HYDROGEOLOGIC ASSESSMENT REPORT

23119 & 23131 Jerusalem Grade Road
Middletown, CA
APN's: 013-015-36, 013-015-38, 013-015-39, 013-015-40, 013-015-43, 013-015-57

PREPARED FOR:
East Side Farms
23131 Jerusalem Grade Road
Middletown, CA

June 6, 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. 5309.01

HURVITZ ENVIRONMENTAL
GEOLOGIC & ENVIRONMENTAL CONSULTING

June 6, 2025

East Side Farms Inc.
23131 Jerusalem Grade Road
Middletown, CA

RE: Hydrogeologic Assessment Report
23119&23131 Jerusalem Grade Road, Middletown, Ca
APN: 013-015-36, 013-015-38, 013-015-39, 013-015-40, 013-015-43, 015-013-57
HES Project No. 5309.01

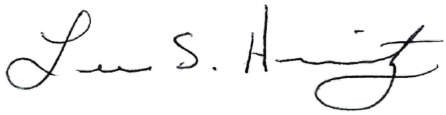
East Side Farms:

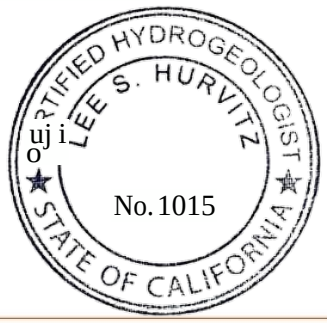
Hurvitz Environmental Services, Inc. (HES) is pleased to submit this Hydrogeologic Assessment Report for the subject properties. HES prepared this Assessment to comply with the Lake County Cannabis Cultivation Permit requirements. The purpose of this Assessment was to evaluate the existing and proposed water usage at the site, and to determine if there is sufficient aquifer supply and storage, to sustainably meet the demands of the proposed site operations, and to evaluate the potential effects of the groundwater withdrawal on neighboring wells, and on nearby streamflow.

Based on the assumptions and estimates presented in this report, the quantity of groundwater to be used for the Project and within the defined Cumulative Impact Area, compared to the quantity of available groundwater, indicates that pumping for the Project is unlikely to result in significant declines in groundwater resources over time. Based on the findings of this report, pumping and groundwater extraction at Site Well A, and Site Well B, will not significantly impact neighboring wells or stream flow conditions in Soda Creek. In addition, based on the relative distance to the coastal areas, the depth of the Site Wells, and the proposed water usage rates, salt water intrusion is not considered a concern to this Assessment.

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





LeeS. Hurvitz, PG# 7573 CHG #1015
Certified Hydrogeologist

105 MORRIS STREET # 188 SEBASTOPOL, CA 95472 PH: 707 .824 .1690 FX:707.824.2675
HURVITZ.ENVIRONMENTAL@GMAIL.COM CA PG# 7573

TABLE OF CONTENTS

FIGURES

APPENDICES

TABLES

1.0 INTRODUCTION AND SCOPE OF SERVICES

We understand that East Side Farms, Inc. (the Applicant) is seeking a Major Use Permit from the County of Lake for a proposed commercial cannabis cultivation operation (the Project) at 23119 & 23131 Jerusalem Grade near Middletown, CA (the Site). The Site is further identified as Assessor's Parcel Numbers (APN's) 013-015-36, 38, 39, 40, 43 & 57, **(PLATE 1 - Site Location Map).** The proposed onsite cultivation will rely on groundwater resources from two (2) of the Sites wells to meet the Projects irrigation demands.

Therefore, on behalf of the Applicants, Hurvitz Environmental Services (HES) conducted a Hydrogeologic Assessment of the properties in accordance with Lake County guidelines for groundwater analysis and hydrogeologic assessment reports.

Therefore, this groundwater report includes the following elements:

- Delineation of a Cumulative Impact Area.
- Estimates of existing and potential water uses within the Cumulative Impact Area based on established usage rates.
- Characterization of local hydrogeologic conditions within the Site watershed and sub-basin.
- Compilation of Well Completion Reports (drillers' logs) from the area.
- Evaluation of well yield test data collected from the proposed project irrigation wells.
- Estimates of annual groundwater storage and recharge relative to existing and proposed groundwater uses.
- Assess potential for the project to create salt water intrusion.
- Assess potential for well interference between the project well and neighboring wells and between the project well and nearby creeks.

2.0 SITE DESCRIPTION

The Site is located approximately 3.5 miles east of Hidden Valley Lake and 7.5 miles northeast of Middletown California **(PLATE 1 - Site Location Map).** The Site is identified as 23131 and 23119 Jerusalem Grade Road and is composed of six parcels (Lake County APNs 013-015-36, 38, 39, 40, 43 & 57), which total approximately 35-acres. The Site has been improved with a wooden barn, a metal building, three residences, four groundwater wells, five 2,500-gallon water storage tanks, and a 30,000-gallon metal fire water storage tank.

The Site is located within the Hydrologic Unit Code (HUC) 12-180201620304 (Soda Creek Sub-Watershed). The Site is not located within any of the groundwater basins/management plan areas identified in the 2006 Lake County Groundwater Management Plan[1] and is not identified by the State as being within a Priority Groundwater Basin. Soils of the Site are identified as the Bally-Phipps and Phipps complex by the NRCS Web Soil Survey, and characterized as well-drained gravelly sandy and clay loams.

Cannabis cultivation is proposed on three (3) of the six (6) Site parcels with irrigation and operational water coming from two (2) of the four (4) Site groundwater wells. The approximate locations of the proposed cultivation areas, the existing groundwater wells, and other current and proposed Site features are shown on **PLATE 3 -Site Plan.** Site Photographs are presented in **APPENDIX A.**

2.1 USGS 7.5-Minute Quadrangle Map

HES reviewed the United States Geological Survey (USGS) Jericho Valley 7.5-minute Quadrangle Map, 2018, **(PLATE 4 - USGS Topographic Map).** The approximately 35-acre Site encompasses a southern ridge and a portion of a shallow sloping hill. The maximum elevation onsite is approximately 1,070 feet above mean sea level (MSL) located along the northern portions of the Site, and a low elevation of approximately 970 feet MSL occurs near the southern portion of the Site. There are no mapped or observed water courses on the property however Soda Creek, an intermittent stream, is located approximately 1,000 feet to the west of the Site. Two smaller tributary streams including Gunther Creek are also located approximately 1,000 feet to the north, and south of the Site.

2.2 Geologic Conditions

HES reviewed the Geologic Map of California, 2010, prepared by the California Geologic Survey. According to the Map reviewed, the Site lies within a geologic region characterized by Quaternary aged volcanic rocks (Qv) consisting of volcanic flow rocks and minor pyroclastic deposits. The site is bordered to the north and east by Mesozoic aged ultramafic rocks (Um) consisting of serpentine, minor peridotite, gabbro and diabase. A thrust fault also trends northwest/southeast near the eastern boundaries of the Site, **Plate 5 - Geologic Map.**

2.3 Regional Groundwater

According to USGS[1] maps reviewed; the project site is located within the Soda Creek Sub-watershed (HUC-12 -180201620304) of the Middle Putah Groundwater Basin which is within the jurisdiction of the Central Valley Regional Water Quality Control Board. Soda Creek Watershed consists of 20,811 acres and Soda Creek flows southeast and is a tributary to Putah Creek.

The Middle Putah Groundwater Basin is bordered by Clear Lake to the north, the Clear Lake Volcanics to the east, and the Franciscan Formation borders the Basin to the west and south. The Middle Putah Inventory Unit is in the southeastern portion of Lake County. The Inventory Unit is rural and includes approximately 62,654 acres. The 2001 population of the Middle Putah Inventory Unit was 229. The primary irrigated crop types in this region are pasture and grapes. The total irrigated crop area in 2001 was 1,522 acres, and total dry-farmed crop area was 67 acres. Walnuts are the non-irrigated crops in this region. The Middle Putah Inventory Unit does not contain any water agencies that supply domestic or agricultural water; all domestic and agricultural water users are self-supplied. Groundwater is the primary source of supply for all water users.

Land use changes have occurred through the past several decades with an increase in residential development and more recently commercial cannabis cultivation. Currently, water resources are generally considered to be substantial with more than enough to sustain the current demands in most of the Middle Putah Groundwater Basin. However, with land use changes, historic droughts, and increased development throughout California, there is becoming an increased regulatory framework designed to protect the water resources in California. Even with the evolving regulatory dynamics surrounding groundwater, this area is considered to be very low priority due to the rural setting and the developmental constraints in the area.

[1] https://apps.nationalmap.gov/viewer/

3.0 SITE DEVELOPMENT AND WATER USE

3.1 Cannabis Cultivation - APN: 013-015-40 & 013-015-43

East Side Farms, Inc. is seeking a Major Use Permit from the County of Lake for a proposed commercial cannabis cultivation operation at 23119 & 23131 Jerusalem Grade near Middletown, CA on APN's 013-015-36, 38, 39, 40, 43 & 57 (Project Parcels). The total proposed commercial cannabis cultivation operation would be composed of an A-Type 3, and two A-Type 1C Lake County License Types, with a total combined aggregate cannabis canopy of 50,560 ft^2 (~1.23-acres). Cannabis cultivation will only occur on three (3) of the Project Parcels (APN: 013-015-40, 43, and 57) with the remaining three (3) parcels being used for residential occupancy (APN: 013-015-36, 38, and 39).

The outdoor cannabis canopy area for Project Parcel 013-015-40 will consist of 21,600 ft^2 (-0.50-acre) and would be located as shown on the **Site Plan, Plate 3.** This Project Parcel will also have a 2,100 ft^2 (~0.05-acres) immature plant nursery area. The outdoor cultivation area on APN 013-015-43 currently contains thirty (30), 496 ft^2 canopy areas, for a total of 14,880 ft^2 of canopy (-0.34 acres). All irrigation water for the existing and proposed cultivation on these two Project Parcels will be supplied from the groundwater well located on the Site parcel 013-015-39 (Site Well A). Irrigation water derived from Site Well A will be stored within four (4), 2,500-gallon heavy-duty plastic water storage tanks, and delivered to the existing and proposed cultivation areas via polyvinyl chloride (PVC) piping.

Cannabis irrigation water demand is estimated to be fairly consistent with Permit Sonoma Guidelines of 2 acre-feet/acre/year for outdoor cannabis. Immature plant areas are expected to use 2,750 gallons/month for the four (4) months of proposed operation. Based on this water use rate, we have calculated the Applicants anticipated cannabis irrigation water use on these two Project Parcels using Site Well A.

21,600ft^2 canopy (APN: 013-015-40) + 14,880ft^2 canopy (APN: 013-015-43) =
36,480ft^2 or 0.84 acres = Total Proposed Outdoor Cultivation (APN: 013-015-40/43)

so,

0.84 acres (outdoor cultivation canopy) x 2 acre-feet/year (irrigation rate) =
I.68 acre-feet/yr. = Annual Irrigation for Outdoor Cannabis (APN: 013-015-40/43)

and,

2,750 gallons/month (nursery irrigation rate) x 4 months (irrigation schedule) =
I I,000 gallons/yr. or 0.03 acre-feet/year = Annual Nursery Irrigation Rate

A water distribution subsystem will be designed to deliver well water directly into the storage tanks before being transferred to additional mixing tanks located strategically within the cultivation areas. Cannabis irrigation will be performed through drip irrigation that will come directly from either the large holding tanks or smaller mixing tanks. Access to the water storage tanks would also be made available for emergency use by Lake County Fire, and CalFire for fire management purposes, as necessary.

The Project plans do not involve any water diversions, or imported water so all Project water will be derived from Site Well A. Details on the cultivation projects water usage, including breakdowns of average and peak monthly usage, are presented in **TABLE 1- Total Projected Site Water Usage.**

3.1.1 Residential Water Uses

There are currently no residences on the Project Parcels 013-015-40 & 43. Therefore, residential water use was not factored into the water use assessment for these parcels.

3.1.2 Employee Water Uses

According to the Applicants, the proposed cultivation Project will require the following combined employee count for the entire Project:

- 4 permanent year-round employees
- 4 additional seasonal employees during harvest
- 6 additional seasonal employees during processing

Based on the data provided, we estimate that the entire project will have the equivalent of eight (8) full time employees, for 180 days/year. Using the Napa County Water Availability Guidance Document estimate of 15 gallons of water utilized per day per cultivation worker on site, we calculated the following additional water usage for the employees as follows:

> 8 (employees) x 15 gallons/day (daily employee water usage) x 180 days/year =
> 21,600 gallons /year (0.7 acre-feet/year) = Employee Groundwater Usage

3.1.3 Total Site Water Use

The total annual cannabis related water uses for Site Well A, on Project parcels 013-015-40/43, is tabulated below:

> 1.68 acre-feet/year (outdoor irrigation) + 0.03 acre-feet/yr. (nursery irrigation) +
> 0.07 acre-feet/year (employees) =
> **1.78 acre-feet/year = Total Proposed Cannabis Water Use (Site Well A)**

Details on the cultivation projects water usage, including breakdowns of average and peak monthly usage, are presented in **TABLE 1 -Total Projected Site Water Usage.**

3.2 Cannabis Cultivation - APN: 013-015-57

The outdoor cannabis canopy area for Project Parcel 013-015-57 will consist of 14,080 ft^2 (~ 0.32-acres) and would be located as shown on the **Site Plan, Plate 3.** All irrigation water for the existing and proposed cultivation on this Project Parcel will be supplied from the groundwater well located on the same parcel (Site Well B). Discussions on well constructions and well yields are presented in Section 4.2 of this Report. Irrigation water from Site Well B will be stored within two (2) 2,500-gallon heavy-duty plastic water storage tanks, and delivered to the existing and proposed cultivation areas via PVC piping. This Project Parcel will also contain a 30,000-gallon metal fire water storage tank that will be filled annually from Site Well B. The approximate locations of the proposed outdoor cultivation areas, Site Well B, and other Site features are shown on **(PLATE 3 -Site Plan).**

Cannabis irrigation water demand is estimated to be consistent with the other Project Parcels at 2 acre-feet/acre/year. No immature plant nursery is proposed on this Site parcel. Based on this water use rate, we have calculated the applicants anticipated cannabis water use below for Site Well B.

