.0 CONCLUSIONS

The project site is located in the Coyote Valley Groundwater Basin and the Upper Putah Creek Watershed within an unconfined aquifer consisting primarily of Quaternary aged Alluvial Deposits. Recharge to the relatively shallow aquifer likely occurs primarily through underflow from nearby Crazy Creek and Putah Creek as well as from direct precipitation and percolation. The estimated groundwater usage for the entire site including development of 19.63 acres of cannabis and potential livestock raising is approximately 64.2 acre-ft/year. This value includes the estimated cannabis irrigation/employee water usage of 49.2 acre-ft/year. Average annual recharge to the Site aquifer is estimated at 793.2 acre-ft/year. Based on well yield test data collected at the site, it appears that the aquifer storage and recharge area are sufficient to provide for sustainable annual water use at the site and within the area.

In summary:

Estimated Water Usage Cannabis Development (19.63-acre canopy) = 49.1 acre-ft/year
Additional Cannabis Water Use (employees) = 0.1 acre-ft/year
Potential Future Livestock (300-acres) = 15 acre-feet/year
Total Estimated Site Water Use = 64.2 acre-feet/year
Estimated Annual Onsite Aquifer Recharge = 793.2 acre-ft/year
Sustained Well Yield after 6 hours of pumping = ~ 355 gpm
Peak Daily Water Demand for Cannabis = 0.27 acre-ft/day
Peak Daily Water Demand for Entire Property = 0.35 acre-feet/day

The results of this Assessment indicate that the groundwater to be used for the project, compared to the quantity of available groundwater is sustainable and is unlikely to result in significant declines in groundwater elevations or depletion of groundwater resources over time. The estimated water project water usage rate/site acre (0.03 acre-feet/acre) is well below the average for the Coyote Valley Groundwater Basin and the estimated pumping ratio (water use/groundwater recharge) of 6.15% is considered to provide a relatively high level of ecological protection. In addition, the horizontal and vertical separations between the irrigation well and the nearest domestic well are considered sufficient, and well interference is not considered a concern.

8.0 LIMITATIONS

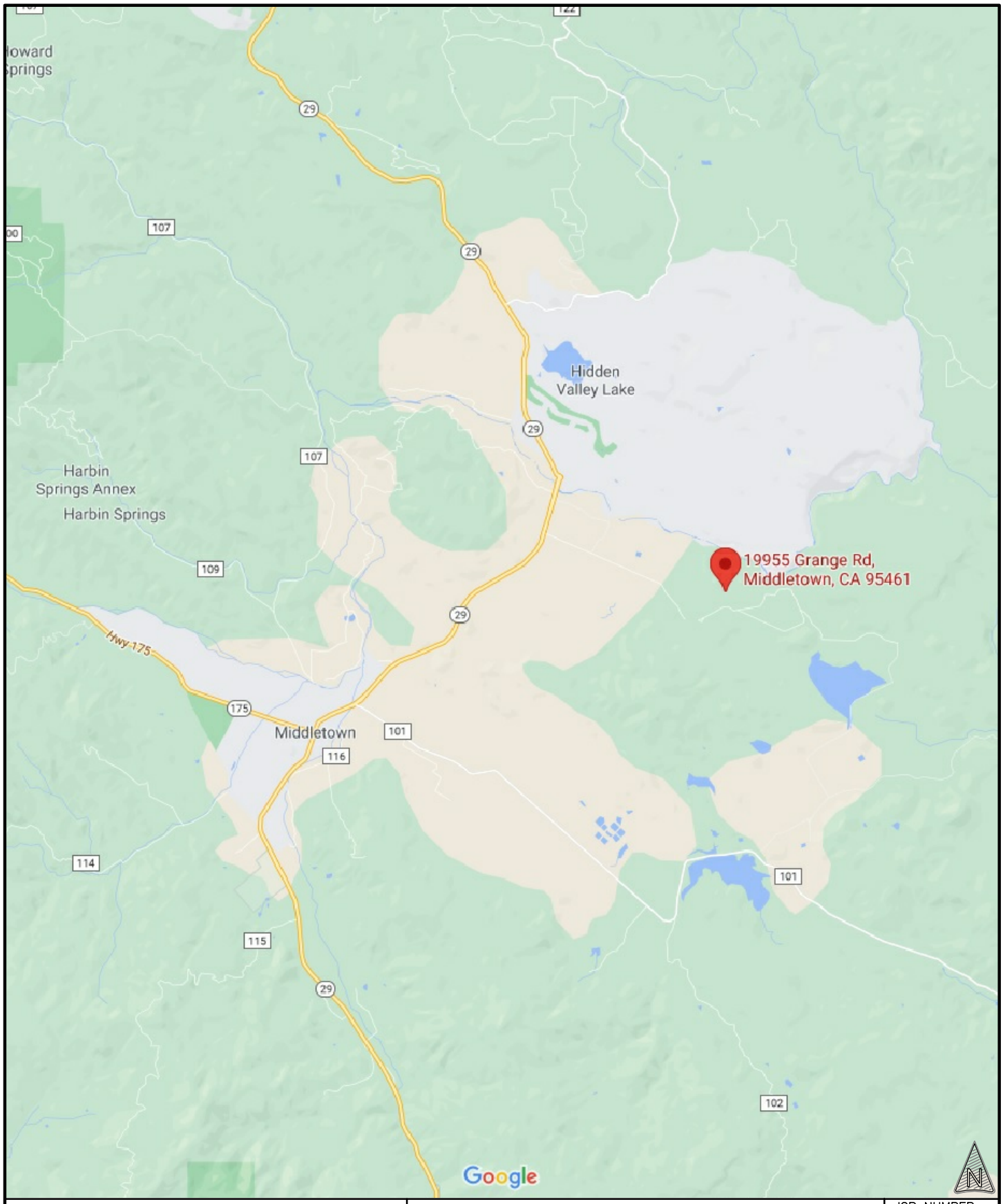
HES is not responsible for the independent conclusions, opinions or recommendations made by others based on the records review, site inspection, field exploration, laboratory test data and interpretations presented in this report.

Groundwater systems of Lake County are typically complex, and available data rarely allows for more than general assessment of groundwater conditions and delineation of aquifers. Hydrogeologic interpretations are based on the drillers' reports made available to us through the California Department of Water Resources, available geologic maps and hydrogeologic studies and professional judgment. This analysis is based on limited available data and relies significantly on interpretation of data from disparate sources of disparate quality.

It should be noted that hydro-geological assessments are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. Additionally, the passage of time may result in a change in the environmental characteristics at this site and surrounding properties. This report does not warrant against future operations or conditions, nor does this warrant operations or conditions present of a type or at a location not investigated.

This study is not intended to assess if any soil contamination, waste emplacement, or groundwater contamination exists by subsurface sampling through the completion of soil borings and the installation of monitoring wells. The scope of work, determined by the client, did not include these activities.

This Report is for the exclusive use of Rancho Lake LLC, their affiliates, designates and assignees and no other party shall have any right to rely on any service provided by Hurvitz Environmental Services without prior written consent.



