APPENDIX G

DROUGHT MANAGEMENT PLAN

January 13, 2025

Mr. Samual Edwards
1833 DS LLC
10750 Seigler Springs Road North
Kelseyville, CA 95451

RE: DROUGHT MANAGEMENT PLAN
1833 DS LLC
KELSEYVILLE, CALIFORNIA 95451
EBA Job No. 24-3575

Dear Mr. Edwards,

This Drought Management Plan (DMP) has been prepared to outline the recommended best management practices to be implemented as water saving measures during drought conditions for the proposed project at the 1833 DS LLC site, located near Kelseyville, California, hereinafter referred to as the project site. This DMP has been prepared as an Appendix to supplement EBA Engineering's August 2024 *Water Availability Report* (EBA, 2025) and for submittal to the County of Lake to address requirements as outlined in the County of Lake's Urgency Ordinance No. 3106 (*An Urgency Ordinance Requiring Land Use Applicants to Provide Enhanced Water Analysis During a Declared Drought Emergency*, County of Lake, 2021).

WATER SOURCES AND IRRIGATION

All project water demand will be supplied by the project site's irrigation wells: Well 1 and Well 2. Well 1, located on APN 115-004-070 at an elevation of 2,567 feet NAVD88, is primarily used for water supply to the cannabis farm, with a yield of 197 gallons per minute and a static groundwater level of 129 feet bgs per the Well Completion Report. Well 2, situated on APN 115-004-080 at 2,562 feet NAVD88, serves as the second water supply well, with a yield of 275 gallons per minute and a static groundwater level of 151 feet bgs per the Well Completion Report. Both wells have been tested to ensure adequate performance and recovery rates by Jim's Pumps from Upper Lake.

Irrigation will be provided from the water distribution system which will utilize the irrigation wells as a source and a 300,000-gallon aboveground water storage tank for storage. The cannabis irrigation distribution system will consist of highly efficient drip irrigation delivered to cannabis plants through a combination of PVC piping, black polyethylene tubing, and drip lines. The water storage tank will be equipped with a float valve to prevent overflow and runoff of irrigation water when full. Additionally, safety valves are equipped to supply lines in case the flow of irrigation water needs to be stopped in an emergency situation. A meter compliant with Title 23, Division 3, Chapter 2.7 of the California Code of Regulations is used to measure water produced from the irrigation wells to maintain water usage records. All records will be made available to all interested state and county departments upon request.

While the results of EBA's *Water Availability Analysis* (EBA, 2025) suggest that a positive water balance exists for project site-specific groundwater recharge during an assumed drought scenario (60 percent of average annual precipitation), best management practices have been developed to provide additional water saving measures during a declared drought emergency. These best management practices are described in the following subsection.

BEST MANAGEMENT PRACTICES DURING A DECLARED DROUGHT EMERGENCY

During a declared drought emergency, EBA recommends implementation of the following:

- Incremental annual development of water storage volume to catch/store rainwater from the roofs of the cannabis processing building and other project buildings;
- Installation of low flow fixtures in all facilities;
- Use of growing mediums with enhanced water storage/retention capacity;
- Reduction in water applied per plant via reduced duration of water application and/or reduced volume of water emitted from irrigation emitters via flow constrictors; and
- If deemed necessary, a reduction in total water applied annually via a reduction in the total square footage of canopy planted/irrigated.

CLOSING

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

Sincerely,

EBA ENGINEERING

BMWallace

Brian M. Wallace, PE, MS, MBA, QSD
Project Engineer

REFERENCES

County of Lake, July 27, 2021. An Urgency Ordinance Requiring Land Use Applicants to Provide Enhanced Water Analysis During a Declared Drought Emergency.

EBA Engineering, Water Availability Analysis, 1833 DS LLC., Kelseyville, California. January, 2025.

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March 3, 2025 09173.00001.001

Peter Simon
Beyers Costin Simon LLP
200 4th Street, #400
Santa Rosa, CA 95401

Subject: 1833 DS Cannabis Cultivation Project Air Quality and Greenhouse Gas Emissions Analysis

Dear Mr. Simon:

HELIX Environmental Planning, Inc. (HELIX) assessed the air quality and greenhouse gas (GHG) emissions impacts associated with the construction and operation of the proposed 1833 DS Cannabis Cultivation Project (project) located in Lake County (County). Analysis within this report was prepared to support impact analysis pursuant to the California Environmental Quality Act (CEQA; Public Resources Code Sections 21000 et seq.) and CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations).

PROJECT LOCATION

The proposed project is located at an existing cannabis cultivation facility at 10750 North Seigler Springs Road in the community of Kelseyville, Lake County, California. The overall cannabis cultivation facility property consists of five adjacent Assessor's Parcel Numbers (APNs): 011-069-48, 115-004-01, 115-004-05, 115-004-07, and 115-004-08. The proposed project site encompasses 51.61 acres on APNs 011-069-48, 115-004-01, and 115-004-05; however, the footprint of the proposed cannabis cultivation area and new cannabis support structures would occur on 43.14 acres of the project site. The project site is accessed by State Route (SR) 29 between Lakeport and Lower Lake via Diener Drive or by SR 175 between Middletown and Kelseyville via Seigler Spring Road from Loch Lomond. See Figure 1, *Site and Vicinity Map*, and Figure 2, *Aerial Map* (Note: all figures are included in Attachment A).