0.32 acres (total outdoor canopy) x 2 acre-feet/year (irrigation rate) =
0.64 acre-feet/year = Total Proposed Cannabis Water Use (Site Well B)

As with the other Project Parcels that are proposed for cannabis cultivation, a water distribution subsystem will be designed to deliver well water directly into the storage tanks before being transferred to additional mixing tanks located strategically within the cultivation areas. Cannabis irrigation will be performed through drip irrigation that will come directly from either the large holding tanks or smaller mixing tanks. Access to the 30,000-gallon metal water storage tank would also be made available for emergency use by Lake County Fire, and CalFire for fire management purposes, as necessary.

The Project plans for this parcel do not involve any water diversions, or imported water so all project water will be derived from the existing Site Well B. Details on the cultivation projects water usage, including breakdowns of average and peak monthly usage, are presented in **TABLE 1- Total Projected Site Water Usage.**

3.2.1 Residential Water Uses

There are no residences on this Project Parcel. Therefore, residential water use was not factored into the water use assessment for this Site.

3.2.2 Employee Water Uses

According to the Applicants, the entire proposed Project at 23119 & 23131 Jerusalem Grade Road will require the following employee count:

- 4 permanent year-round employees
- 4 additional seasonal employees during harvest
- 6 additional seasonal employees during processing

The associated water usage for this employee count was already factored into the Project water use total coming from Site Well A. Therefore, employee water use was not factored into this Site parcel or Site Well B.

3.2.3 Total Site Water Use

The annual Project water use estimate for the cannabis irrigation from Site Well B is 0.64 acre-feet/year. In addition, Site Well B will be used annually to fill a 30,000-gallon fire water tank, bringing the total annual Site Well B water use to **0.73 acre-feet/year** (0.64 acre-feet (irrigation) + 0.09 acre-feet (fire water)). Details on the cultivation projects water usage, including breakdowns of average and peak monthly usage, are presented in **TABLE 1 - Total Projected Site Water Usage.**

3.3 Residential Occupancy - APN: 013-015-36, 013-015-38, 013-015-39

The remaining three (3) Project Parcels are APN: 013-015-36, 013-015-38, and 013-015-39, which are currently utilized for residential occupancy only. One residence is located on each of these three (3) parcels, and groundwater is supplied to the parcels by the existing groundwater wells located on each parcel. The groundwater wells for parcels 013-015-36 and 013-015-38 are dedicated residential wells (Well C and Well U), and the domestic water supply for Project Parcel 013-015-39 is from Site Well A, which is also used for cannabis cultivation on two other parcels (013-015-40/43).

Using Permit Sonoma's 8-2-1 Water Supply, Use and Conservation Assessment Guidelines[2] estimate of 0.5 acre-feet (162,925 gallons) of water per year for a primary dwelling with unspecified landscaping, we have estimated that the entire Sites total annual groundwater demand for domestic purposes is 1.5 acre-feet/year (3 residences x 0.5 acre-feet/year/residence). Details on the cultivation projects water usage, including breakdowns of average and peak monthly usage, are presented in **TABLE 1 - Total Projected Site Water Usage.**

TABLE 1 - TOTAL PROJECTED SITE WATER USAGE

Water Use	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Total
	---------Gallons----------													acre-ft
23131 Jerusalem Grade Road - APN 013-015-40 & 013-015-43 - East Side Farms - Site Well A														
Outdoor Cultivation	0	0	0	0	0	97,000	110,000	120,000	120,000	100,430	0	0	547,430	1.68
Immature Plant Nursery	0	0	0	1,400	2,700	4,100	2,800	0	0	0	0	0	11,000	0.03
Employees (entire farm)	0	0	0	1,000	2,000	3,000	3,000	3,000	3,000	3,600	3,000	0	21,600	0.07
Total Parcel Water Use	**0**	**0**	**0**	**2,400**	**4,700**	**104,100**	**115,800**	**123,000**	**123,000**	**104,030**	**3,000**	**0**	**580,030**	**1.78**
23119 Jerusalem Grade Road - APN 013-015-57 - East Side Farms - Site Well B														
Outdoor Cultivation	0	0	0	0	0	38,000	42,000	45,000	45,000	38,544	0	0	208,544	0.64
Fire Water Tank	0	0	30,000	0	0	0	0	0	0	0	0	0	30,000	0.09
Total Parcel Water Use	**0**	**0**	**30,000**	**0**	**0**	**38,000**	**42,000**	**45,000**	**45,000**	**38,544**	**0**	**0**	**238,544**	**0.73**
23131 Jerusalem Grade Road - APN 013-015-36, 013-015-38, & 013-015-39 - Well A, C, U														
013-015-36 WellC	13,500	13,500	13,500	13,500	13,500	13,500	13,800	13,800	13,825	13,500	13,500	13,500	162,925	0.5
013-015-38 WellU	13,500	13,500	13,500	13,500	13,500	13,500	13,800	13,800	13,825	13,500	13,500	13,500	162,925	0.5
013-015-39 Well A	13,500	13,500	13,500	13,500	13,500	13,500	13,800	13,800	13,825	13,500	13,500	13,500	162,925	0.5
Total Residential Site Water Use	**40,500**	**40,500**	**40,500**	**40,500**	**40,500**	**40,500**	**41,400**	**41,400**	**41,475**	**40,500**	**40,500**	**40,500**	**488,775**	**1.5**
TOTAL COMBINED SITE WATER USE	**40,500**	**40,500**	**70,500**	**42,900**	**45,200**	**182,600**	**199,200**	**209,400**	**209,475**	**183,074**	**43,500**	**40,500**	**1,307,349**	**4.01**

The estimated annual irrigation and employee water use for the Project Parcels 013-015-40 & 013-015-43 (Site Well A) is approximately 580,030 gallons/year or 1.78 acre-feet/year. Site Well A also has a residential water demand for Site parcel 013-015-39 which accounts for an additional 0.5 acre-feet/year. This brings the total annual water demand from Site Well A to 2.28 acre-feet/year. Based on this total water use estimate, Site Well A would need to produce an average of approximately **4,856 gallons/day (gpd) or 3.37 gpm** over the entire cultivation season (153 days), with a peak water demand of **5,391 gpd or 3.74 gpm** occurring annually between August and September.

The estimated annual cannabis irrigation water and fire tank water use for the Project Parcel 013-015-57 (Site Well B) is approximately 238,544 gallons/year or 0.73 acre-feet/year. Based on this water use

estimate, Site Well B would need to produce an average of **1,363 gallons/day (gpd) or 0.95 gpm** over the 153-day cultivation season (June-October), with a peak water demand of **1,475 gpd or 1.02 gpm** occurring annually between August and September.

The combined annual water usage rate of Site Well A and Site Well B, which includes all existing and proposed cannabis cultivation, and one (1) residential dwelling is approximately 980,812 gallons/year or 3.01 acre-feet/year. Based on the water use estimates, Site Wells A and B would have an average water usage rate of **6,219 gpd or 4.32 gpm** over the 153-day cultivation season, and a peak (60-day) water usage rate of **6,866 gpd or 4.77 gpm.**

Site Wells C and U will each be used for one residence on separate Project Parcels. Based on the estimate of 0.5 acre-feet/year per residence, each residential well would need to produce 0.31 gpm continuously throughout the year. The addition on these two residences brings the Sites total annual water usage rate up to 4.01 acre-feet/year.

4.0 CUMULATIVE IMPACT AREA

HES reviewed available water well records obtained from the California Department of Water Resources (DWR), and assessed information obtained from peer-reviewed scientific publications as referenced in this report to determine an appropriate Cumulative Impact Area (CIA) that would encompass contiguous properties. HES delineated the CIA based on known geologic, hydrologic and groundwater characteristics in the area. The CIA is a polygon shaped area with a total area of ~200-acres. The area extends westerly to Soda Creek and includes all contiguous properties to the Site

HES identified sixteen (16) parcels in the CIA including the six (6) Project Parcels. The CIA includes the entire Site and all or portions of the other 11 properties **(PLATE 6 - Site Plan with Cumulative Impact Area).** The property sizes in the CIA range from 5-acres to 321-acres. All surface water for the CIA eventually drains into Soda Creek. Fifteen (15) of the CIA properties are located in "RL" (Rural Land District) zoning and one CIA parcel has a zoning of APZ. The RL zoning designation allows for agricultural uses and single-family dwellings. The APZ (Agricultural Preserve Zoning) zoning designation aims to protect land capable of producing agricultural products and encourages agricultural uses of the land. Zoning in this area is unlikely to change so future development is anticipated to be consistent with currently allowed conditions. Descriptions of each parcel within the CIA is presented on **Table 2 - Cumulative Impact Area Properties.**

TABLE 2 - CUMULATIVE IMPACT AREA PROPERTIES

Item No.	APN	Acres	Zoning Code	General Land Use
1	136-061-05	20.6	RL-WW	Pasture
2	036-061-06	19.93	RL-WW	Rural Residential/Pasture
3	013-015-23	321.07	ARZ-WW	Vacant
4	013-015-57	10.06	RL	Cannabis Cultivation
5	013-015-36	4.96	RL	Rural Residential
6	013-015-37	5.02	RL	Vacant
7	013-015-38	5.05	RL	Rural Residential
8	013-015-39	5.05	RL	Rural Residential
9	013-015-40	5.04	RL	Vacant
10	013-015-41	5.04	RL	Rural Residential
11	013-015-42	5.08	RL	Vacant
12	013-015-43	5.07	RL	Cannabis Cultivation
13	013-015-58	20.34	RL	Cannabis Cultivation/Rural Residential
14	013-015-45	5.06	RL	Vacant
15	013-015-49	5.08	RL-WW	Rural Residential
16	013-015-04	81.27	RL	Vacant

4.1 GROUNDWATER USAGE

Based on available information including a Google Earth February 2023 aerial photograph, HES estimated the land use acreage within the 200-acre CIA as follows:

110-acres	Pasture/woodland
20-acres	Riparian areas
15-acres	Residential (~2 acres/residence)
55-acres	Cannabis Cultivation (only ~2.23 acres cultivated on 55-acres of land)

4.1.1 Current Domestic Water Use in the Cumulative Impact Area

Using Permit Sonoma's 8-2-1 Water Supply, Use and Conservation Assessment Guidelines[2] estimate of 0.5 acre-feet (162,925 gallons) of water per year for a primary dwelling with unspecified landscaping, we have estimated the total residential water use in the CIA. Of the sixteen (16) properties identified in the CIA, seven (7) properties are currently developed with residences including the three (3) Site residences.

7 (residences within CIA) x 0.5 acre-feet/year =
3.5 acre-feet/year = Current Domestic Demand from Primary Residences

This estimate for residential demand assumes that all domestic water is supplied from groundwater; other sources of water (rain water, reservoirs or surface water) were not included.

4.1.2 Future Domestic Water Demand in the Cumulative Impact Area

For future water demand we first assume that the nine (9) parcels currently without residences will be developed with single family residences and that all sixteen (16) parcels will be developed with accessory dwelling units (ADU's) at some point in time. We also assume that those ADU's will use 0.25 acre-feet of water per year. With these assumptions, we calculated the additional future potential groundwater demand for domestic purposes;

9 (potential new primary residences) x 0.5 acre-feet/year =
4.5 acre-feet/year = Future Potential Domestic Water Demand from Undeveloped Parcels

and,

16 (potential ADU's) x 0.25 acre-feet/year =
4.0 acre-feet/year = Future Potential Water Domestic Demand from ADU's

so,

4.5 acre-feet/year (future primary residences) + 4.0 acre-feet/year (future ADU's) =
8.5 acre-feet/year = Future Potential Increase in Residential Water Demand

4.1.3 Cannabis Water Use in the Cumulative Impact Area

Commercial cannabis cultivation occurs on four (4) parcels within the CIA. The Project Site accounts for three (3) of the cultivation parcels, with a proposed ~1.23-acres of cannabis. The fourth cultivation parcel (013-015-44) consists of one 20-acre parcel, and contains1-acre of cannabis cultivation canopy. Since the Sites cannabis related water use has been accounted for in Section 3 and **Table 1** of this Assessment, we are only adding 1-acre of cannabis water use to the existing CIA water use. Based on

the 2.0-acre-feet/acre /year estimate of water use for cannabis, we have estimated the total cannabis water use in the CIA not associated with the Site is **2.0 acre-feet/year.**

4.1.4 Current Pasture Water Use in the Cumulative Impact Area

There did not appear to be significant cattle currently within the CIA however the potential for ranch/or livestock farming within the CIA is a water use that we considered in this Assessment. We understand that water usage rates for livestock grazing and rearing can be estimated at 0.05 acre-feet of water/acre/year[2]. Therefore, based on the estimate of 110-acres of existing/potential grazing land within the CIA, we calculated the potential groundwater demand for pasture land as follows:

110 (acres of current pasture land) x 0.05 (acre-feet/acre/year) =
5.5 acre-feet/year = Current / Potential Pasture / Livestock Water Use in CIA

4.1.5 Total Water Demand in Cumulative Impact Area

The total existing and potential groundwater demand within the entire CIA, including the proposed Project is summarized below on **TABLE 3 - Estimated Water Usage in Cumulative Impact Area.**

TABLE 3 - ESTIMATED WATTER USAGE IN CUMULATIVE IMPACT AREA

Projected Groundwater Uses	Potential Residential or Agricultural Use	Projected Annual Water Use per Parcel (acre-feet)	Projected Cumulative Annual Water Use (acre-feet)
7 Primary Residences **(Existing Domestic)**	Residential Water Use	0.50 acre-feet / residence	3.5 acre-feet/year
Other Existing Use **(Existing Cannabis Farms)**	1-acre outdoor cultivation	2.0 acre-feet/year	2.0 acre-feet
Total Existing Water Use			**5.5 acre-feet/year**
9 Vacant homesteads built out with one residence **(Future Potential Domestic)**	Residential Water Use	0.50 acre-feet / residence	4.5 acre-feet
16 Secondary Residences **(Future Potential Domestic)**	Residential Water Use	0.25 acre-feet / residence	4.0 acre-feet
Cannabis Cultivation at Project Site **(Future Potential Agriculture)**	Proposed Cannabis Cultivation **(inch workers See Section 3)**	1.78 ac-ft/yr + 0.73 ac-ft/yr	2.51 acre-feet
Future Potential Increase in Water Use			**11.01 acre-feet/year**
Total Existing and Potential Water Usage Estimate	**Without Site Cannabis**		**14.0 acre-feet/year**
	With Cannabis		**16.51acre-feet/year**

The total existing groundwater use in the CIA is estimated at 5.5 acre-feet/year or 0.03 acre-feet/acre/year (not including cannabis onsite), and the future potential groundwater demand, with the proposed cannabis Project, is 16.51 acre-feet/year or 0.08 acre-feet/acre/year. The proposed groundwater usage for cannabis cultivation at the Site is 2.51 acre-feet/year, which represents a 46% increase in the current groundwater demand, and a 18% increase in future potential groundwater demand.