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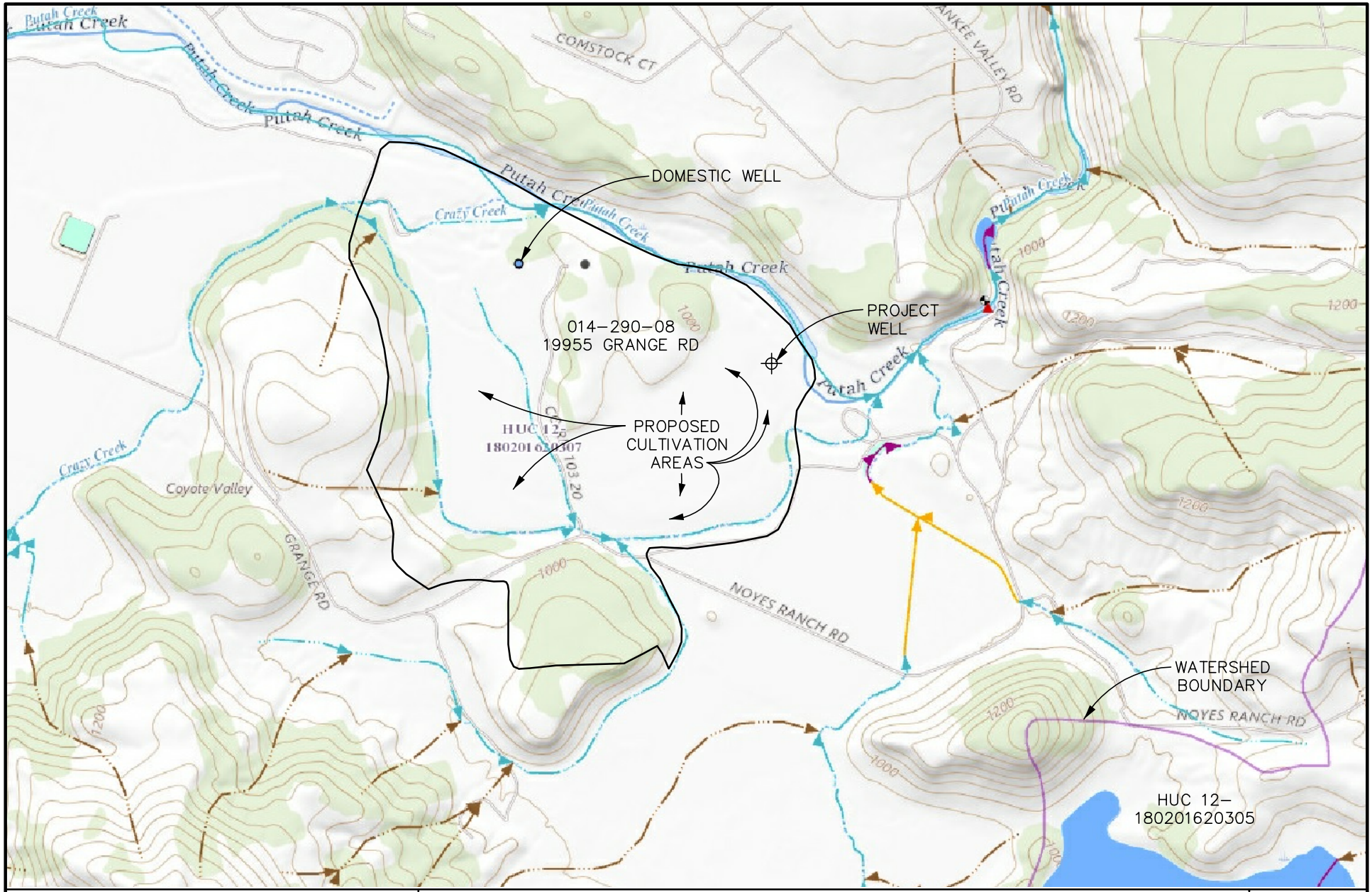
SITE LOCATION MAP

19955 GRANGE RD
MIDDLETOWN, CALIFORNIA 95461

JOB NUMBER: 5148.01
DATE: 6/30/21
PLATE: 1



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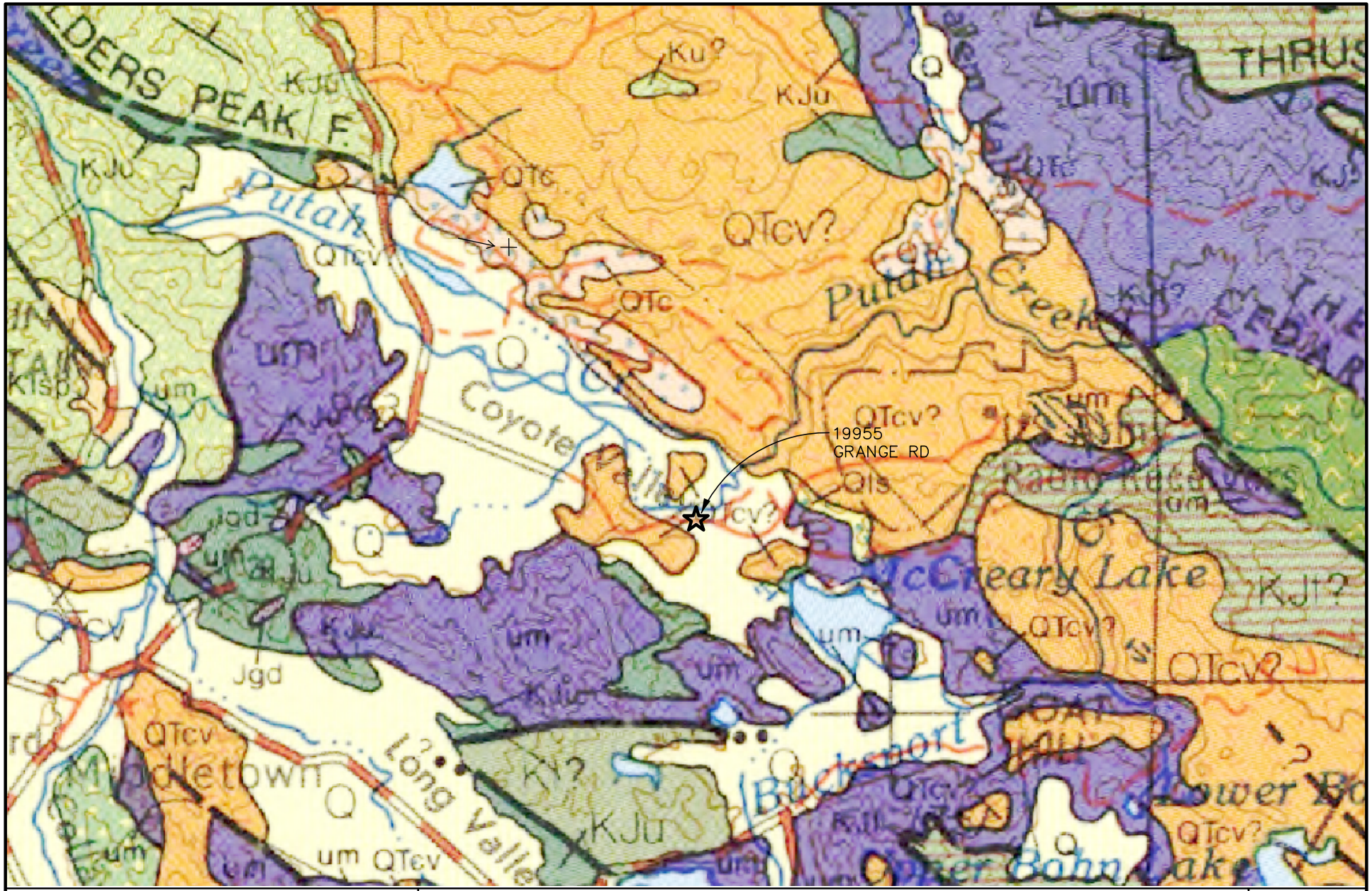
TOPOGRAPHIC MAP

19955 GRANGE RD
MIDDLETOWN, CALIFORNIA 95461

JOB NUMBER: 5148.01
DATE: 6/30/21
PLATE: 2



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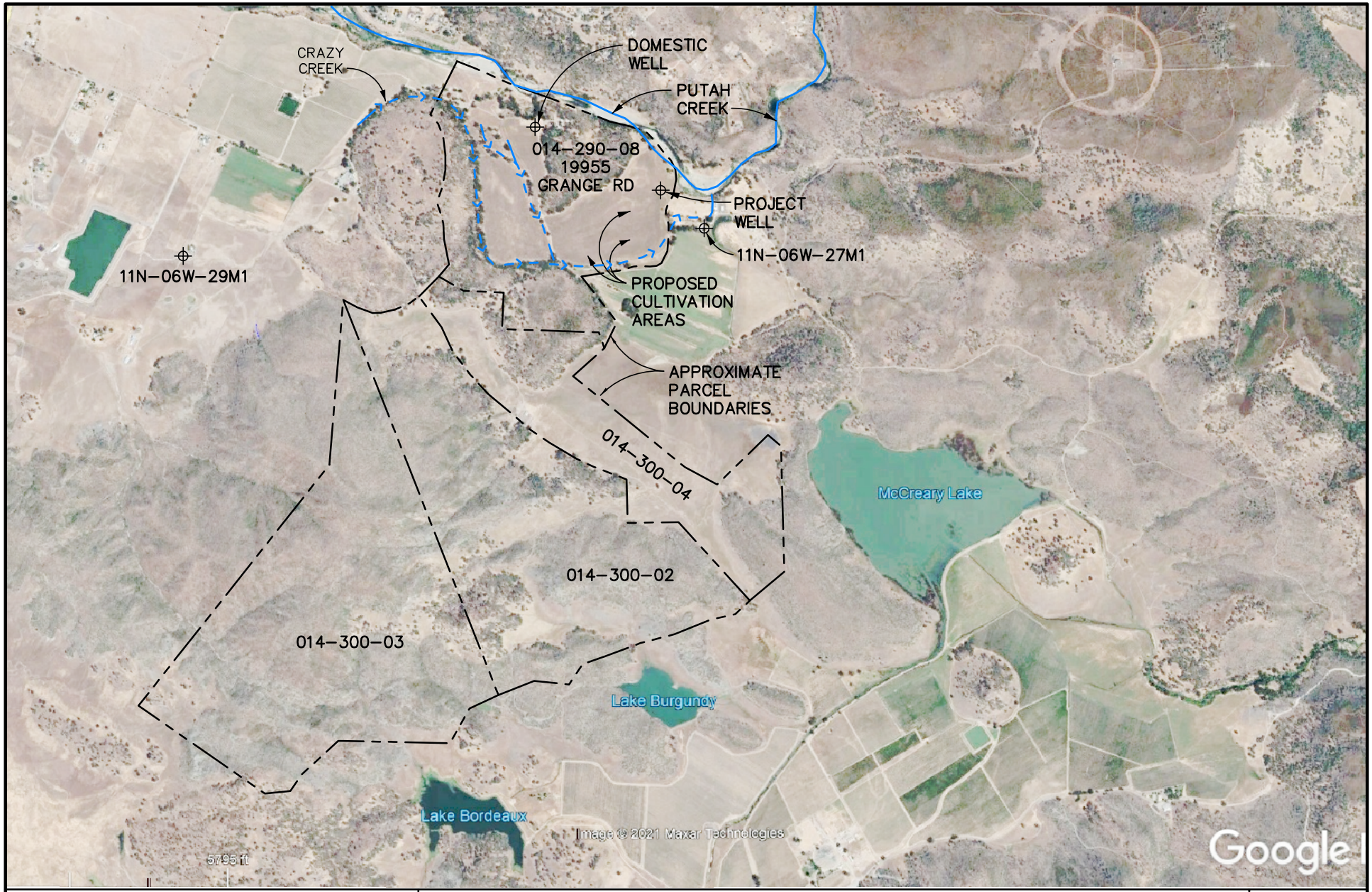
GEOLOGIC MAP