4.2 Domestic Well Information

HES identified domestic well log information for seven (7) wells within or proximate to the CIA **(TABLE 4 - Well Inventory).** Available well logs are included in **APPENDIX B.** The average well depth within the CIA is 223 feet. The average screened interval thickness is 54.6 feet and the average specific capacity is 1.34 gpm/foot drawdown.

TABLE 4 - WELL INVENTORY

APN/Well Number	Well Installed (year)	Distance to Site Well (feet)	Surface Elevation (feet, MSL)	Total Well Depth (feet)	Screen Interval/ (feet)	Total Screen Thickness (Feet)	Well Yield (gpm)	Draw-down (feet)	Specific Capacity (gpm/ft)	Well Map #
013-015-39/ 824940	2004	NA	1,080	280	220-280	60	80	120	0.67	Site Well A
013-015-35/ 824952	2003	NA	1,070	220	180-220	40	60	60	1	Site WellB
013-015-44/ 0950516	2011	230 to Well A	1,070	280	120-180 260-280	80	100	164	0.61	1
013-015-38/ 210866	1987	500 to WellB	1,080	259	199-259	60	30	9	3.33	Site WellU
013-015-45/ 405477	1994	550 to Well A	1,050	185	165-185	20	100	105	0.95	2
013-015-37/ 03892	1991	760 to WellB	1,075	196	134-196	62	15	43	0.35	3
013-015-47/ e0315268	2016	1,000 to Well A	970	143	83-143	60	40	56	2.5	4
Average Well Total Depth = 223 feet				Average Screen Thickness = 54.6 Feet				Average SC = 1.34 gpm/ft Average Yield = 60.7 gpm		

4.3 Well Yield Tests

4.3.1 APN 013-015-39 - Site Well A

Site Well A was installed in 2004 by Larry Herman Drilling on Project Parcel 016-3-015-39. The well was installed with 4.5-inch diameter casing to total depth of 280 feet and a screen thickness of 60 feet. On June 16, 2023, JAK Drilling and Pump (JAK) conducted a 3-hour well yield test on Site Well A. The yield test began at 6:30am and ended at 9:25am the same day (175 minutes). The test was run with a solar pump and a hard-wired generator.

The initial static water level was measured at 131 feet below top of casing (TOC). The sustained yield was 22 gpm and the total drawdown was 15 ft. A total of 3,980-gallons were pumped from the well during the test. The specific capacity was calculated to be 1.47 gpm/ft of drawdown (i.e., 22 gpm/15 ft). Well recovery data was collected following the 3-hours of pumping and showed that after 10-minutes the static water level had recovered to 133 feet (87%) and within 40 minutes the static water level had recovered to 131.6 feet (96%). The well yield test data and calculations are attached in **APPENDIX C.**

Based on the sustainable flow rate of 22 gpm and the maximum daily project demand of 5,490 gallons/day, it would require approximately 4-hours and 10-minutes (250 minutes) of pumping to meet peak demand. The average cultivation season water demand of 5,278 gallons/day would require approximately 4-hours (240 minutes) of pumping each day. Based on the results of the well yield test and recovery observations it appears that the well can produce sufficient water for the proposed project and is unlikely to result in aquifer overdraft conditions.

4.3.2 APN: 013-015-57 - Site Well B

Site Well B was installed in 2003 by Larry Herman Drilling on Project Parcel 013-015-57. The well was installed with 4.5-inch diameter casing to total depth of 220 feet and a screen thickness of 40 feet. On June 16, 2023, JAK conducted an approximately 4-hour well yield test on Site Well B. The yield test began at 6:15am and ended at 10:10am the same day (235 minutes). The test was run with a Grundfos solar pump and hard-wired generator.

The initial static water level was measured at 143 feet below TOC. The sustained yield was 11 gpm and the total drawdown was 3 ft. A total of 2,600-gallons was pumped from the well. The specific capacity was calculated to be 3.67 gpm/ft of drawdown (i.e., 11 gpm/3ft). Well recovery data was collected following the 4-hours of pumping and showed that after ten (10) minutes the water levels had recovered to 145 feet (33%) and within 40 minutes the water levels had recovered to 144 feet (67%). The well yield test data and calculations are attached in **APPENDIX C.**

Based on the sustainable flow rate of 11 gpm and the maximum daily project demand of 1,475 gpd, it would only require approximately 2-hours and 14-minutes (134 minutes) of pumping each day to keep up with peak water demand. The average cultivation season water demand of 1,363 gpd would require approximately 2-hours and 4-minutes (124 minutes) of pumping each day. Therefore, based on the results of the well yield test and recovery observations it is appears that the well can produce sufficient water for the proposed project and is unlikely to result in aquifer overdraft conditions.

4.3.3 APN: 013-015-38 - Site Well U

Site Well U was installed in 1987 by Weeks Drilling and Pump Company on Project Parcel 013-015-38. The well was installed with 4.5-inch diameter casing to total depth of 259 feet and a screen thickness of 60 feet. Well yield testing performed by the drillers, at the time of well installation, indicated that the well was capable of producing 30gpm. No subsequent yield testing was performed on this well. However, this well is a dedicated residential well with an estimated average annual demand of 0.31 gpm, therefore it is considered likely that the well can meet the expected demand, and its impact on near-site wells is considered de minimis.

4.3.4 APN: 013-015-38 - Site Well C

No well completion report was identified for Site Well C. Since this well is a dedicated residential well with an estimated average annual demand of 0.31 gpm, it is considered likely that the well can meet the expected demand, and its impact on near-site wells is considered de minimis.

5.0 POTENTIAL IMPACTS TO NEIGHBORING WELLS AND STREAMS

5.1 Well Interference

To evaluate potential well pumping impacts to wells on other properties, the potential lateral extent of pumping from the planned Project wells was estimated. Using general relationships discussed in Driscoll (1986)[2], we estimated the lateral pumping influence from both Site Well A, and Site Well B using information from the 2023 well yield tests. An approximate relationship between specific capacity (SC) and aquifer transmissivity (T) was used to obtain aquifer characteristics and estimate a potential radius of pumping influence. Transmissivity was estimated with a Jacob's modified equation[3] that uses the relationship of SC (yield /drawdown) and the coefficient of 1,500 for an unconfmed aquifer. To develop the slope of the drawdown curve from the pumping well, the value of As (drawdown over one log graph cycle) was calculated for a distance-drawdown relationship, where $T = 528Q/As$ [4]. The zone of pumping influence was calculated to extend approximately 400 feet from both Site Well A and Site Well B, **APPENDIX D - Radius of Pumping Influence.** There appears to be one (1) off-site domestic well located within a 400-foot radius from Site Well A, at APN: 013-015-44. However, the estimated drawdown in the offsite well from the proposed pumping is only expected to be 1-foot or less.

To calculate the predicted drawdown in the near-site wells over a 153-day time period (cultivation season) we used the Theis solution[5]. To use this method, we relied on an estimated storativity value of 0.02 for the volcanic aquifer, the aquifer T value calculated from the closest Site Well yield test, the distances to the near-site wells (feet), time of pumping (days), and the estimated pumping rate (gpm). For the pumping rates we used the average cultivation season water use rates of 3.37 gpm for Site Well A, and 0.95 gpm for Site Well B. The results of the calculations for each of the observation wells are tabulated below on **Table 5 - Predicted Drawdown Over Time.**

TABLE 5 - PREDICTED DRAWDOWN OVER TIME

Well ID	Distance from Project Well	Storativity	Transmissivity	Pumping Rate	Drawdown at 153-days
	feet	—	gal/ft/day	gpm	feet
0950516	280	0.02	2200	3.37	0.73
210866	500	0.02	5500	0.95	0.08
405477	550	0.02	2200	3.37	0.50
03892	760	0.02	5500	0.95	0.06
e0315268	1000	0.02	2200	3.37	0.30

Based on the average depth of the near-site wells, and the average depth to the static water levels, a 0.06-0.73-foot decline in nearby water levels over a 153-day period is not considered to be

[2] Groundwater and Wells, Second Edition, Fletcher G. Discoll, 1986, published by Johnson Division, St. Paul Minnesota, 1089p.
[3] Appendix 16-D, Groundwater and Wells, Second Edition, Fletcher G. Discoll, 1986, published by Johnson Division, St. Paul Minnesota, 1089p
[4] Equation 9.11 Groundwater and Wells, Second Edition, Fletcher G. Discoil, 1986, published by Johnson Division, St. Paul Minnesota, 1089p
[5] https://www.ose.nm.gov/Hydrology/Theis/index.html

significant, and based on current property uses in the CIA, it is not expected to have adverse effects on nearby groundwater users.

5.2 Stream Depletion

Soda Creek is located approximately 1,100-feet west of Site Well A, and approximately 930-feet west of Site Well B. Considering that the elevation of Soda Creek proximate to the Site is 25-65 feet above both Site Well screen intervals, it appears that the Site Wells are accessing water from aquifers located at elevations lower than the stream bed, and therefore do not appear to have direct connectivity.

While direct connectivity is important in potential stream depletion models it is not required for a groundwater withdraw to have an effect on nearby stream flow. Most scenarios involving groundwater extraction will consequently increase the rate of groundwater recharge to the aquifer which therefore decreases the volume of outflow from the aquifer. Some perennial streams and creeks rely on this aquifer outflow to maintain adequate surface flow for aquatic life during the dry season. However, since the existing Site Wells are accessing groundwater from an estimated depth of 180-260 feet bg, and below the Soda Creek streambed, it is considered unlikely that groundwater outflow from the Site aquifer is contributing to stream flow proximate to the Site. It is more likely that the stream flow is contributing to aquifer recharge (losing stream) during the winter and spring. However, it is also possible that the outflow from this aquifer could be contributing to stream flow at lower elevations within the watershed.

To further evaluate the quantitative effect that this potential decrease in aquifer outflow will have on streamflow conditions in Soda Creek we have entered site specific data into the USGS Stream Depletion Model called STRMDEPL08. The modeling program was first released as a one-dimensional model using two analytical solutions to calculate streamflow depletion by a nearby pumping well, but was extended to account for two additional analytical solutions in 2008. The original program incorporated solutions for a stream that fully penetrates the aquifer with and without streambed resistance to groundwater flow. The modified program includes solutions for a partially penetrating stream with streambed resistance and for a stream in an aquitard subjected to pumping from an underlying leaky aquifer.

To evaluate the site conditions, we ran the STRMDEPL08 Model for a *Partially penetrating stream with streambed resistance (Hunt, 1999}* using the following data.

Site Well A (June 1- October 31)

- 1,100 feet between project well and Soda Creek
- Transmissivity = 294 ft^2/day (based on 2023 yield test data)
- Aquifer Storage Coefficient = 0.02 (estimated)
- Pumping Rate = 3.37 gpm (153-day average usage)
- Days of Pumping = 153-days (June-October)
- Streambed Conductance = 4.9 ft/day (Calculated from Transmissivity / Well Screen Thickness)

Site Well B (June 1 - October 31)

- 930 feet between project well and Soda Creek
- Transmissivity = 735 ft^2/day (based on yield data from 2023 yield test)
- Aquifer Storage Coefficient = 0.02 (estimated)
- Pumping Rate = 0.95 gpm (153-day average usage)
- Days of Pumping = 153-days (June - October)
- Streambed Conductance = 18.4 ft/day (Calculated from Transmissivity / Well Screen Thickness)

Based on the input data shown above, the model provided daily values for theoretical stream depletion over the entire 153-days. The results indicate that stream depletion after 153 days of pumping would equal 0.0042 cubic feet/sec or 1.88 gpm from pumping at Site Well A, and 0.0016 cubic feet/sec. or 0.72 gpm from pumping at Site Well B. This would equate to a combined stream depletion value of 0.0058 cubic feet/sec or 2.60 gpm.

No stream flow gauges were available for review on Soda Creek proximate to the Site, however the 153-day depletion results generally indicate an insignificant reduction in streamflow, and considering that Soda Creek is dry in late summer/fall each year, stream flow depletion in not considered a significant concern to this assessment. The stream depletion results are presented in **APPENDIX E - Streamflow Depletion Results.**

6.0 WATER BALANCE INFORMATION

USGS and DWR studies that included the Lake County area provided water balance information that was used to assess groundwater sustainability within the CIA.

6.1 GROUNDWATER STORAGE

HES used well log information from the surrounding wells to estimate the aquifer thickness beneath the CIA. The average screened interval for the seven (7) wells with available data was 54.6 feet. Based on the aquifer consisting primarily of Volcanic deposits, we estimated the specific yield of the aquifer is 10 percent (0.10)[6]. Therefore, the aquifer storage can be conservatively estimated using the following equation

> 54.6 feet (aquifer thickness) x 0.10 (specific yield) x 200 acres (cumulative impact area) =
> Aquifer Storage = 1,092 acre-feet

6.2 PRECIPITATION

Precipitation, primarily as rainfall and stream flow are the major sources of inflow to the aquifers in the CIA. We estimate that the seasonal precipitation for the Site is 38-inches/year (3.17 feet/year) based on data from Middletown[7] or 634 acre-feet over the entire CIA.

[6] Hydrologic and Geochemical Characterization of the Santa Rosa Plain Watershed, Sonoma County, California, U.S. Geological Survey, Scientific Investigations Report 2013-5118.
[7] http://rainliarvestcalculator.com/Rainfall/CA/Middletown/95461 based on 5-year average (2013-2017)

6.3 GROUNDWATER RECHARGE

Recharge to aquifers in the Subbasin primarily occurs through streambed recharge along portions of Soda Creek and its tributaries, as well as through direct infiltration of precipitation and along the margins of the valley areas (mountain front recharge).

To estimate the groundwater recharge within the CIA, HES first assumed that the recharge to the aquifer is primarily through rainfall and that most of the rainfall accumulated within the 200-acre CIA drains to the creeks proximate to the Site. Therefore, the annual recharge to the CIA can be initially estimated using the following data and equation.

> 200 acres (CIA area) x 3.17 feet (annual precipitation) =
> 634 acre-feet acre-feet/year = 206,589,534 gallons/year.

However, this estimate does not account for surface run-off, stream underflow, and evapo-transpiration that was discussed above and that occurs in all watersheds. To further evaluate the percentage of rainfall that contributes to recharge of the aquifer HES reviewed the Santa Rosa Plain Watershed Groundwater Management Plan[8] which discusses hydrogeology in the Region as well as the USGS Scientific Investigation Report 2006-51157. Estimates for recharge found in these documents are considered to be generally reliable for this Site evaluation. Average recharge to the ground-water system for the entire Santa Rosa Plain, including mountainous zones, is derived from an estimated average of 531,000 acre-feet of precipitation falling within the entire watershed. After accounting for runoff (188,400 acre-feet/year) and evapotranspiration (262,000 acre-feet/year), the amount of water available for recharging the Santa Rosa Plain Watershed equates to 80,600 acre-feet/year, or approximately 15.2% of the annual rainfall. However significant variations to this value can occur based on topography, soil infiltration rates, geology etc., and according to these USGS and Sonoma County Water Agency Reports, the long-term average precipitation that recharges groundwater in these regions can be as low as 1.67%. Therefore, based on topography, geology, soil types, and regional studies, we estimate that the long-term average precipitation that recharges groundwater within our defined CIA is slightly below the regional average for the Santa Rosa Plain and is estimated at 10%. With this data and the precipitation data presented above, we can re-calculate the groundwater recharge within the CIA using the following equation.

> 200-acres (CIA area) x 3.17 feet (annual precipitation) x 0.1 (long term average recharge) =
> **63.4 acre-feet = Estimated Annual Aquifer Recharge**

[8] Santa Rosa Plain Groundwater Management Plan, Sonoma County Water Agency, 2014

Potential drought conditions in California could alter the recharge potential presented in this assessment. To account for drought conditions, we have assumed that the rainfall would only be 60% of average which would correlate to only 60% of average recharge to aquifers in the CIA. Using this assumption, we can re-calculate the aquifer recharge potential during drought conditions using the following equation.

> 200-acres (CIA area) x 3.17 feet (annual precipitation) x 0.10 (long term average recharge) x 0.6 (drought multiplier) =
> **38.04 acre-feet = Estimated Annual Aquifer Recharge during Drought**

The results of this water balance assessment indicate that even during drought conditions the available water within the CIA aquifer is approximately 38 acre-feet/year. The calculated future groundwater demand for the CIA was estimated to be 16.51 acre-feet/year. Therefore, there appears to be sufficient groundwater resources in the vicinity to sustainably operate the cannabis farm as proposed, while still allowing for additional community development that is consistent with allowable zoning in the area.

7.0 WATER QUALITY

A water quality assessment of the Project wells was not performed as part of this Hydrogeologic Assessment Report. However, a search for contaminated groundwater sites within 1,000 feet of the Site was performed on the States Geotracker Database. No contaminated groundwater sites were identified within 1,000- feet of the site. Water quality assessment testing for bacteria, nitrates, arsenic, boron, and other common contaminants may be necessary prior to beginning site operations to ensure potable water is available to employees.

8.0 CONCLUSIONS

The project site is located in the Soda Creek Sub-Watershed and within a volcanic alluvial aquifer. The aquifer is considered generally unconfined, and recharge to the aquifer likely occurs primarily through direct precipitation, and from nearby stream flow. The estimated groundwater usage for the entire ~1,23-acre cultivation Project (outdoor + nursery + employees) is approximately 817,887 gallons/year or 2.51 acre-feet/year. The Project water will be derived from two (2) groundwater wells (Site Well A & Site Well B) that are located onsite. An additional 1.5 acre-feet/year of groundwater/year will be utilized at the Site for residential purposes. Based on regional aquifer conditions, and the well yield test data, it appears that the proposed irrigation wells can sustainably produce the water necessary for the Project without creating aquifer overdraft conditions or significant well interference.

In summary:

1,092 acre-feet	Annual Aquifer storage in Cumulative Impact Area
63.4 acre-feet	Annual Recharge to Aquifer
38.04 acre-feet	Annual Recharge to Aquifer During Severe Drought
5.5 acre-feet	Annual Current Water Use in Cumulative Impact Area
2.51 acre-feet	Annual Water Use for Proposed Cannabis Project (acre-feet)
2.28 acre-feet	Annual Water Use from Site Well A (cannabis and residential)
0.73 acre-feet	Annual Water Use from Site Well B (cannabis only)
1.0 acre-foot	Annual Residential Water Use (Site Wells C & U)
4.01 acre-feet	Total Annual Water Use Onsite
4.77 gpm	Peak Anticipated Cannabis Related Water Demand
22 gpm	Site Well A Sustained Yield
11 gpm	Site Well B Sustained Yield

Based on the assumptions and estimates presented in this report, the quantity of groundwater to be used for the Project and within the Cumulative Impact Area, compared to the quantity of available groundwater, indicates that pumping for the Project is unlikely to result in significant declines in groundwater resources over time. Based on the findings of this report, pumping and groundwater extraction at Site Well A and Site Well B will not significantly impact neighboring wells or stream flow conditions in Soda Creek. In addition, based on the relative distance to the coastal areas, the depth of the site well and the proposed water usage rates, salt water intrusion is not considered to be a concern to this Assessment.

9.0 LIMITATIONS

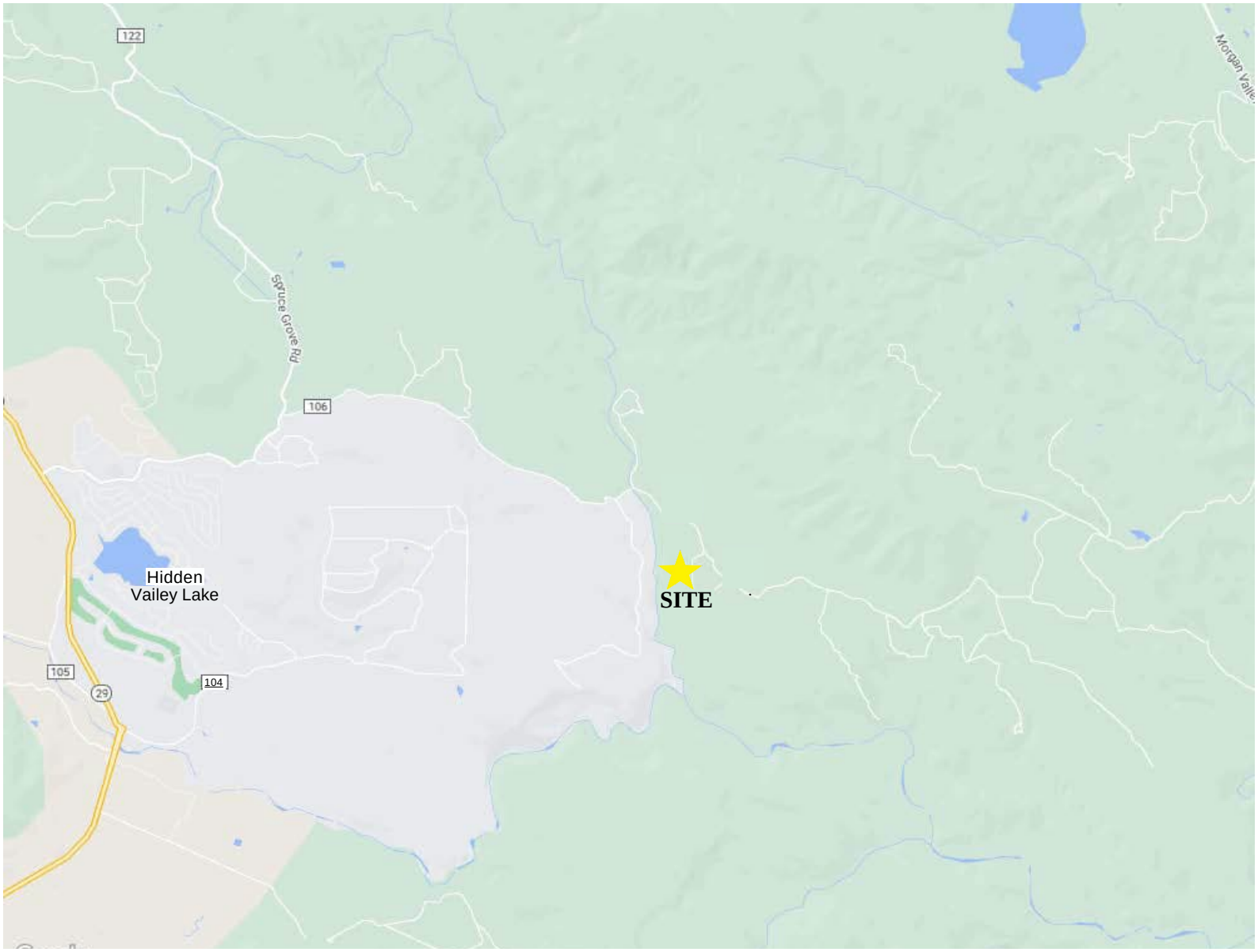
HES is not responsible for the independent conclusions, opinions or recommendations made by others based on the records review, site inspection, field exploration, laboratory test data and interpretations presented in this report.

Groundwater systems of Sonoma 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 East Side Farms Inc., 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.



HURVITZ ENVIRONMENTAL
105 MORRIS ST, STE IBS
SEBASTOPOL, CA 95472
PH: 707.824.1690
EX: 707.824.2675
HURVITZ.ENVIRONMENTAL@GMAIL.COM
CA PG# 7573

Site Location Map

23119 & 23131 Jerusalem Grade Road
Middletown, CA

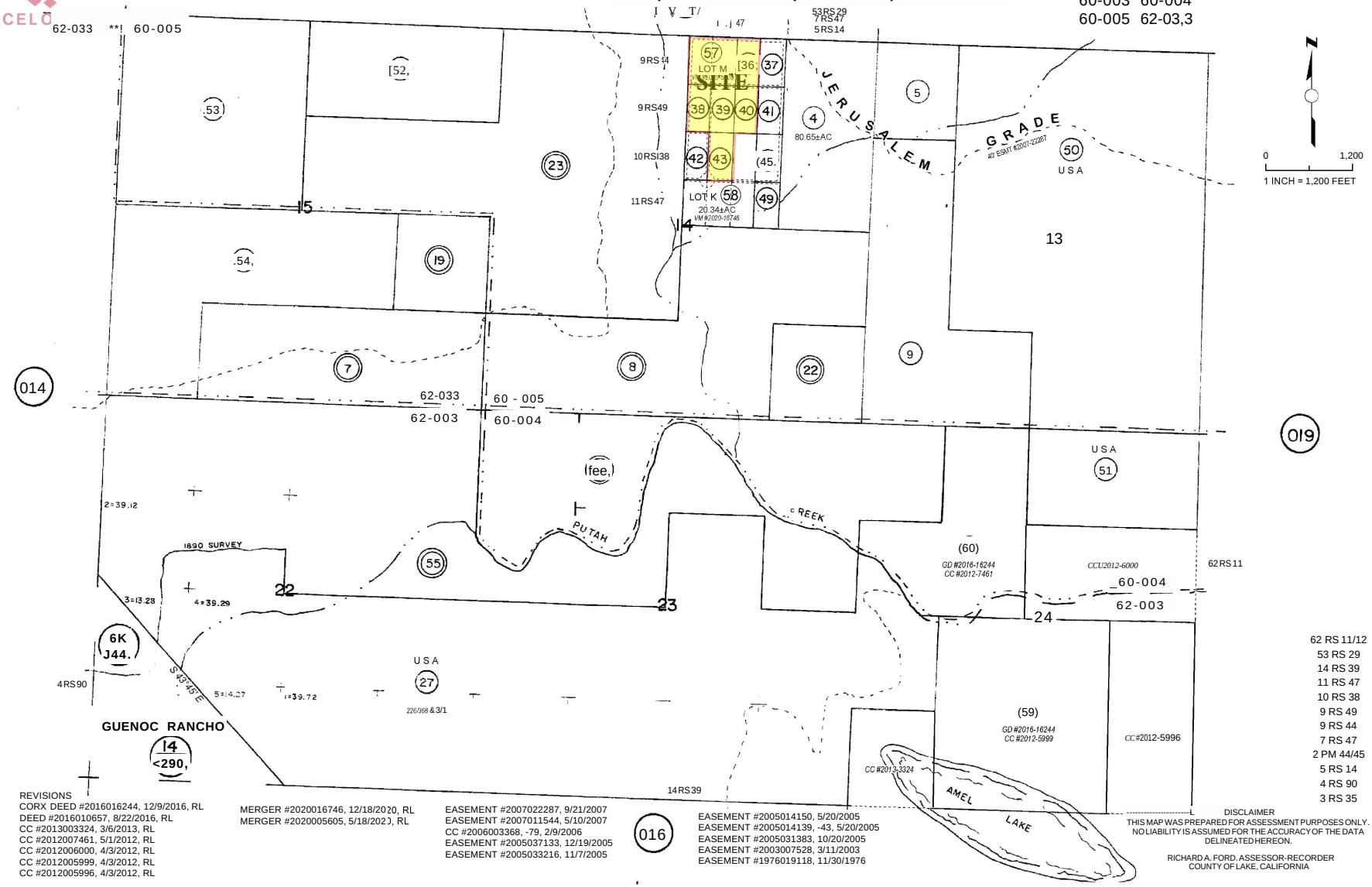
JOB NUMBER: **5309.01**
DATE: **06/04/25**
PLATE: **1**

Provided by:

PARCELQ

SECS. 13 - 15 & 22 - 24,< T11N, R6W, MDBM

TAX RATE AREA 013-015
60-003 60-004
60-005 62-03,3



REVISIONS
CORX DEED #2016016244, 12/9/2016, RL
DEED #2016010657, 8/22/2016, RL
CC #2013003324, 3/6/2013, RL
CC #2012007461, 5/1/2012, RL
CC #2012006000, 4/3/2012, RL
CC #2012005999, 4/3/2012, RL
CC #2012005996, 4/3/2012, RL

MERGER #2020016746, 12/18/2020, RL
MERGER #2020005605, 5/18/2021, RL

EASEMENT #2007022287, 9/21/2007
EASEMENT #2007011544, 5/10/2007
CC #2006003368, -79, 2/9/2006
EASEMENT #2005037133, 12/19/2005
EASEMENT #2005033216, 11/7/2005

EASEMENT #2005014150, 5/20/2005
EASEMENT #2005014139, -43, 5/20/2005
EASEMENT #2005031383, 10/20/2005
EASEMENT #2003007528, 3/11/2003
EASEMENT #1976019118, 11/30/1976

DISCLAIMER
THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA DELINEATED HEREON.