19955 GRANGE RD
MIDDLETOWN, CALIFORNIA 95461

JOB NUMBER: 5148.01
DATE: 6/30/21
PLATE: 3



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SITE PLAN OVERVIEW

19955 GRANGE RD
MIDDLETOWN, CALIFORNIA 95461

JOB NUMBER: 5148.01
DATE: 6/30/21
PLATE: 4A

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SITE PLAN DETAIL

19955 GRANGE RD
MIDDLETOWN, CALIFORNIA 95461

JOB NUMBER: 5148.01
DATE: 6/30/21
PLATE: 4B

APPENDIX A
SITE PHOTOGRAPHS

SITE PHOTOGRAPHS

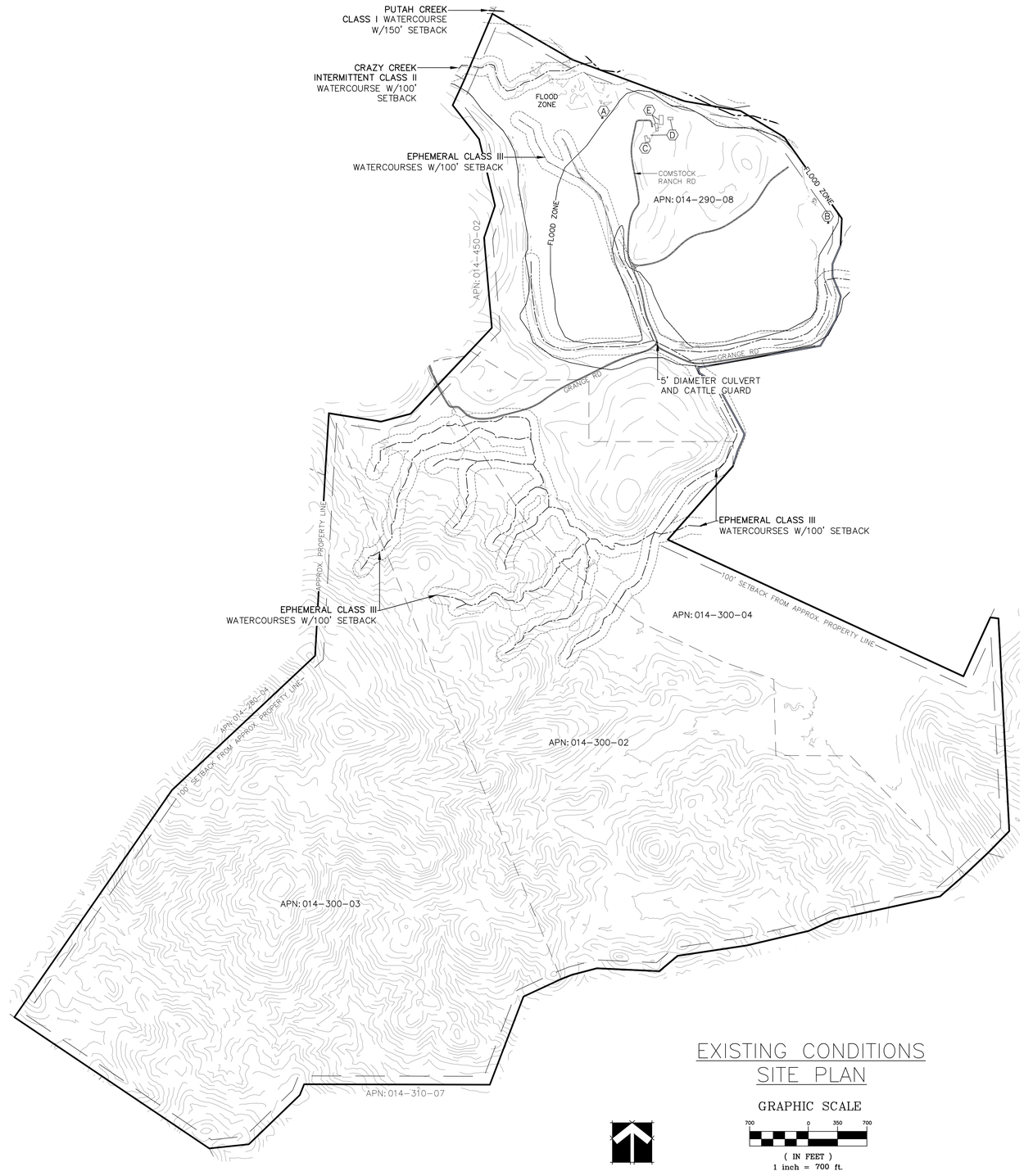
Photo 1: View of proposed cultivation area

Photo 2: View of proposed cannabis irrigation well.

Photo 3: View of domestic well.

Photo 4: View of Putah Creek from the cultivation parcel.

APPENDIX B
ENGINEERED SITE PLANS



EXISTING CONDITIONS SITE PLAN

GRAPHIC SCALE

700 0 350 700

(IN FEET)
1 inch = 700 ft.

VICINITY MAP
NO SCALE

RANCHO LAKE, LLC
19955 GRANGE ROAD
MIDDLETOWN, CA 95461
APNs:014-290-08 AND
014-300-02, 03, & 04

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
	ASPHALT
	GRAVEL
	CREEK / SWALE
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATELY
DWY	DRIVEWAY
(E)	EXISTING
(P)	PROPOSED
RD	ROAD
SF	SQUARE FEET

NOTES:
1. CONTOUR INTERVAL IS 20'

Ⓐ (E) GROUNDWATER WELL
LAT: 38.77970°
LONG: -122.53429°
BENEFICIAL USES: DOMESTIC & FIRE PROTECTION

Ⓑ (E) GROUNDWATER WELL
LAT: 38.77697°
LONG: -122.52711°
BENEFICIAL USES: IRRIGATION

Ⓒ (E) RESIDENCE

Ⓓ (E) ACCESSORY AG STRUCTURE(S)

Ⓔ (E) BARN(S)

REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE c
REDDING, CA. 96001
530-526-7493

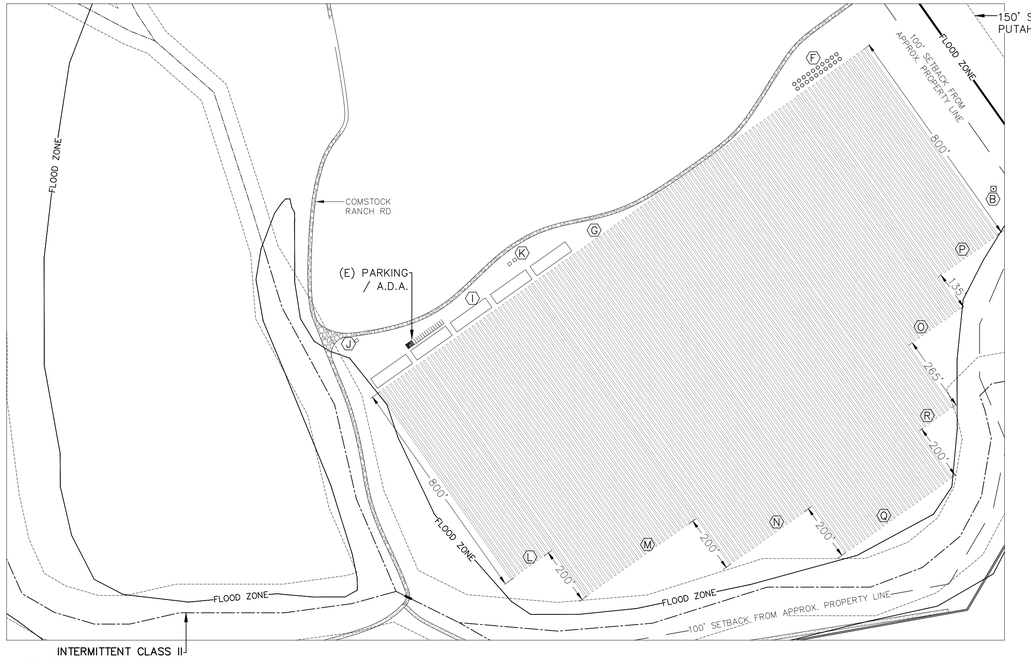
Revisions:

PLANS PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JASON B. VINE
No. 67800
exp 06/30/25
CIVIL
STATE OF CALIFORNIA

EXISTING CONDITIONS SITE PLAN
RANCHO LAKE, LLC
19955 GRANGE RD.
MIDDLETOWN, CA 95461
LAKE COUNTY
APNs:014-290-08 & 12 AND 014-300-02, 03, & 04

PLOTTED BY: ---
DATE PLOTTED: 6/26/23
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET: 1

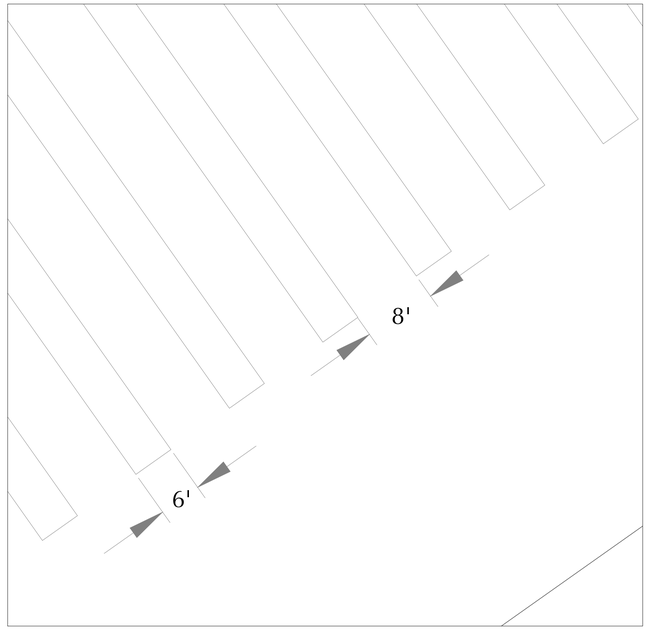


CULTIVATION SITE PLAN WITH CANOPY

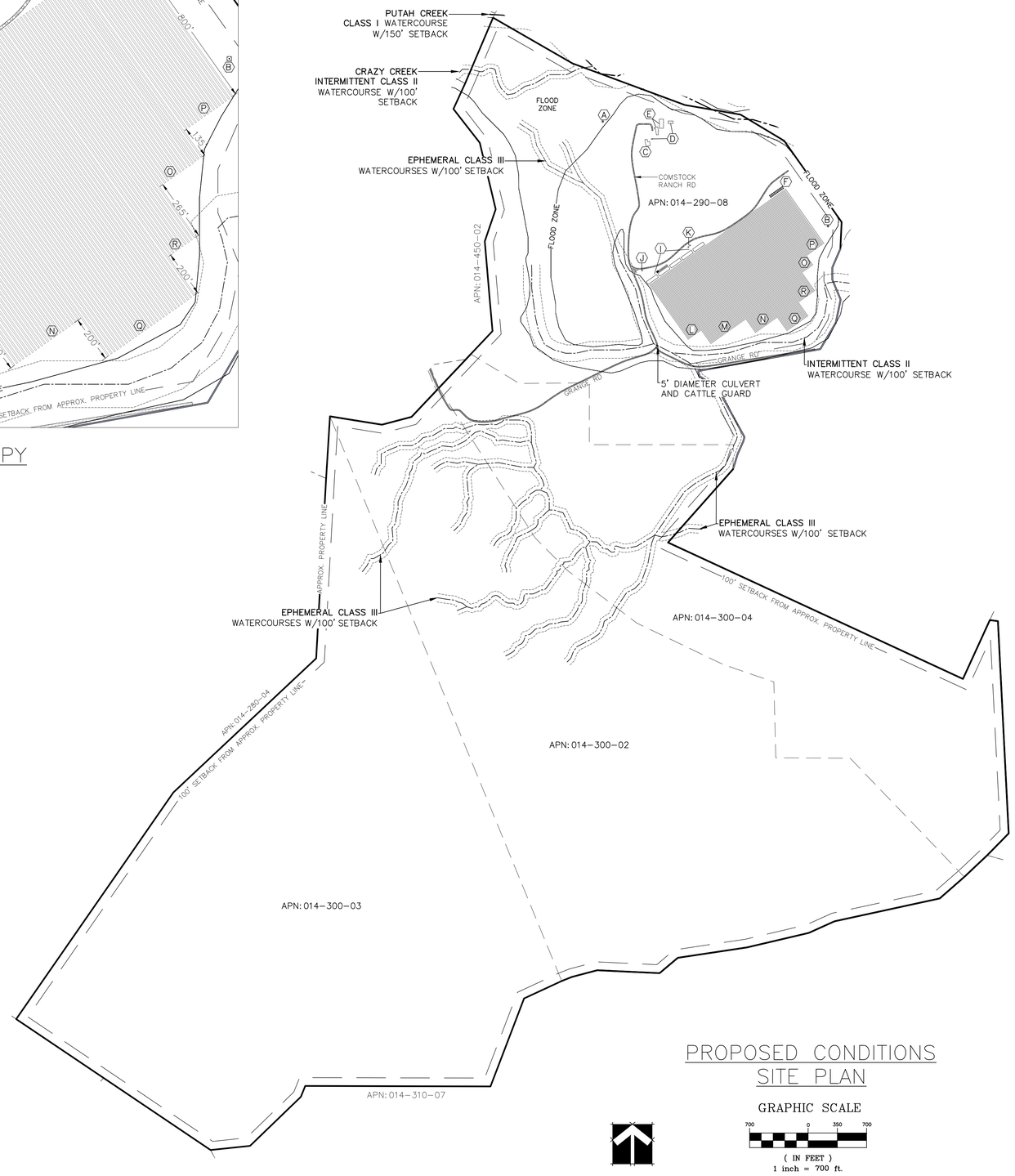
GRAPHIC SCALE

250 0 125 250

(IN FEET)
1 inch = 250 ft.



CANOPY ROW DETAIL (TYP)



PROPOSED CONDITIONS SITE PLAN

GRAPHIC SCALE

700 0 350 700

(IN FEET)
1 inch = 700 ft.

VICINITY MAP
NO SCALE

RANCHO LAKE, LLC
19955 GRANGE ROAD
MIDDLETOWN, CA 95461
APNs:014-290-08 AND
014-300-02, 03, & 04

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
	ASPHALT
	GRAVEL
	CREEK / SWALE
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATELY
DWY	DRIVEWAY
(E)	EXISTING
(P)	PROPOSED
RD	ROAD
SF	SQUARE FEET

NOTES:
1. CONTOUR INTFRVAL IS 20'

Ⓐ (E) GROUNDWATER WELL
LAT: 38.77970°
LONG: -122.53429°
BENEFICIAL USES: DOMESTIC & FIRE PROTECTION

Ⓑ (E) GROUNDWATER WELL
LAT: 38.77697°
LONG: -122.52711°
BENEFICIAL USES: IRRIGATION

Ⓒ (E) RESIDENCE

Ⓓ (E) ACCESSORY AG STRUCTURE(S)

Ⓔ (E) BARN(S)

Ⓕ (P) TWENTY 5,000 GALLON HEAVY-DUTY WATER STORAGE TANKS

Ⓖ (P) OUTDOOR CULTIVATION AREA

Ⓘ (P) FIVE 40'x50' (6000SF) HARVEST STORAGE AND STAGING AREAS

Ⓙ (P) 10'x12' (120SF) SECURITY CENTER/SHED

Ⓚ (P) TWO 10'x12' (120SF) PESTICIDES & AGRICULTURAL CHEMICALS STORAGE AREA

OUTDOOR CANOPY AREAS

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Ⓜ (P) THIRTY 6'X1,000' (6,000 SF) CANOPY AREAS