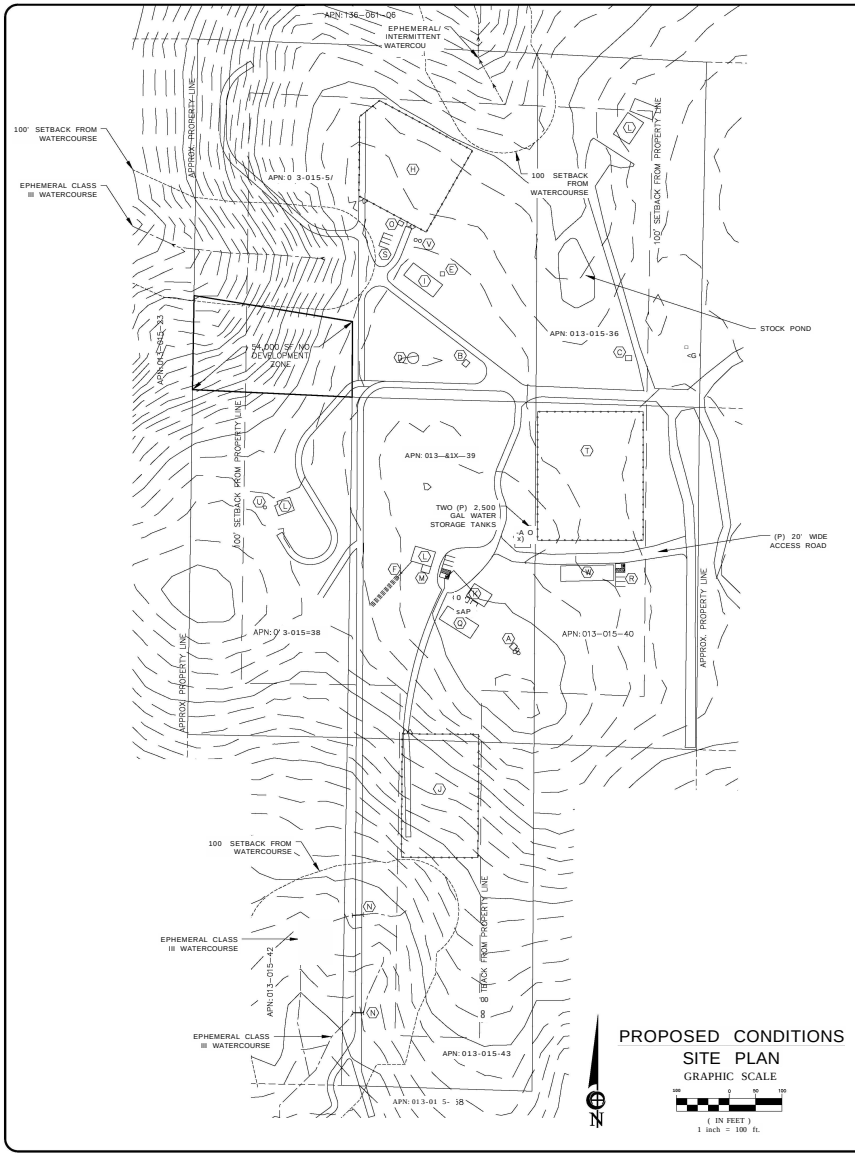
RICHARD A. FORD, ASSESSOR-RECORDER
COUNTY OF LAKE, CALIFORNIA

HURVITZ ENVIRONMENTAL
105 MORRIS ST, STE 188
SEBASTOPOL, CA 95472
PH: 7D7.824.169O
FX: 707.824.2675
HURVITZ.ENVIRONMENTAL@GMAIL.COM
CA PG# 7573

Assessors Parcel Map

23119 & 23131 Jerusalem Grade Road
Middletown, CA

JOB NUMBER: **5309.01**
DATE: **06/04/25**
PLATE: **2**



PROPOSED CONDITIONS SITE PLAN

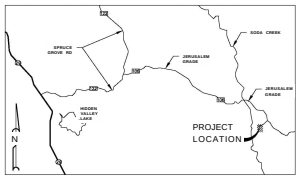
GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

LEGEND:

1530	CONTOUR ELEVATION
	FENCE
	ASPHALT
	GRAVEL
MH	EARTH
	(E) POWER POLE
APN	ASSESSOR'S PARCEL NUMBER
APPROX	APPROXIMATELY
DWY	DRIVEWAY
(E)	EXISTING
(P)	PROPOSED
RD	ROAD
SF	SQUARE FEET

NOTES:
1. CONTOUR INTERVAL IS 5'



VICINITY MAP
NO SCALE

EAST SIDE FARMS
23131 JERUSALEM GRADE
MIDDLETOWN, CA 95461 - LAKE COUNTY
APNSiOI3-015-34, 013-015-35, 013-015-39 & 013-015-43

<A> (E) GROUNDWATER WELL & THREE 2,500 GAL WATER STORAGE TANKS:
LAT: 38.809398'
LONG: —122.488449'

(S) (E) GROUNDWATER WELL & 1O'x12' WELL HOUSE
LAT: 38.810926'
LONG: —122.488773'

<C> (E) GROUNDWATER WELL & 1O'X12' WELL HOUSE
LAT: 38.81094'
LONG: —122.48775'

(E) 30,000 GAL. METAL FIRE WATER STORAGE TANK

(E) 8'x8' PESTICIDES AND AGRICULTURAL CHEMICALS STORAGE AREA

(E) SEPTIC AREA

(E) 1O'x12' SHED

(E) 34,346 SF OUTDOOR CULTIVATION AREA

(E) 3O'X7O' (2,100 SF) METAL AGRICULTURE STORAGE BUILDING /
(P) 30'x70' (2,100 SF) DRYING BUILDING

(J) (E) 34,800 SF OUTDOOR CULTIVATION AREA

(K) (E) 28'x4O' CANNABIS STORAGE BUILDING

(L) (E) RESIDENCE

(M) (E) 14'x16' WOODEN SHED

(N) (E) 12" CMP CULVERT

(O) (E) DESIGNATED REFUSE AREAS

(P) (E) COMPOST AREA

(Q) (P) 30'x70' GREENHOUSE / IMMATURE PLANT AREA

(R) (P) EMPLOYEE PARKING / A.D.A.

(S) (E) EMPLOYEE PARKING

(T) (P) 200' X 250' (50,000 SF) OUTDOOR CULTIVATION AREA

(u) (E) GROUNDWATER WELL & 1O'X12' WELL HOUSE
LAT: 38.81013'
LONG: —122.49016'

<V> (E) TWO 2,500 GAL WATER STORAGE TANKS

<W> (P) 30'x100' (3,000 SF) PROCESSING BUILDING

<X> (E) GROUND-MOUNTED SOLAR ARRAY

Revisions:

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

REGISTERED PROFESSIONAL ENGINEER JASON B. VITE No. 67800 Exp. 6/30/25 CIVIL STATE OF CALIFORNIA

PROPOSED CONDITIONS SITE PLAN

EAST SIDE FARMS
23131 JERUSALEM GRADE
MIDDLETOWN, CA 95461
LAKE COUNTY APNS 013-015-34, 013-015-35, 013-015-39 & 013-015-43

PLOTTED BY:
DATE PLOTTED:
SCALE OF DRAWING:
JOB NUMBER:
CADD FILE:
SHEET:

2

HURVITZ ENVIRONMENTAL
IDS MORRIS ST, STE 1SS
SEBASTOPOL, CA 95472
PH: 707.824.1690
FX: 707.824.2675
HURVITZ.ENVIRDNMENTAL@GMAIL.CDM
CA PG# 7573

Site Plan

23119 & 23131 Jerusalem Grade Road
Middletown, CA

JOB NUMBER: 5309.01

DATE: 06/04/25

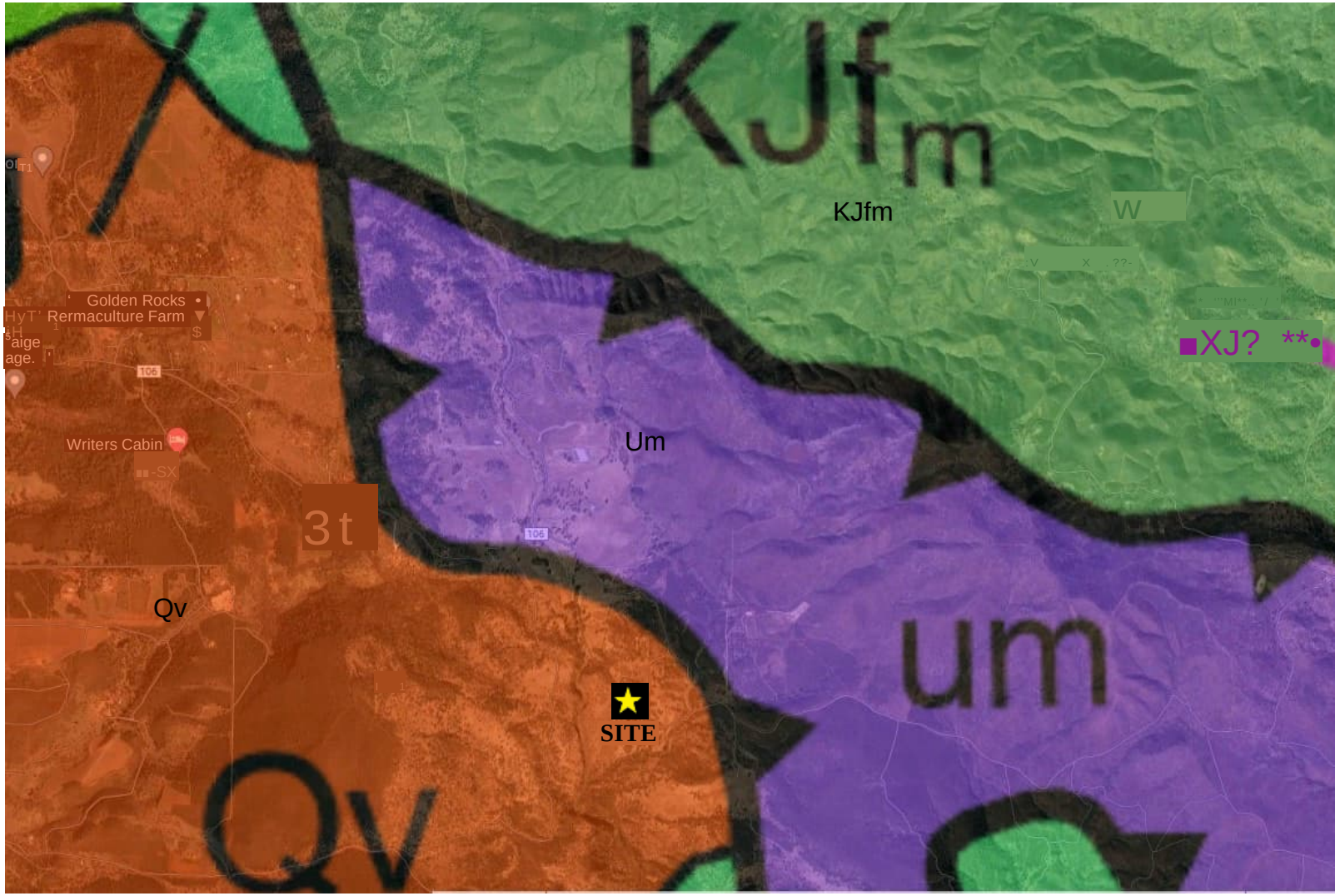
PLATE: 3

HURVITZ ENVIRONMENTAL
105 MORRIS ST, STE IBS
SEBASTOPOL, CA 95472
PH: 707.824.1690
EX: 707.824.2675
HURVITZ.ENVIRONMENTAL@GMAIL.COM
CA PG# 7573

Topographic Map

23119 & 23131 Jerusalem Grade Road
Middletown, CA

JOB NUMBER: 5309.01
DATE: 06/04/25
PLATE: 4



Um - Mesozoic ultra-mafic rocks consisting of serpentine, minor peridotite, gabbro and diabase

KJfm - Cretaceous and Jurassic sandstone with smaller amount of shale, chert, limestone and conglomerate

Qv -Quaternary volcanic flow rocks

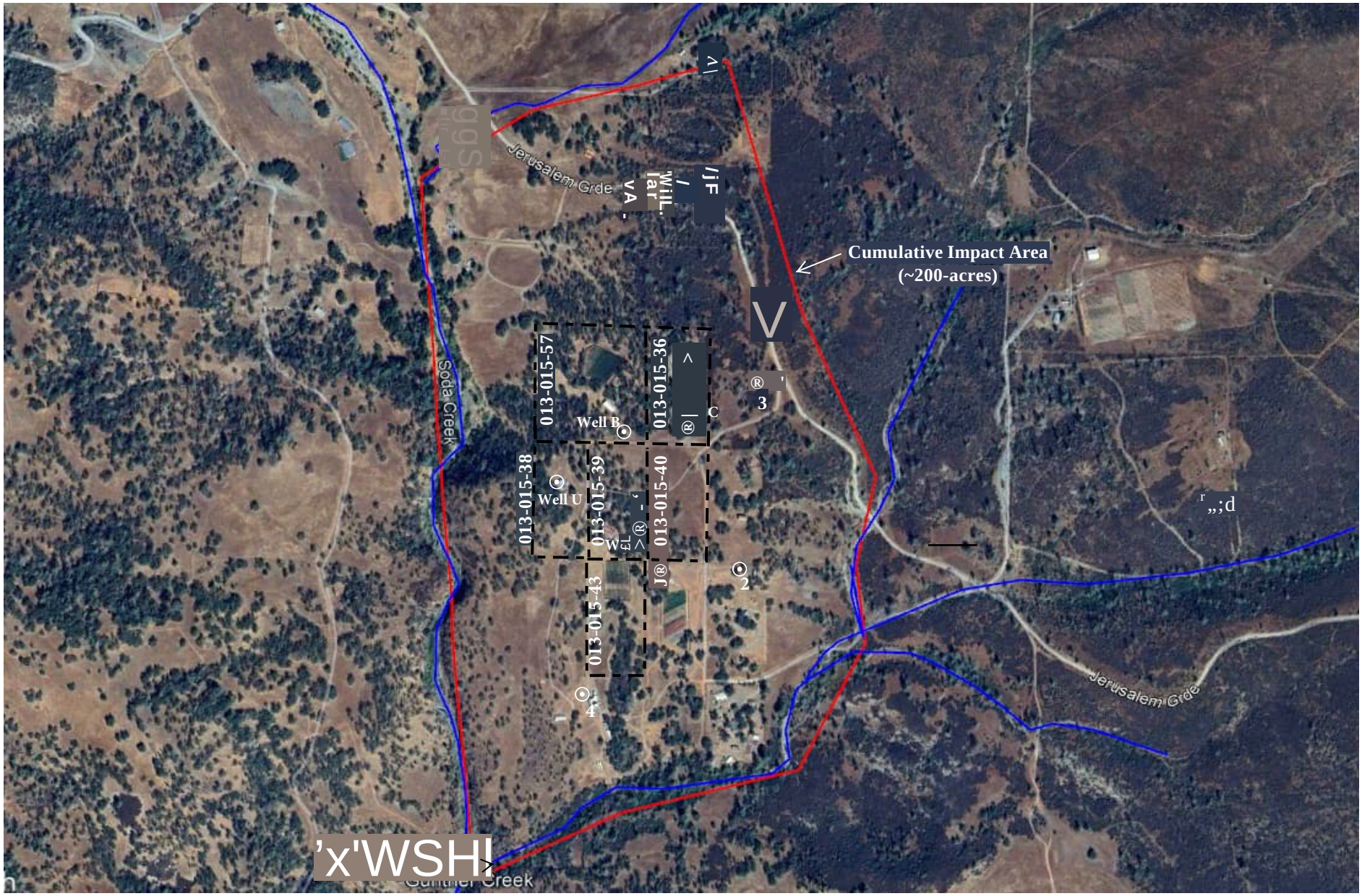
Geologic Map of California, Dept, of Conservation, California Geologic Survey, 2010.

HURVITZ ENVIRONMENTAL
105 MORRIS ST, STE IBS
SEBASTOPOL, CA 95472
PH: 707.824.1690
EX: 707.824.2675
HURVITZ.ENVIRONMENTAL@GMAIL.COM
CA PG# 7573

Geologic Map

23119&23131 Jerusalem Grade Road
Middletown, CA

JOB NUMBER: **5309.01**
DATE: **06/04/25**
PLATE: **5**



HURVITZ ENVIRONMENTAL
105 MORRIS ST, STE IBS
SEBASTOPOL, CA 95472
PH: 707.824.1690
EX: 707.824.2675
HURVITZ.ENVIRONMENTAL@GMAIL.COM
CA PG# 7573

Site Plan with Cumulative Impact Area

23119&23131 Jerusalem Grade Road
Middletown, CA

JOB NUMBER: 5309.01
DATE: 06/04/25
PLATE: 6

APPENDIX A

SITE PHOTOGRAPHS

SITE PHOTOGRAPHS
June, 2025

View of proposed cultivation area on Site Parcel 013-015-57.

View of proposed cultivation area on Site Parcel 013-015-39.

SITE PHOTOGRAPHS
June, 2025

Site Well D (013-015-36)

SITE PHOTOGRAPHS
June, 2025

Site Well B (031-015-57)

North Garden

SITE PHOTOGRAPHS
June, 2025

Site Well A (013-015-39)

South Garden

SITE PHOTOGRAPHS
June, 2025

APPENDIX B

WELL COMPLETION REPORTS

APPENDIX C

WELL YIELD TESTS

Date: **6/16/2023** Technician: **Ken Feola**

Client Name: **Ross Cunningham**

Site Address: **23119 Jerusalem Grade Road** APN: **013-015-57**

Well Pump Info (size, type, brand, etc.): **Grundfos solar pump**

Power Source (hardwired, generator, solar only, solar with generator back up): **Hardwii Generator**

Total Depth of Well? **224-Feet** Static Water Level? **143.0-Feet**

Diameter of Well? **4.5-inches** Casing Type? **PVC**

Last time the water was pumped from the well? **6/14/2023**

Was the pumping level measured from ground surface or top of casing? **Top of Casing**

Interval	Time	Flow Rate*	Pumping Level
5	6:15	12.5	144.20
5	6:20	12.3	144.10
5	6:25	12.0	144.20
5	6:30	11.8	144.70
5	6:35	11.6	144.80
5	6:40	11.5	144.90
10	6:50	11.5	145.00
10	7:00	11.2	145.30
10	7:10	11.1	145.50
10	7:20	11.0	145.60
10	7:30	11.0	146.00
10	7:40	11.0	146.00
30	8:10	11.0	146.00
30	8:40	11.0	146.00
30	9:10	11.0	146.00
30	9:40	11.0	146.00
30	10:10	11.0	146.00
30			
30			
30			
30			
STOP			
10	10:20	RECHARGE	145.0
30	10:50	RECHARGE	144.0

*Flow Rate Measured via ~~Bucket~~ or **Meter**

Meter Start: 570040

Meter Stop: 572640

Total Gallons Produced: 2600

Average GPM: **11.06**

NOTES: The solar pump was temporarily wired to generator power for the test.

Recharge Rate: **98.80%**

Well should be fully recharged <1hour of pumping.

pH: **7.8**

TDS: **N/A**

Hardness: **27 grains per gallon**

Iron: **1 ppm**

GPS: **38.4842°, -122.2921°**

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.

Date: **6/16/2023** Technician: **Kharom Hellwege**

Client Name: **Ross Cunningham**

Site Address: **23131 Jerusalem Grade Road** APN: **013-015-39**

Well Pump Info (size, type, brand, etc.): **Solar pump**

Power Source (hardwired, generator, solar only, solar with generator back up): **Hardwii Generator**

Total Depth of Well? **210-Feet** Static Water Level? **131.0-Feet**

Diameter of Well? **4.5-inches** Casing Type? **PVC**

Last time the water was pumped from the well? **6/14/2023**

Was the pumping level measured from ground surface or top of casing? **Top of Casing**

Interval	Time	Flow Rate*	Pumping Level
5	6:30	24.0	137.00
5	6:35	24.0	141.00
5	6:40	23.5	141.50
5	6:45	23.5	141.50
5	6:50	23.0	141.70
5	6:55	22.5	141.70
10	7:05	22.5	142.00
10	7:15	22.0	143.00
10	7:25	22.0	146.00
10	7:35	22.0	146.00
10	7:45	22.0	146.00
10	7:55	22.0	146.00
30	8:25	22.0	146.00
30	8:55	22.0	146.00
30	9:25	22.0	146.00
30			
30			
30			
30			
30			
30			
STOP			
10	9:35	RECHARGE	133.0
30	10:05	RECHARGE	131.6

*Flow Rate Measured via ~~Bucket~~ or **Meter**

Meter Start: 1146480

Meter Stop: 1150460

Total Gallons Produced: 3980

Average GPM: **22.74**

Recharge Rate: **99.00%**

NOTES: The solar pump was temporarily wired to generator power for the test.

pH: **7.4**

TDS: **N/A**

Hardness: **24 grains per gallon**

Iron: **0.7 ppm**

GPS: **38.81092°, -122.48877°**

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.

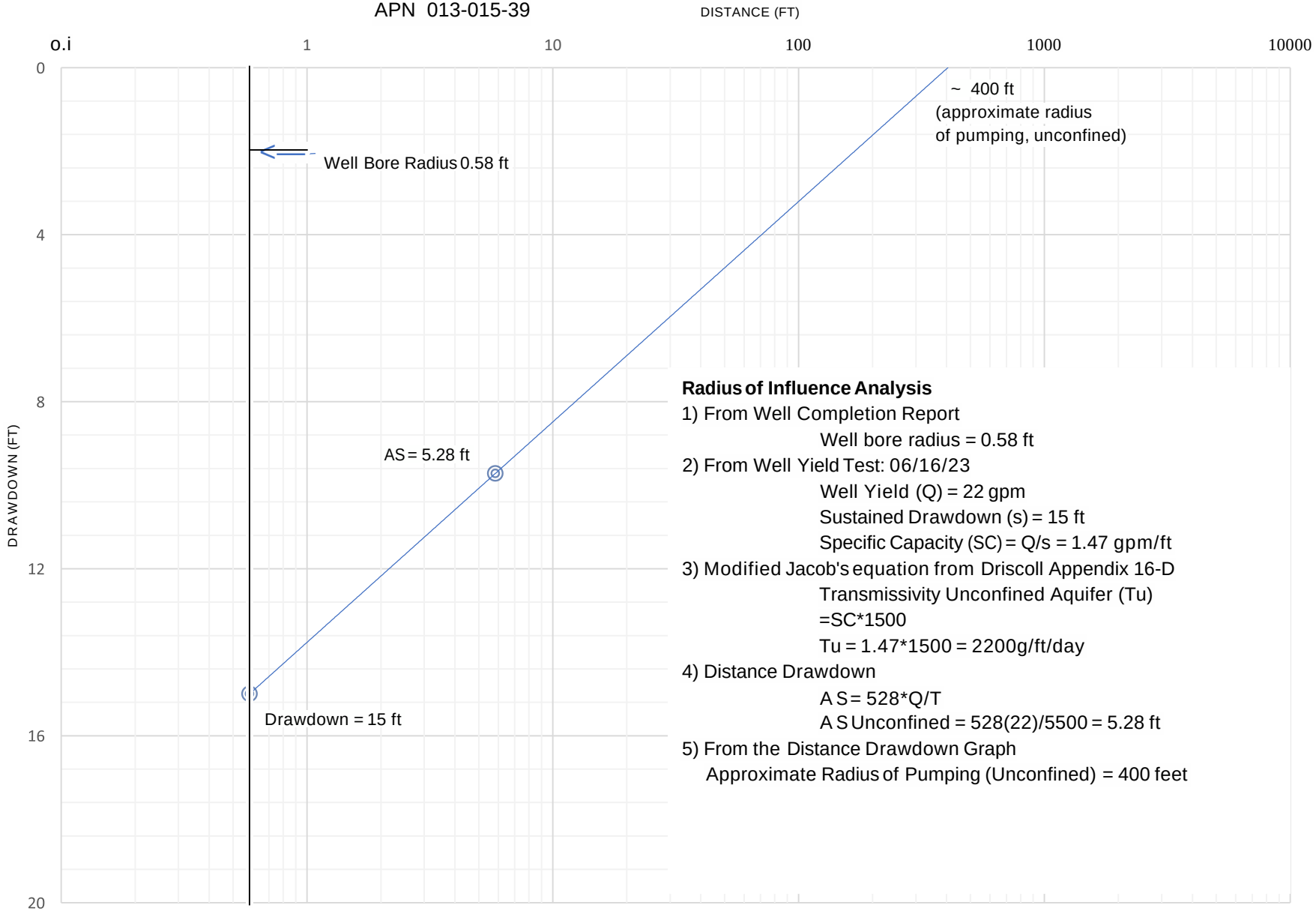
APPENDIX D

RADIUS OF PUMPING INFLUENCE

Provided Upon Request

Radius of Pumping Influence

Site Well A
23131 Jerusalem Grade Road
APN 013-015-39

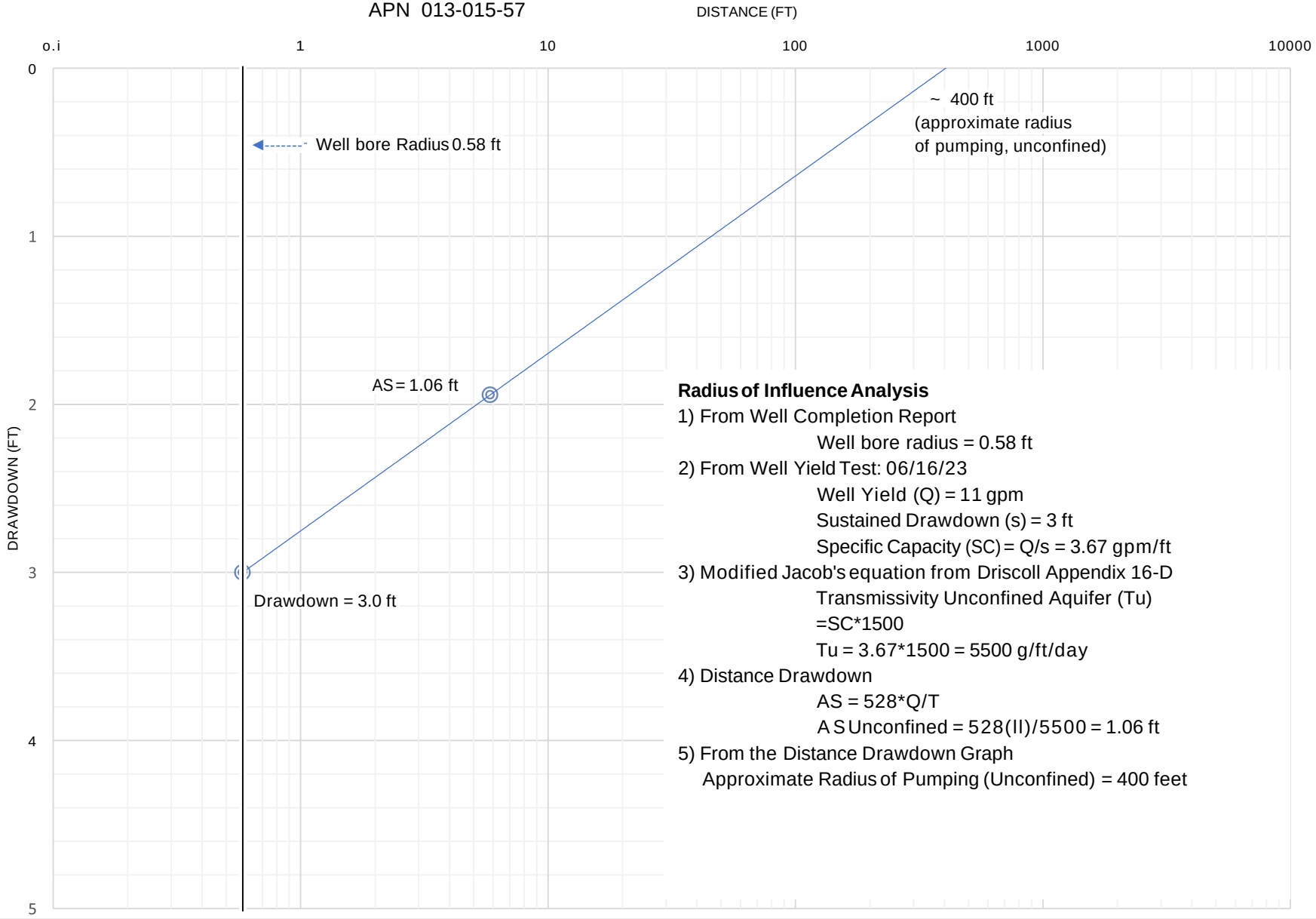


Radius of Influence Analysis

1) From Well Completion Report
   Well bore radius = 0.58 ft
2) From Well Yield Test: 06/16/23
   Well Yield (Q) = 22 gpm
   Sustained Drawdown (s) = 15 ft
   Specific Capacity (SC) = Q/s = 1.47 gpm/ft
3) Modified Jacob's equation from Driscoll Appendix 16-D
   Transmissivity Unconfined Aquifer (Tu)
   =SC*1500
   Tu = 1.47*1500 = 2200g/ft/day
4) Distance Drawdown
   A S = 528*Q/T
   A S Unconfined = 528(22)/5500 = 5.28 ft
5) From the Distance Drawdown Graph
   Approximate Radius of Pumping (Unconfined) = 400 feet