Ⓝ (P) TWENTY-TWO 6'X1,200 (7,200 SF) CANOPY AREAS

Ⓞ (P) FOURTEEN 6'X935' (5,610 SF) CANOPY AREAS

Ⓟ (P) SIXTEEN 6'X800' (4,800 SF) CANOPY AREAS

Ⓠ (P) TWENTY-NINE 6'X1,400' (8,400 SF) CANOPY AREAS

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Revisions:

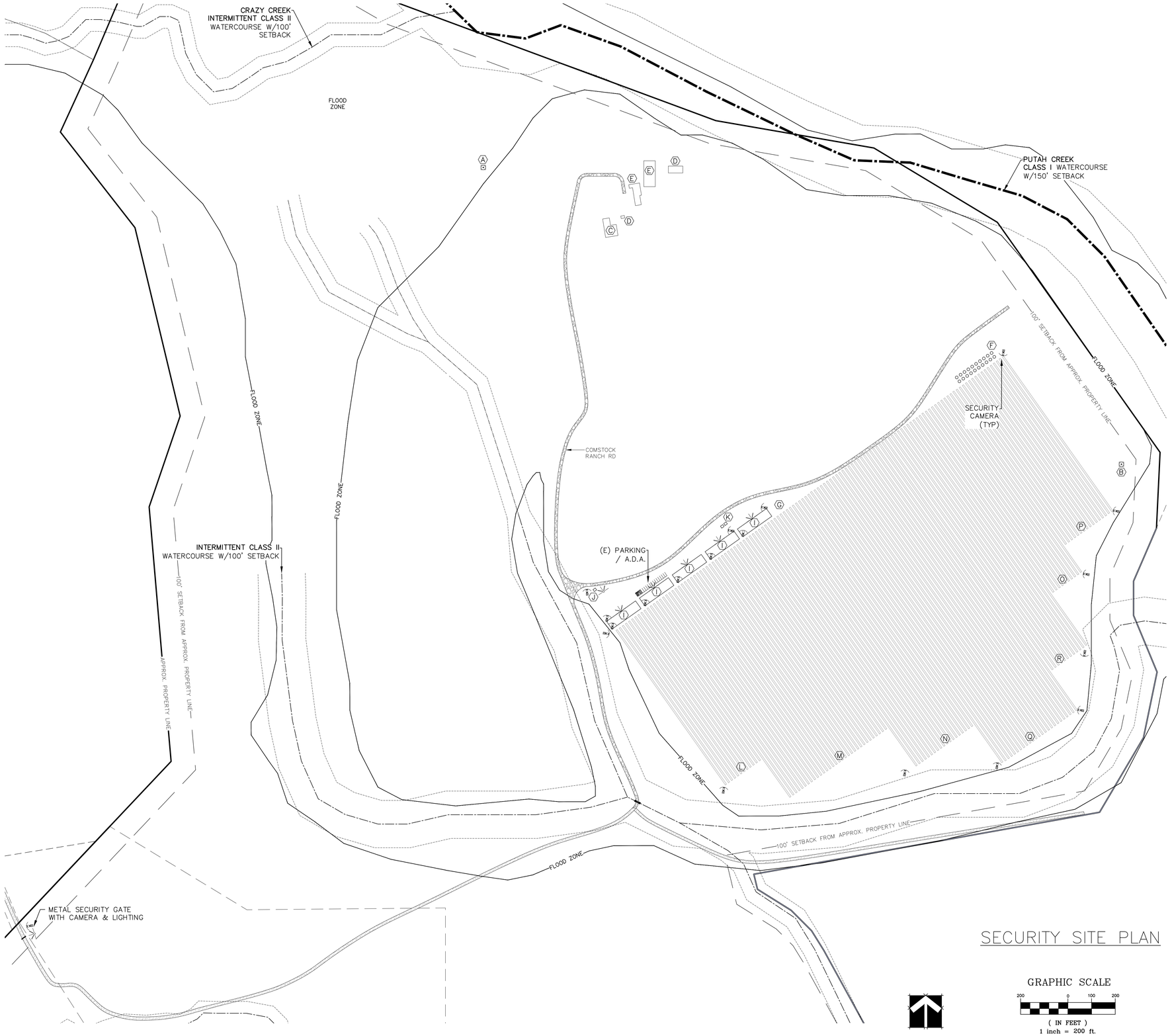
REALM ENGINEERING
CIVIL ENGINEERING, SURVEYING & PLANNING
1767 MARKET STREET SUITE c
REDDING, CA. 96001
530-526-7493

PLANS PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JASON B. VINE
No. 67800
EXP. 06/30/21
CIVIL
STATE OF CALIFORNIA

PROPOSED CONDITIONS SITE PLAN - PHASE II
RANCHO LAKE, LLC
19955 GRANGE RD.
MIDDLETOWN, CA 95461
LAKE COUNTY
APNs:014-290-08 & 12 AND 014-300-02, 03, & 04

PLOTTED BY: ---
DATE PLOTTED:
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET: 1



SECURITY SITE PLAN

GRAPHIC SCALE

200 0 100 200

(IN FEET)
1 inch = 200 ft.

VICINITY MAP
NO SCALE

RANCHO LAKE, LLC
19955 GRANGE ROAD
MIDDLETOWN, CA 95461
APNs:014-290-08 AND
014-300-02, 03, & 04

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
	(P) SECURITY LIGHTS
	(P) SECURITY CAMERAS
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATE
DWY	DRIVEWAY
(E)	EXISTING
(P)	PROPOSED
RD	ROAD
SF	SQUARE FEET

NOTES:
1. CONTOUR INTERVAL IS 20'

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LONG: -122.53429°
BENEFICIAL USES: DOMESTIC & FIRE PROTECTION

Ⓑ (E) GROUNDWATER WELL
LAT: 38.77697°
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BENEFICIAL USES: IRRIGATION

Ⓒ (E) RESIDENCE

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Ⓔ (E) BARN(S)

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Revisions:

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CIVIL ENGINEERING, SURVEYING & PLANNING
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PLANS PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JASON B. VINE
No. 67800
EXP. 06/30/21
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STATE OF CALIFORNIA

SECURITY SITE PLAN
RANCHO LAKE, LLC
19955 GRANGE RD.
MIDDLETOWN, CA 95461
LAKE COUNTY
APNs:014-290-08 & 12 AND 014-300-02, 03, & 04

PLOTTED BY: ---
DATE PLOTTED:
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET: 1

NOTES:

1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"–5" (75–125mm) DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
2. STRAW ROLLS MUST BE PLACED ALONG SLOPE CONTOURS

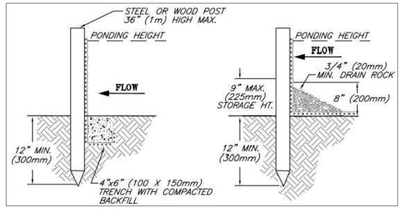
EROSION & SEDIMENT CONTROL NOTES:

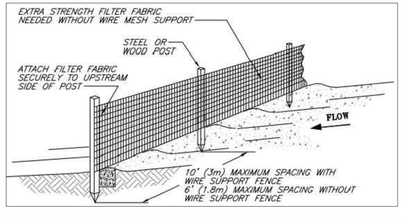
1. CONTRACTOR IS TO IMPLEMENT BEST MANAGEMENT PRACTICES (BMPS) TO CONTROL EROSION CONTROL AND REDUCE THE OFF–SITE DISCHARGE OF SEDIMENT TO THE MAXIMUM EXTENT PRACTICABLE.
2. EROSION CONTROL BMPS SHALL BE IN PLACE AND MAINTAINED ALL YEAR ROUND.
3. HE CONTRACTOR SHALL FOLLOW THE GUIDELINES FROM THE "CALIFORNIA STORMWATER BMP HANDBOOK" FOR THE MEASURES SHOWN OR STATED ON THESE PLANS.
4. CONTRACTOR MUST ENSURE THAT THE CONSTRUCTION SITE IS PREPARED PRIOR TO THE ONSET OF ANY STORM.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED. CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE QUALIFIED SWPPP PRACTITIONER (QSP).
6. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO ANTICIPATED FIELD CONDITIONS. VARIATIONS MAY BE MADE TO THE PLAN IN THE FIELD SUBJECT TO THE APPROVAL OF OR AT THE DIRECTION OF A REPRESENTATIVE OF LAKE COUNTY.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED BEFORE AND AFTER ALL STORMS TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
8. CONTRACTOR SHALL MAINTAIN A LOG AT THE SITE OF ALL INSPECTIONS OR MAINTENANCE OF BMPS, AS WELL AS, ANY CORRECTIVE CHANGES TO THE BMPS OR EROSION AND SEDIMENT CONTROL PLAN.
9. THE CONTRACTOR SHALL INSTALL THE STABILIZED CONSTRUCTION ENTRANCE PRIOR TO COMMENCEMENT OF GRADING. LOCATION OF THE ENTRANCE MAY BE ADJUSTED BY THE CONTRACTOR TO FACILITATE GRADING OPERATIONS. ALL CONSTRUCTION TRAFFIC ENTERING THE PAVED ROAD MUST CROSS THE STABILIZED CONSTRUCTION ENTRANCE.
10. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE SWEPT AT THE END OF EACH WORKING DAY OR AS NECESSARY.
11. ANY LOOSE GROUND FROM EXCAVATING GRADING OPERATIONS SHALL BE SECURED PRIOR TO ANY RAIN EVENT. STRAW OR TARP ALL DISTURBED OR EXCAVATED GROUND.
12. CONTRACTOR SHALL PLACE GRAVEL BAGS AROUND ALL NEW DRAINAGE STRUCTURE OPENINGS IMMEDIATELY AFTER THE STRUCTURE OPENING IS CONSTRUCTED. THESE GRAVEL BAGS SHALL BE MAINTAINED AND REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.
13. AS A MINIMUM, ALL GRADED AREAS AND EXPOSED SOIL WITHIN THE PROJECT SHALL BE SEEDED PER THE REQUIREMENTS OF LAKE COUNTY.
14. DUST GENERATION MUST BE MINIMIZED AND A WATER TRUCK MUST BE AVAILABLE ON–SITE FOR ADEQUATE DUST CONTROL.