Radius of Pumping Influence

Site Well B
23119 Jerusalem Grade Road
APN 013-015-57



Radius of Influence Analysis

1) From Well Completion Report
   Well bore radius = 0.58 ft
2) From Well Yield Test: 06/16/23
   Well Yield (Q) = 11 gpm
   Sustained Drawdown (s) = 3 ft
   Specific Capacity (SC) = Q/s = 3.67 gpm/ft
3) Modified Jacob's equation from Driscoll Appendix 16-D
   Transmissivity Unconfined Aquifer (Tu)
   =SC*1500
   Tu = 3.67*1500 = 5500 g/ft/day
4) Distance Drawdown
   AS = 528*Q/T
   A S Unconfined = 528(ll)/5500 = 1.06 ft
5) From the Distance Drawdown Graph
   Approximate Radius of Pumping (Unconfined) = 400 feet

APPENDIX E

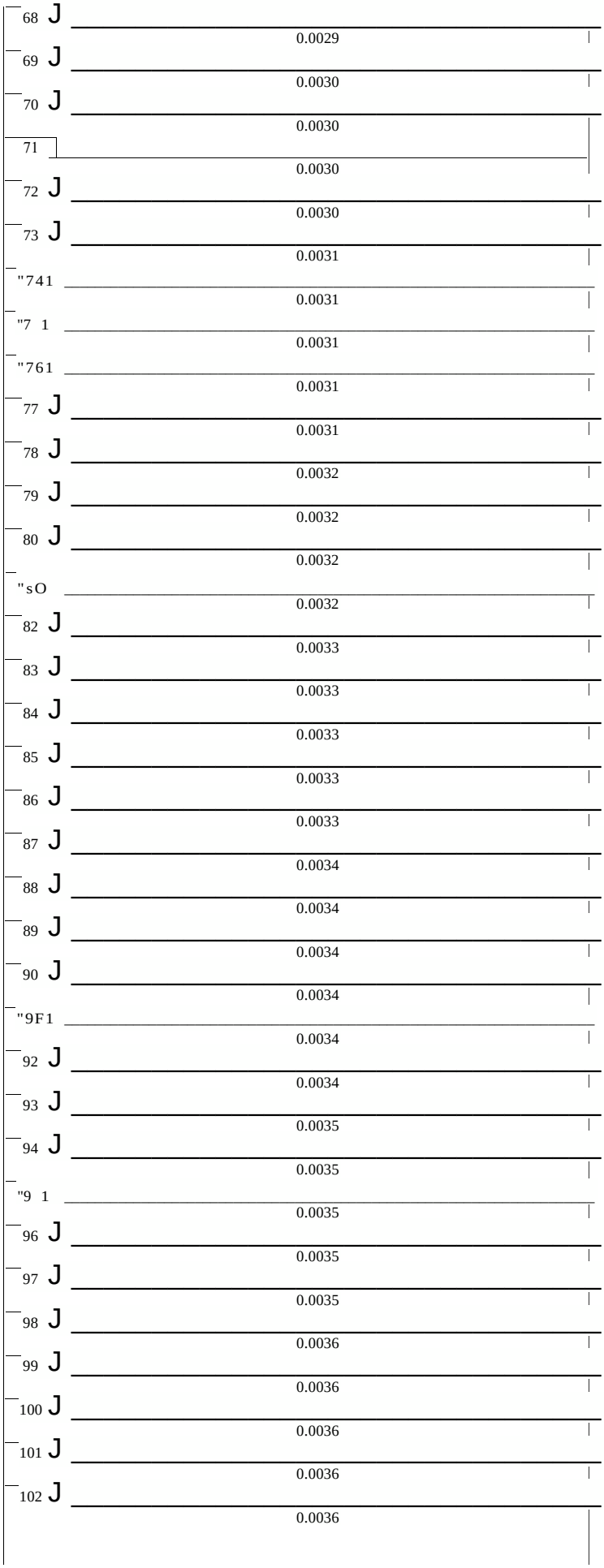
STREAM DEPLETION RESULTS

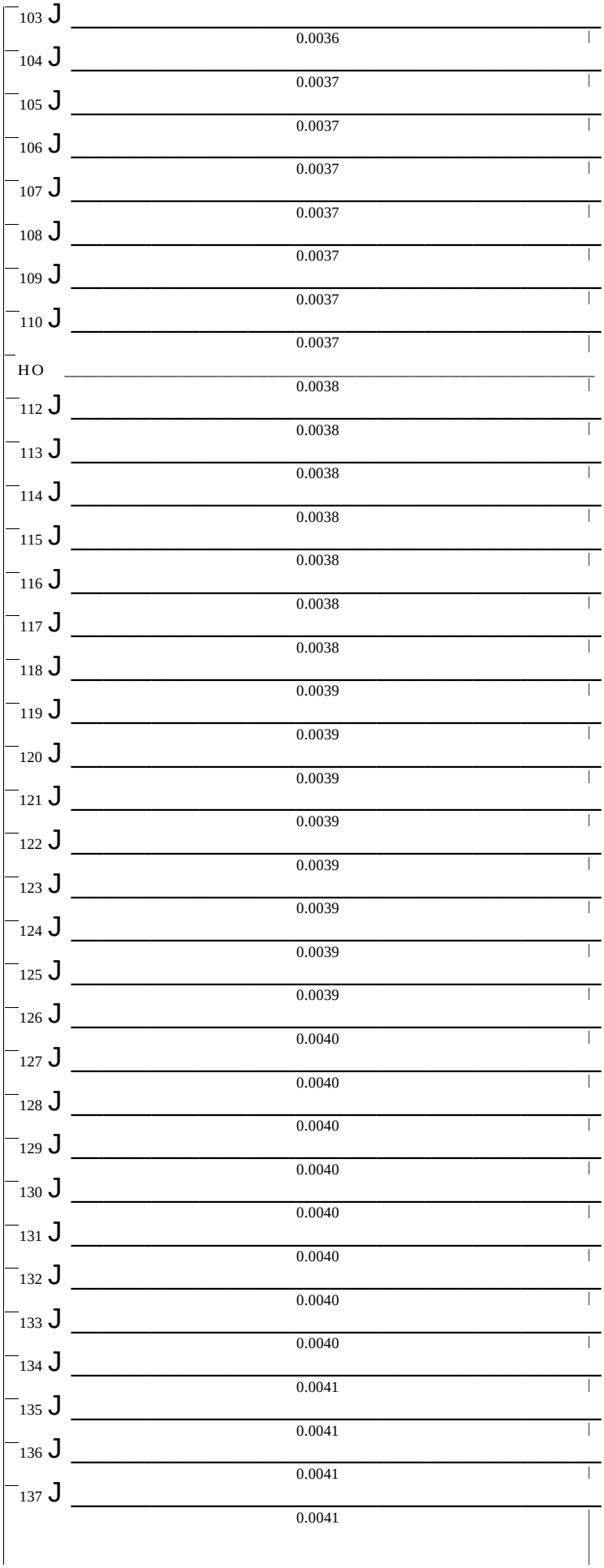
Day	Stream Depletion (cubic foot per second) 1 cubic foot per second=448.8 gallons per minute
T1	0.0000
" 1	0.0000
" 1	0.0000
4	0.0000
5	0.0000
"O	0.0000
7	0.0001
"8"1	0.0001
9	0.0002
"iol	0.0002
in	0.0003
in	0.0003
in	0.0004
in	0.0005
in	0.0005
in	0.0006
in	0.0007
in	0.0007
in	0.0008
20 J	0.0009
in	0.0009
22 J	0.0010
23 J	0.0011
in	0.0011
in	0.0012
26 J	0.0013
27 J	0.0013
28 J	0.0014
29 J	0.0014
30 J	0.0015
in	0.0015
32 J	0.0016

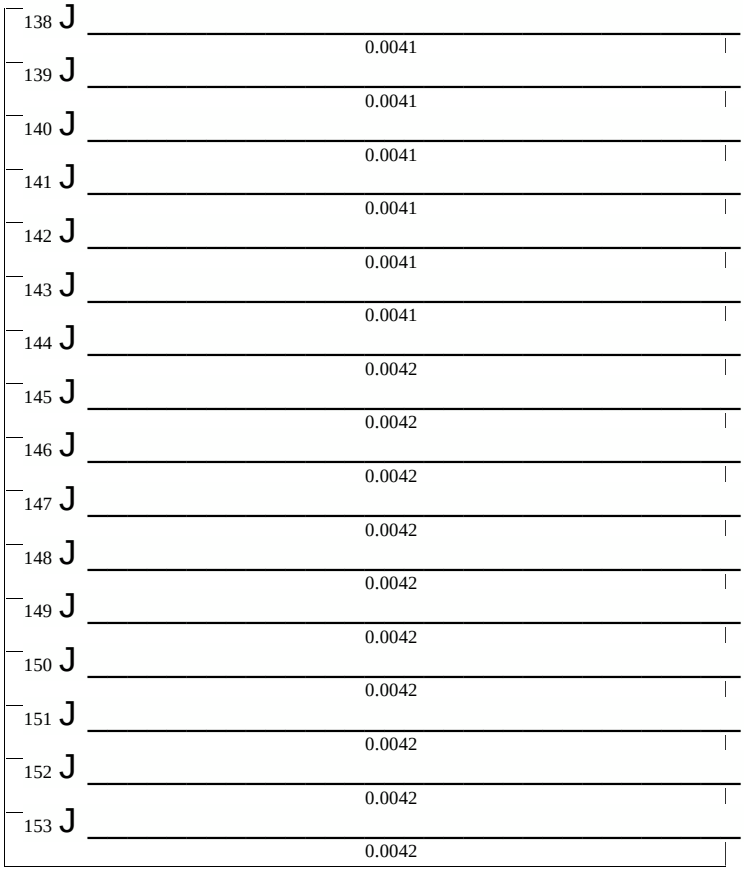
Stream Depletion Results for Site Well A

Distance = **1,100 feet**
T = 294 ft^2/day
Storage Coefficient = **0.02**
Pumping Rate = **3.37 gpm**
Pumping Time = **153 days**
Streambed Conductance = **4.9 ft/day**

33 J
0.0016
3 1
0.0017
35 J
0.0017
36 J
0.0018
37 J
0.0018
38 J
0.0019
39 J
0.0019
40 J
0.0020
4F1
0.0020
420
0.0021
431
0.0021
44 J
0.0021
45
0.0022
46 J
0.0022
47
0.0023
48 J
0.0023
49 J
0.0023
50 J
0.0024
5F1
0.0024
52
0.0024
53 J
0.0025
54
0.0025
55 J
0.0025
56 J
0.0026
57
0.0026
58 J
0.0026
59
0.0027
60 J
0.0027
60
0.0027
62 J
0.0028
63 J
0.0028
64 J
0.0028
65 J
0.0028
66 J
0.0029
67
0.0029


68 J
0.0029
69 J
0.0030
70 J
0.0030
71
0.0030
72 J
0.0030
73 J
0.0031
"741
0.0031
"7 1
0.0031
"761
0.0031
77 J
0.0031
78 J
0.0032
79 J
0.0032
80 J
0.0032
"sO
0.0032
82 J
0.0033
83 J
0.0033
84 J
0.0033
85 J
0.0033
86 J
0.0033
87 J
0.0034
88 J
0.0034
89 J
0.0034
90 J
0.0034
"9F1
0.0034
92 J
0.0034
93 J
0.0035
94 J
0.0035
"9 1
0.0035
96 J
0.0035
97 J
0.0035
98 J
0.0036
99 J
0.0036
100 J
0.0036
101 J
0.0036
102 J
0.0036


103 J
0.0036
104 J
0.0037
105 J
0.0037
106 J
0.0037
107 J
0.0037
108 J
0.0037
109 J
0.0037
110 J
0.0037
HO
0.0038
112 J
0.0038
113 J
0.0038
114 J
0.0038
115 J
0.0038
116 J
0.0038
117 J
0.0038
118 J
0.0039
119 J
0.0039
120 J
0.0039
121 J
0.0039
122 J
0.0039
123 J
0.0039
124 J
0.0039
125 J
0.0039
126 J
0.0040
127 J
0.0040
128 J
0.0040
129 J
0.0040
130 J
0.0040
131 J
0.0040
132 J
0.0040
133 J
0.0040
134 J
0.0041
135 J
0.0041
136 J
0.0041
137 J
0.0041

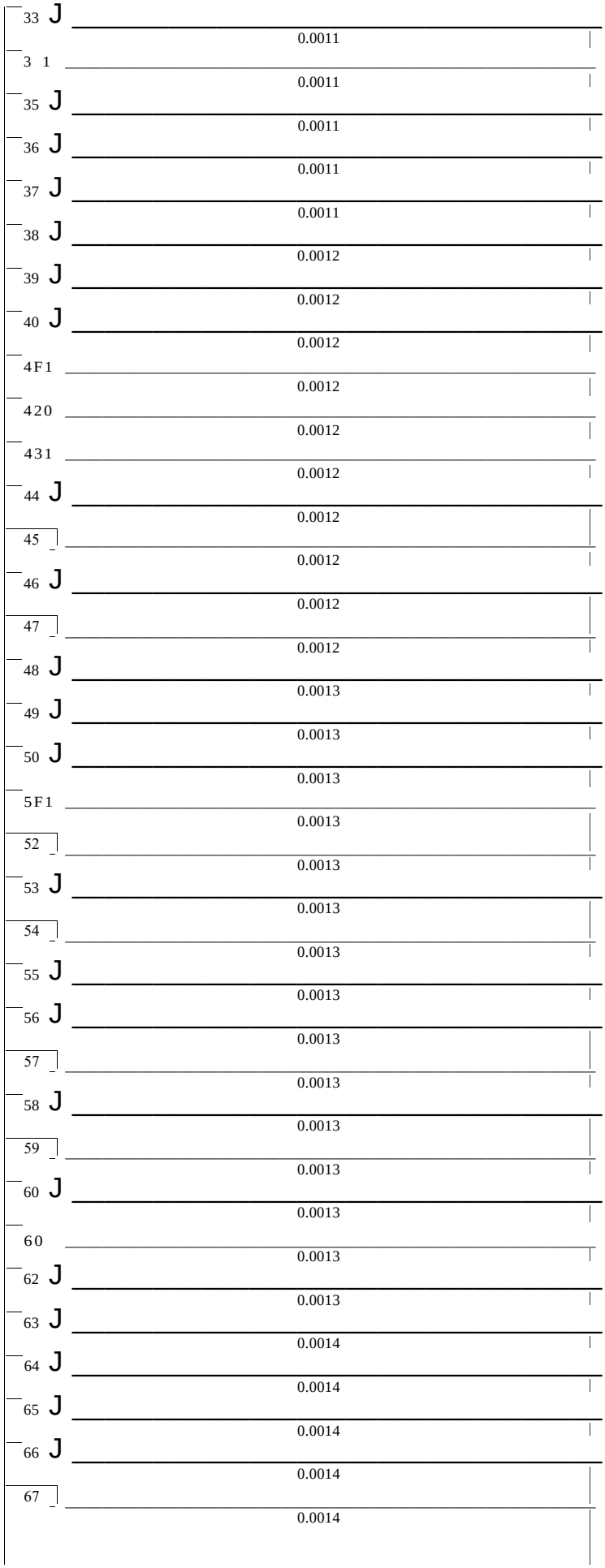

138 J
0.0041
139 J
0.0041
140 J
0.0041
141 J
0.0041
142 J
0.0041
143 J
0.0041
144 J
0.0042
145 J
0.0042
146 J
0.0042
147 J
0.0042
148 J
0.0042
149 J
0.0042
150 J
0.0042
151 J
0.0042
152 J
0.0042
153 J
0.0042

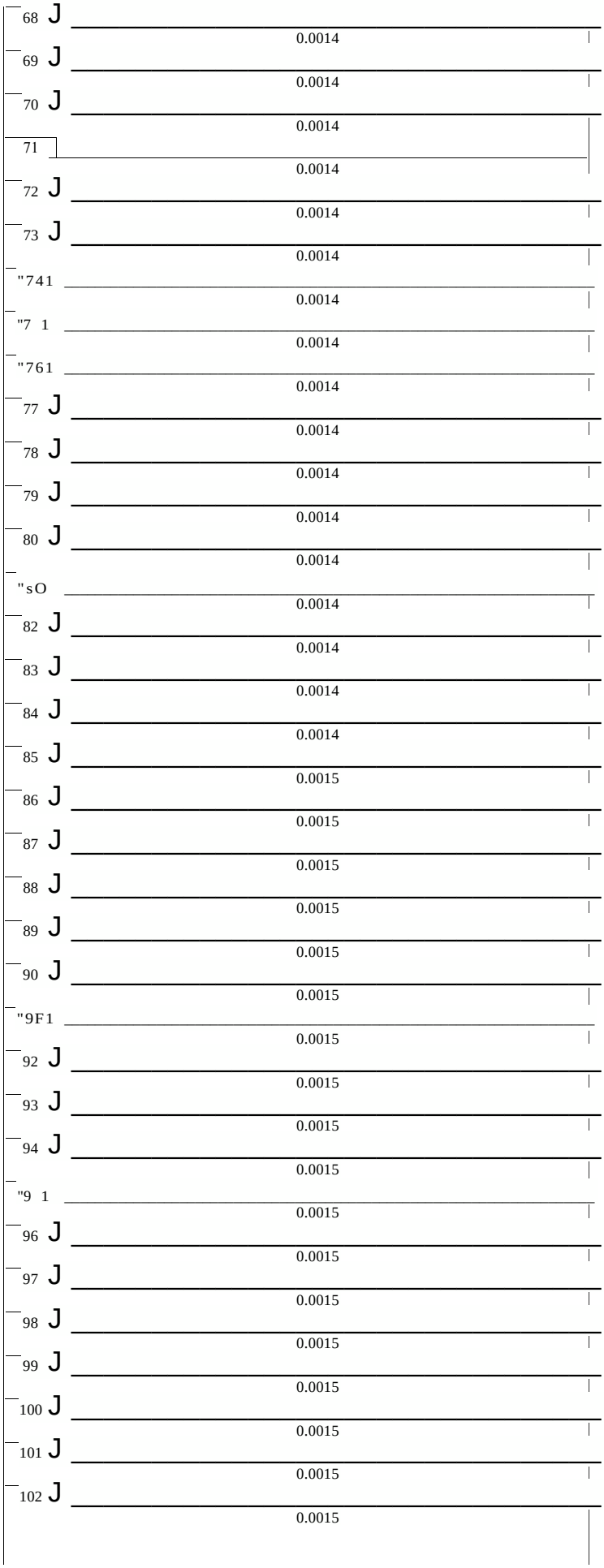
ZUSGS
science fora changing world

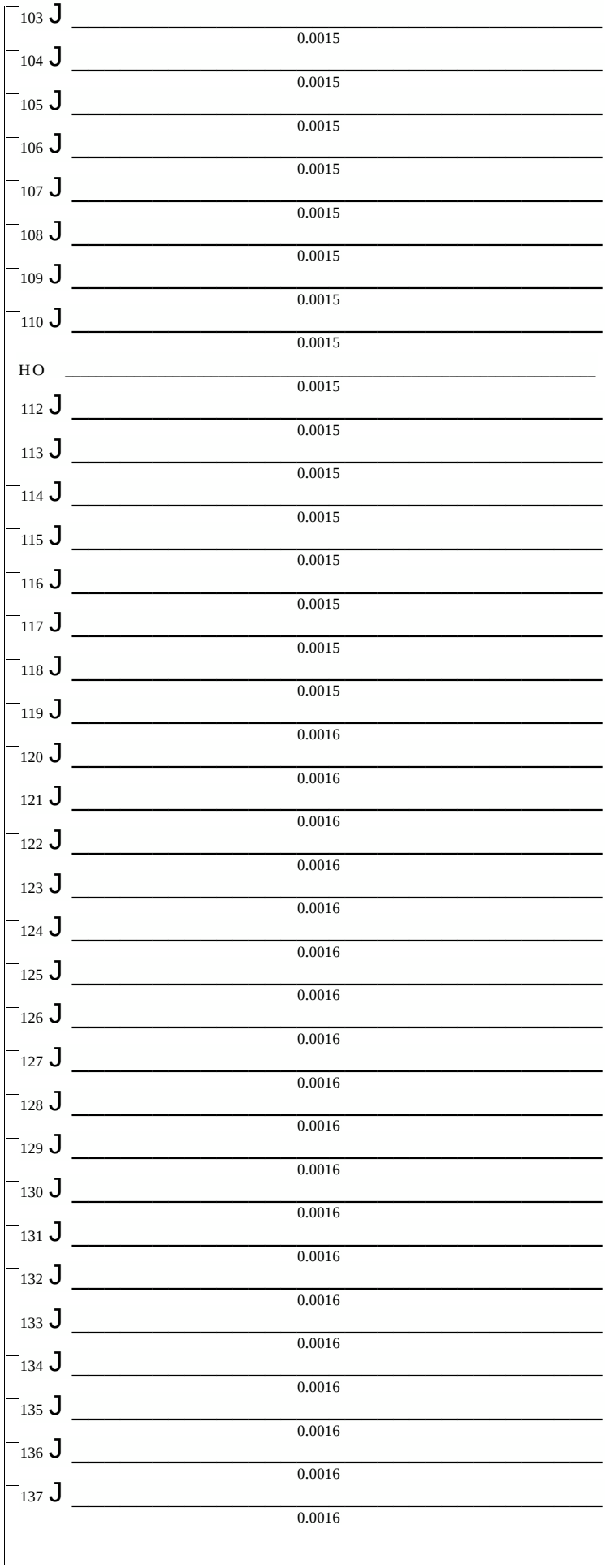
Stream Depletion Results for Site Well B

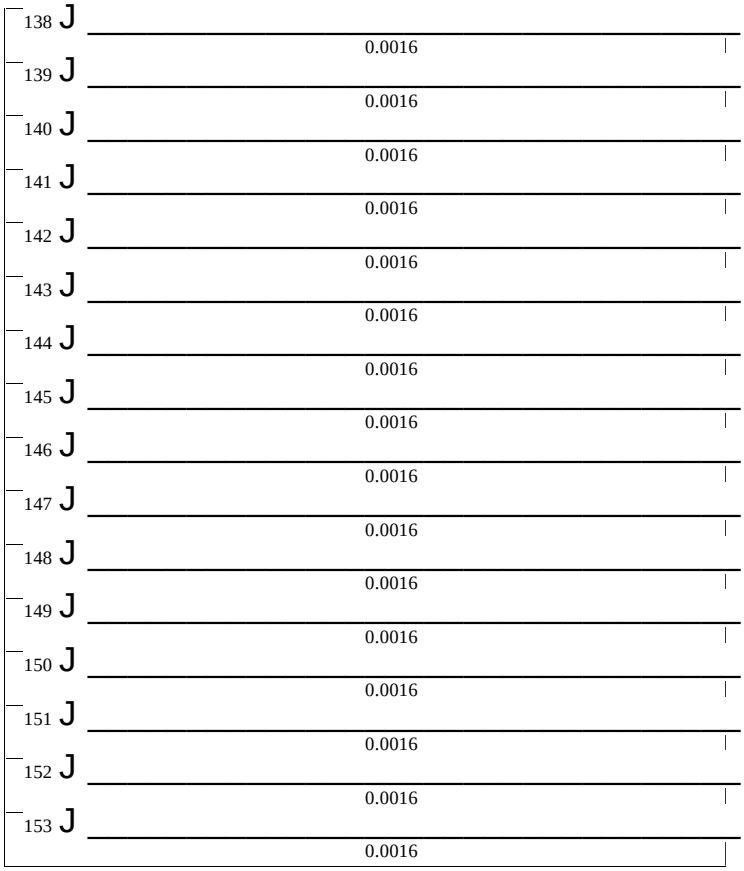
Distance = **930 feet**
T = 735 ft^2/day
Storage Coefficient = **0.02**
Pumping Rate = **0.95 gpm**
Pumping Time = **153 days**
Streambed Conductance = **18.4 ft/day**

Day	Stream Depletion (cubic foot per second) 1 cubic foot per second=448.8 gallons per minute
T1	0.0000
" 1	0.0000
" 1	0.0001
4	0.0001
5	0.0002
"0	0.0003
7	0.0003
"0	0.0004
9	0.0005
"iol	0.0005
in	0.0006
in	0.0006
in	0.0006
in	0.0007
in	0.0007
in	0.0007
in	0.0008
in	0.0008
in	0.0008
20 J	0.0009
in	0.0009
22 J	0.0009
23 J	0.0009
in	0.0009
in	0.0010
26 J	0.0010
27 J	0.0010
28 J	0.0010
29 J	0.0010
30 J	0.0011
in	0.0011
32 J	0.0011


33 J
0.0011
3 1
0.0011
35 J
0.0011
36 J
0.0011
37 J
0.0011
38 J
0.0012
39 J
0.0012
40 J
0.0012
4F1
0.0012
420
0.0012
431
0.0012
44 J
0.0012
45
0.0012
46 J
0.0012
47
0.0012
48 J
0.0013
49 J
0.0013
50 J
0.0013
5F1
0.0013
52
0.0013
53 J
0.0013
54
0.0013
55 J
0.0013
56 J
0.0013
57
0.0013
58 J
0.0013
59
0.0013
60 J
0.0013
60
0.0013
62 J
0.0013
63 J
0.0014
64 J
0.0014
65 J
0.0014
66 J
0.0014
67
0.0014


68 J
0.0014
69 J
0.0014
70 J
0.0014
71
0.0014
72 J
0.0014
73 J
0.0014
"741
0.0014
"7 1
0.0014
"761
0.0014
77 J
0.0014
78 J
0.0014
79 J
0.0014
80 J
0.0014
"sO
0.0014
82 J
0.0014
83 J
0.0014
84 J
0.0014
85 J
0.0015
86 J
0.0015
87 J
0.0015
88 J
0.0015
89 J
0.0015
90 J
0.0015
"9F1
0.0015
92 J
0.0015
93 J
0.0015
94 J
0.0015
"9 1
0.0015
96 J
0.0015
97 J
0.0015
98 J
0.0015
99 J
0.0015
100 J
0.0015
101 J
0.0015
102 J
0.0015


103 J
0.0015
104 J
0.0015
105 J
0.0015
106 J
0.0015
107 J
0.0015
108 J
0.0015
109 J
0.0015
110 J
0.0015
HO
0.0015
112 J
0.0015
113 J
0.0015
114 J
0.0015
115 J
0.0015
116 J
0.0015
117 J
0.0015
118 J
0.0015
119 J
0.0016
120 J
0.0016
121 J
0.0016
122 J
0.0016
123 J
0.0016
124 J
0.0016
125 J
0.0016
126 J
0.0016
127 J
0.0016
128 J
0.0016
129 J
0.0016
130 J
0.0016
131 J
0.0016
132 J
0.0016
133 J
0.0016
134 J
0.0016
135 J
0.0016
136 J
0.0016
137 J
0.0016


138 J
0.0016
139 J
0.0016
140 J
0.0016
141 J
0.0016
142 J
0.0016
143 J
0.0016
144 J
0.0016
145 J
0.0016
146 J
0.0016
147 J
0.0016
148 J
0.0016
149 J
0.0016
150 J
0.0016
151 J
0.0016
152 J
0.0016
153 J
0.0016