SILT FENCE DETAILS

NOTES:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT & REPAIR FENCE AFTER EACH STORM EVENT & REMOVE SEDIMENT WHEN NECESSARY.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF–SITE AND CAN BE PERMANENTLY STABILIZED.





DRAINAGE PATTERNS

STRAW ROLLS (ADJUST TO SUIT FIELD CONDITIONS)

DISCHARGE POINT

S-1 SAMPLING LOCATION

CMS CONSTRUCTION MATERIALS STORAGE AREA

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
	ASPHALT
	GRAVEL
	CREEK / SWALE
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATELY
DWY	DRIVEWAY
(E)	EXISTING
(P)	PROPOSED
RD	ROAD
SF	SQUARE FEET

NOTES:

1. CONTOUR INTERVAL IS 20'

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BENEFICIAL USES: DOMESTIC & FIRE PROTECTION

Ⓑ (E) GROUNDWATER WELL
LAT: 38.77697°
LONG: –122.52711°
BENEFICIAL USES: IRRIGATION

Ⓒ (E) RESIDENCE

Ⓓ (E) ACCESSORY AG STRUCTURE(S)

Ⓔ (E) BARN(S)

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Ⓠ (P) TWENTY-NINE 6'X1,400' (8,400 SF) CANOPY AREAS

Ⓡ (P) NINE 6'X1,200' (7,200 SF) CANOPY AREAS

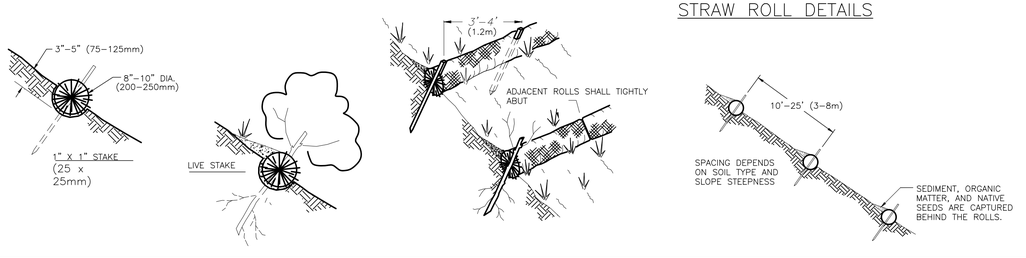
EROSION & SEDIMENT CONTROL PLAN

GRAPHIC SCALE

200 0 100 200

(IN FEET)
1 inch = 200 ft.

STRAW ROLL DETAILS



Revisions:

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1767 MARKET STREET SUITE c
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PLANS PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JASON B. VINE
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exp.06/30/21
CIVIL
STATE OF CALIFORNIA

EROSION & SEDIMENT CONTROL PLAN

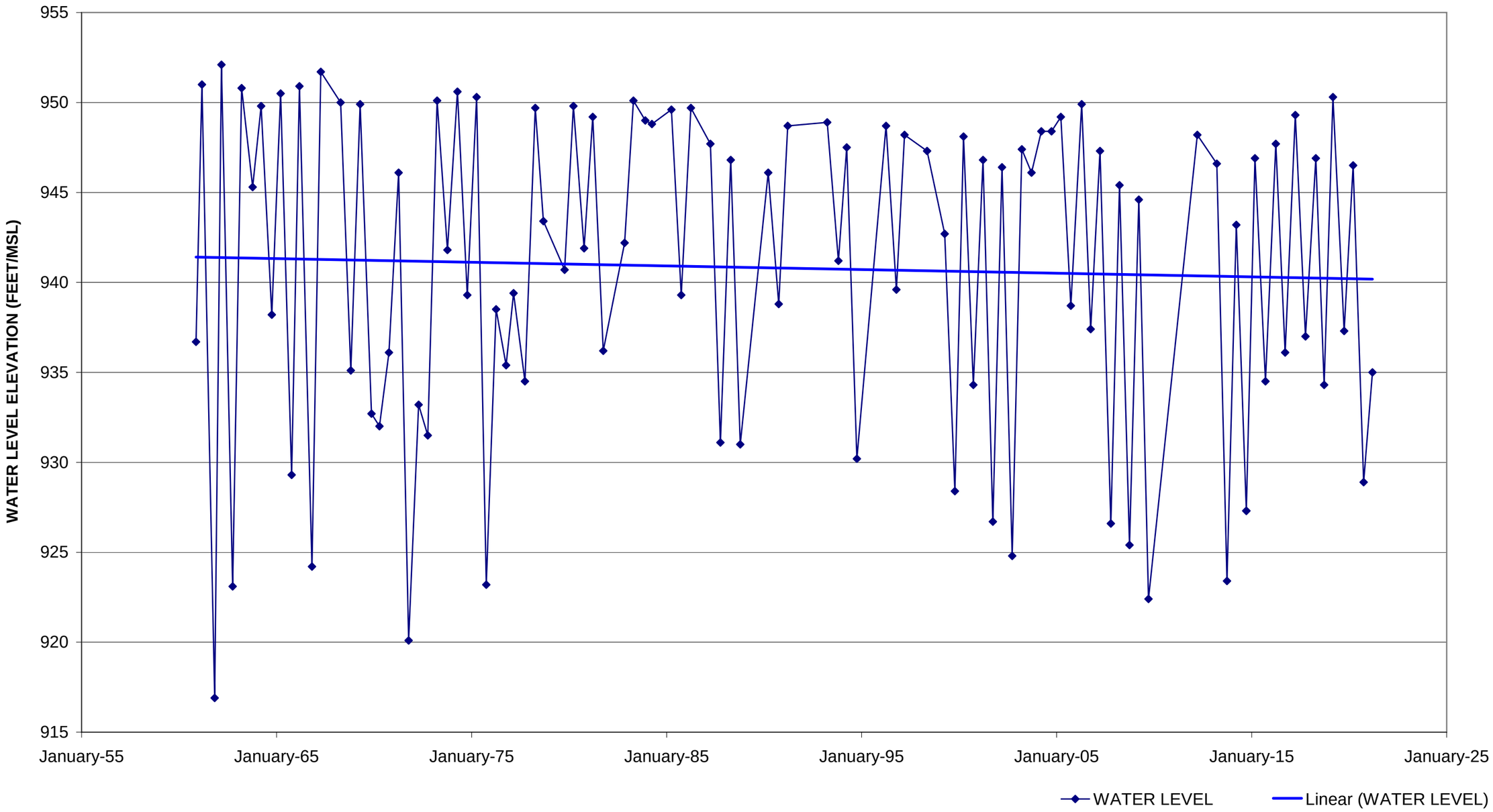
RANCHO LAKE, LLC

19955 GRANGE RD.
MIDDLETOWN, CA 95461
LAKE COUNTY
APNs:014-290-08 & 12 AND 014-300-02, 03, & 04

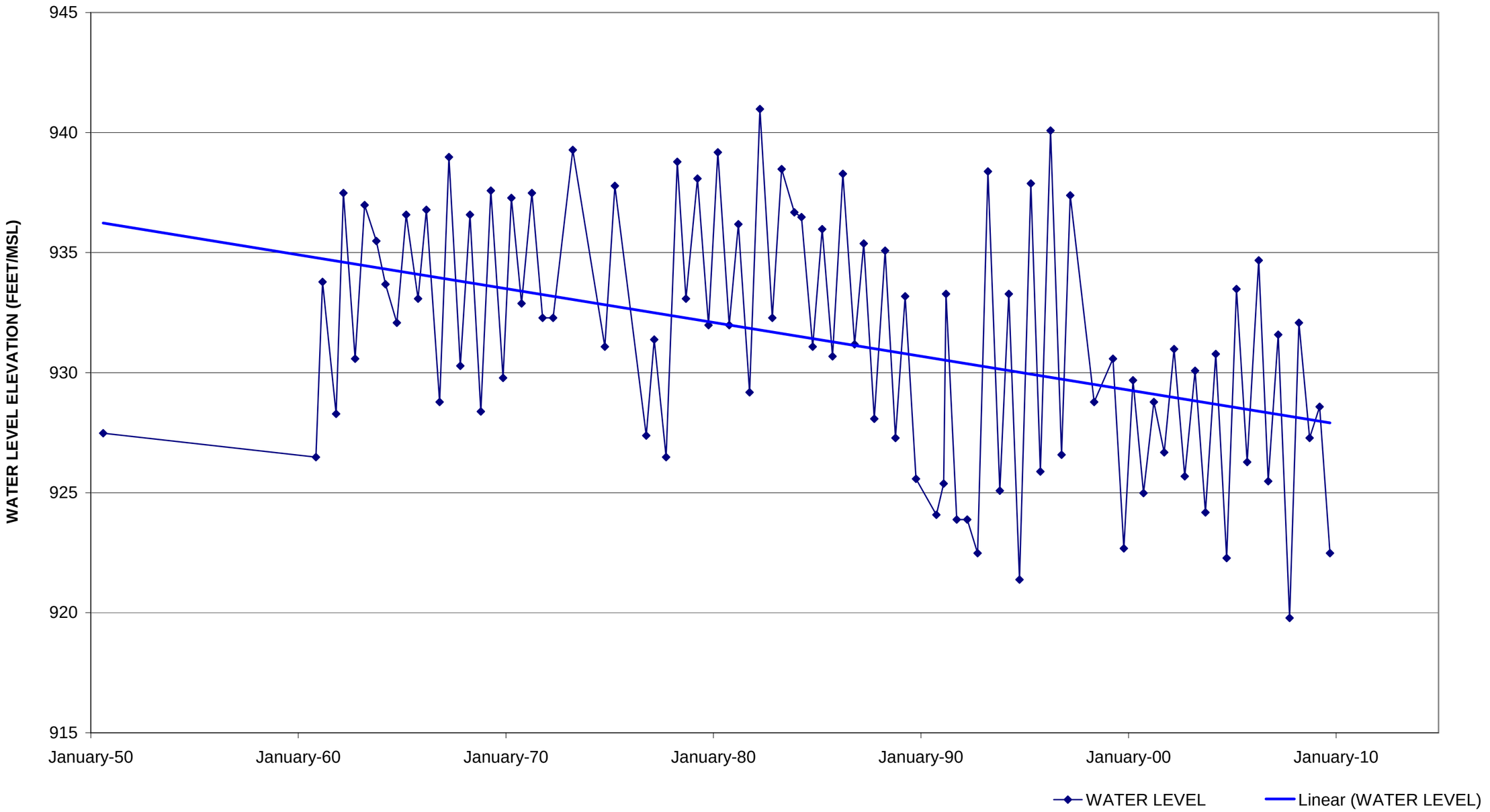
PLOTTED BY: ---
DATE PLOTTED:
SCALE OF DRAWING: SEE PLAN
JOB NUMBER:
CADD FILE:
SHEET: 1

APPENDIX C
TIME VS. ELEVATION GRAPHS

TIME VS WATER LEVEL ELEVATION 11N-06-29M1



TIME VS WATER LEVEL ELEVATION 11N-06W-27M1



APPENDIX D
WELL COMPLETION REPORT

State of California

Well Completion Report

Form DWR 188 Submitted 2/23/2021

WCR2021-002299

Owner's Well Number | Date Work Began 02/02/2021 | Date Work Ended 02/11/2021

Local Permit Agency Lake County Health Services Department - Environmental Health Division

Secondary Permit Agency | Permit Number WE-5548 | Permit Date 01/20/2021

Well Owner (must remain confidential pursuant to Water Code 13752)

Name James Comstock

Mailing Address C/O All Good LLC

2349 Circadian Way

City Santa Rosa State Ca Zip 95407

Planned Use and Activity

Activity New Well

Planned Use Water Supply Irrigation - Agriculture

Well Location

Address 19955 Grange RD

City Middletown Zip 95461 County Lake

Latitude 38 Deg. 46 Min. 34.7 Sec. N Longitude -122 Deg. 31 Min. 28 Sec. W

Dec. Lat. 38.7763056 Dec. Long. -122.5244444

Vertical Datum | Horizontal Datum WGS84

Location Accuracy 20 Ft | Location Determination Method

APN 014-029-08

Township 11 N

Range 06 W

Section 28

Baseline Meridian Mount Diablo

Ground Surface Elevation

Elevation Accuracy

Elevation Determination Method

Borehole Information

Orientation Vertical | Specify

Drilling Method Direct Rotary | Drilling Fluid Bentonite

Total Depth of Boring 160 Feet

Total Depth of Completed Well 140 Feet

Water Level and Yield of Completed Well

Depth to first water | (Feet below surface)

Depth to Static Water Level 22 (Feet) | Date Measured 02/11/2021

Estimated Yield* 300 (GPM) | Test Type Air Lift

Test Length 1 (Hours) | Total Drawdown 113 (feet)

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

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	20	Sand, soil and gravel
20	79	Sand and gravel
79	90	Sand and clay
90	112	Gravel and sand
112	129	Gravel
129	160	Clay

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	50	Blank	PVC	OD: 8.625 in. | SDR: 17 | Thickness: 0.508 in.	0.508	8.625			
1	50	130	Screen	PVC	OD: 8.625 in. | SDR: 17 | Thickness: 0.508 in.	0.508	8.625	Milled Slots	0.032	
1	130	140	Blank	PVC	OD: 8.625 in. | SDR: 17 | Thickness: 0.508 in.	0.508	8.625			

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	50	Cement	Portland Cement/Neat Cement		Seal
50	160	Filter Pack	Other Gravel Pack	3/8	Pea Gravel

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	50	14.75
50	160	12.25

Certification Statement

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

Name: WEEKS DRILLING AND PUMP CO (Person, Firm or Corporation)

PO BOX 176 (Address) | SEBASTOPOL (City) | CA (State) | 94573- (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 02/23/2021 (Date Signed) | 177681 (C-57 License Number)

Attachments

014-290-08.pdf - Location Map

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N

Latitude Deg/Min/Sec

W

Longitude Deg/Min/Sec

TRS:

APN:

APPENDIX E
WELL YIELD TEST

JAK Drilling & Pump

Well Drilling Pumps Water Treatment

Hole to Home

WELL PERFORMANCE TEST REPORT

Client Name: Somarosa Farms Attn: Melissa Huynh
Property Location: 19955 Grange Road, Middletown, CA
Parcel Number: 014-290-08
Number of Wells Evaluated: One
Well Performance Test Completion Date: March 12, 2021
Water Samples Collected: No
Pump Technician: Quinn Beckens

Location Description: 38.7763056, -122.524444
Total Depth: 140-feet below top of casing
Depth to Static Water Level: 17-feet below the top of casing
Diameter of well: 8-inches
Casing type: PVC
Test Duration: 6+ hours
Test Type: Pump
Pumping Rate: 360.24-Gallons Per Minute (GPM)

Observations: The well is located south of the property boundary in the northeast corner of the parcel (see attached Parcel Boundary and Well Location Maps). Per the attached Well Completion Report, the well was completed on February 11, 2021, by Week's Drilling and Pump Company.

As referenced on the well drilling report, while airlifting for approximately 1-hour, the well purportedly produced 300-GPM. Due to time constraints associated with obtaining a test pump capable of producing flows of 300+ GPM, an initial well performance test was conducted using a 100-GPM series submersible test pump. Due to the limitations of the test pump, JAK observed an average pumping rate of 129.69-GPM during that test conducted on March 12, 2021. On July 2, 202, JAK installed a 25-horsepower 300-GPM series submersible pump in the well and then followed up the installation with an additional six-hour pump test.

Well Performance Pump Test: The six-hour pump test was conducted on July 6, 2021, using the newly installed 25-horse 300-GPM submersible test pump set in accordance with industry standards. Per the pump curve, the submersible pump can produce flows of 350+GPM at a pumping level of 140-feet below the top of casing, this is the maximum recommended rate of flow for the 300-GPM series pump at that pumping level. The static water level within the well was measured prior to the start of the test. Once the performance test began, the depth-to-water or pumping level was measured manually with a Powers Water Meter in the well every 15-minutes during the first hour of the test and then every 30-minutes for the next two hours followed by every 60-minutes for the remainder of the test. The pumping rate was measured by timing the flow into a volume verified holding tank. The pumping rate was measured at the same intervals as the pumping level. Both the depth-to-water/pumping level and pumping rate measurements are summarized in the attached table.

The static water level was measured at 17-feet below the top of casing at the start of the performance test. The pumping level decreased immediately to 53-feet below the top of casing within the first 15-minutes of starting the test. The pumping level then stabilized at 54-feet below the top of casing after the first hour where it remained for the duration of the test. The pumping rate, measured by timing the flow into a volume verified holding tank, measured at 487.50-GPM at the beginning of the test. Per the manufacturer's specifications, the pump should not be operated at that rate for any extended period of time. Therefore, using a gate valve installed on the discharge side, the flow was restricted to 355-GPM which corresponds to the manufacturer's pump curve with an intake set at 140-feet below the top of casing. After six hours of pumping, the well produced 145,897.5-gallons which averages out to a pumping rate of 360.24-GPM.

After six hours of pumping, well pump was shut off and the well was then allowed to rest and recharge. The depth-to-water was measured in the well after 10-minutes at 34.5-feet and then again in the well after 30-minutes at 27-feet below the top of casing, resulting in a recharge rate of 73.33% after resting 40-minutes. At the observed rate of recharge, the well would be fully recharged within an hour of turning off the pump. At 355-GPM, assuming all variables remain constant, the well can produce 186,588,000-gallons of water annually.

Water Quality: During the performance test, JAK collected a water sample for the purpose of a field quality test with the following results:

Parameter	Concentration	Discussion
Hardness	41-Grains per gallon	VERY HARD, a softener is recommended when the hardness is greater than 7-gpg
Iron (ferrous)	1.5-part per million	EPA suggests a concentration of less than 0.3ppm for public drinking water system, higher concentrations can cause rust staining over time
pH	6.6	A pH of 7.0 is considered neutral
Total Dissolved Solids	876-part per million	Less than 500-ppm is acceptable, the higher the concentration the harder the water typically

Disclaimer:
Observations made of the well(s) are strictly limited to the date and time that the test(s) was conducted and are in no way a guarantee of future conditions, including but not limited to the quantity and/or quality of the water produced by this well. Please feel free to contact our office if there are any questions regarding the well test and/or well test report.

Sincerely,

Jessica Moreno
JAK Drilling & Pump

Attachments:
Parcel Boundary Map
Well Location Map
Well Completion Report
Table 1: Well Performance Test Data

PARCEL BOUNDARY MAP

19955 Grange Road

Middletown, CA

WELL LOCATION MAP

19955 Grange Road

Middletown, CA

TABLE 1
WELL PERFORMANCE TEST DATA
19955 Grange Road
July 6, 2021

Time	Gallons Per Minute	Depth to Water In Feet Below Top of Casing
5:55	Static	17.00
6:10	250.00	53.00
6:25	369.00	55.00
6:40	350.00	54.50
6:55	355.00	54.50
7:10	355.00	54.00
7:40	355.00	54.00
8:10	355.00	54.00
8:40	355.00	54.00
9:10	355.00	54.00
9:40	355.00	54.00
10:40	355.00	54.00
11:40	355.00	54.00
12:40	355.00	53.50
12:50	RECHARGE	34.50
13:20	RECHARGE	27.00

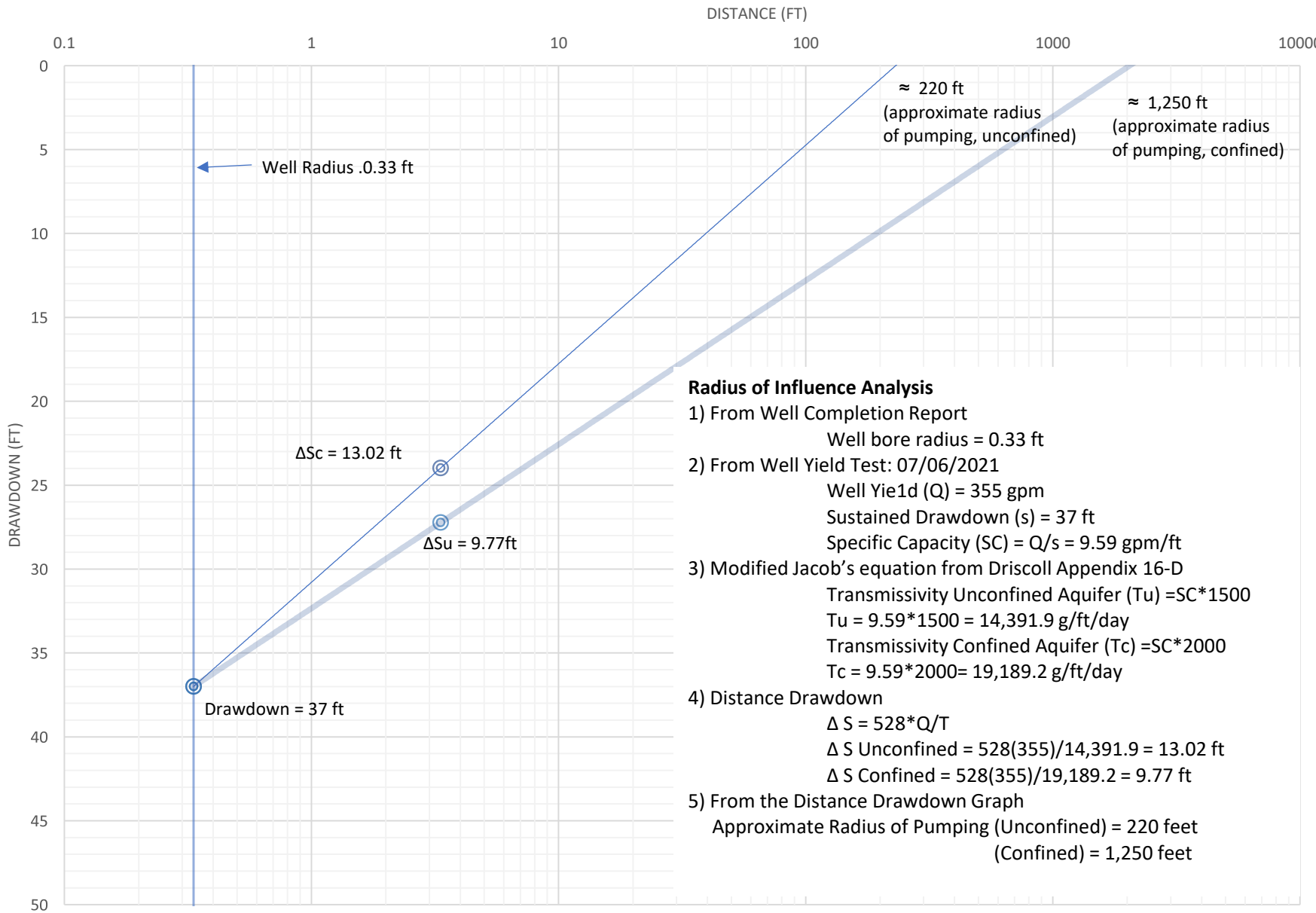
NOTES:
Discharge measured by timing flow into a volume verified tank.

Recharge Rate = (((54.5-27.0) ÷ (54.5-17.0)) x 100) = 73.33%

APPENDIX F
RADIUS OF PUMPING INFLUENCE

Radius of Pumping Influence

19955 Grange Road, Middletown, CA
APN 014-290-08



Radius of Influence Analysis

1) From Well Completion Report
   Well bore radius = 0.33 ft
2) From Well Yield Test: 07/06/2021
   Well Yie1d (Q) = 355 gpm
   Sustained Drawdown (s) = 37 ft
   Specific Capacity (SC) = Q/s = 9.59 gpm/ft
3) Modified Jacob's equation from Driscoll Appendix 16-D
   Transmissivity Unconfined Aquifer (Tu) =SC*1500
   Tu = 9.59*1500 = 14,391.9 g/ft/day
   Transmissivity Confined Aquifer (Tc) =SC*2000
   Tc = 9.59*2000= 19,189.2 g/ft/day
4) Distance Drawdown
   Δ S = 528*Q/T
   Δ S Unconfined = 528(355)/14,391.9 = 13.02 ft
   Δ S Confined = 528(355)/19,189.2 = 9.77 ft
5) From the Distance Drawdown Graph
   Approximate Radius of Pumping (Unconfined) = 220 feet
   (Confined) = 1,250 feet