PROJECT BACKGROUND

Previous CEQA Analysis

The proposed project would expand upon an existing cannabis cultivation facility in Lake County. An Initial Study/ Mitigated Negative Declaration (IS/MND) was approved for the initial cannabis cultivation facility on April 4, 2022, under Use Permit UP 20-11, which evaluated 11 acres of cannabis canopy,

removal of existing vineyards, construction of a 27,201 square foot (sf) nursery facility, installation of temporary hoop houses for shading, construction of four 22,000-sf greenhouses, installation of fencing, improvement of internal dirt/gravel roads for access to cultivation areas, utilization of a 300,000-gallon agricultural water storage tank for fire suppression and water management, and construction of a pesticide storage shed, compost shed, and a secured cannabis waste container. The initial outdoor cannabis cultivation and processing area under this phase only occurred on APNs 115-004-01 and 115-004-05.

A Phase II expansion of the cannabis cultivation facility was approved on April 19, 2023, under Use Permit 22-31, which expanded the total outdoor cannabis cultivation canopy from 11 to 20 acres. Under this phase, outdoor cannabis cultivation and processing remained on APNs 115-004-01 and 115-004-05.

Existing Conditions

Cannabis Cultivation Facilities

The initial operation of the cannabis cultivation facility was approved on April 4, 2022, and approved for further expansion on April 19, 2023. The cannabis cultivation facility includes 35.73 acres of previously approved outdoor cultivation areas, which contain 20 acres of total outdoor cannabis canopy, located on cultivation Areas A and B. The property also includes an existing 22,000-sf processing building with awnings, an approximately 2,000-sf concrete pad, and perimeter fencing around the existing cultivation areas. A total of three single-family residences are located on the applicant-owned property, located on APNs 011-069-48, 115-004-07, and 115-004-08; however, these single-family residences are located outside of the project footprint.

Site Access

The cannabis cultivation facility is accessible via four existing driveways off Seigler Springs North Road, including two on the north side and two on the south side of the road. The existing driveways provide access for employees, delivery trucks, emergency vehicles, sheriffs and other law enforcement officers, and government employees who are responsible for inspection or enforcement actions. The first 50 feet of the primary driveway leading to the existing processing building is maintained with an all-weather surface to allow for year-round access to the site. Driveway encroachments onto the County-maintained road are constructed to current County standards with an encroachment permit obtained from the Department of Public Works.

Access for agricultural operations within the cannabis cultivation facility occurs via three existing dirt roads. An 18-foot-wide dirt access road is located on the north side of Seigler Springs North Road behind the facility's fence line, which spans both of the facility's northern driveways. Another 18-foot-wide dirt road is located on the south side of Seigler Springs North Road behind the facility's fence line, which spans the north, south, and west perimeter of cultivation Area B.

Parking

A gravel parking lot is located along the southern side of the existing processing building to accommodate employee parking and maneuvering of delivery or emergency vehicles.

Utilities

A double culvert crosses north-south under Seigler Springs North Road, which has two small diameter culverts that serve to convey stormwater under dirt/gravel entrances to the south and north portions of the facility. A vegetated swale is located between the southern cultivation area and the south side of Seigler Springs North Road.

Pacific Gas and Electric Company (PG&E) provides electricity to the cannabis cultivation facility via an existing connection.

Cannabis waste is composted on-site to the east of the existing processing building. C&S/Lake County Waste Solutions are responsible for the removal of the three-cubic yard waste bin from the property during scheduled service appointments.

Water Supply and Storage

Water is supplied by two existing irrigation wells dedicated for cannabis cultivation. Well 1 is located on APN 115-004-07 and serves as the primary water supply to the cannabis cultivation facility with a pumping yield of 197 gallons per minute. Well 2 is located on APN 115-004-08 and serves as the secondary water supply well with a pumping yield of 275 gallons per minute.

Water Use

Currently, the existing outdoor cannabis cultivation areas utilize approximately 58.86 acre-feet per year (AFY) of water.

Landscaping

A vegetative screen, including native trees, was previously planted around the perimeter of the security fencing along the boundary of the project site along Seigler Springs North Road. The trees are currently approximately five feet tall and are anticipated to grow up to 20 feet or more upon maturity. The trees are maintained to provide visual screening of the site from Seigler Springs North Road. Additionally, lavender and other odiferous plants are planted around the perimeter of the outdoor cultivation areas.

Odor Control

The cannabis cultivation facility currently implements an odor control plan that limits and controls the cannabis odor such that it is undetectable outside of the premises. As part of this plan, odor control and reduction systems are installed during cultivation, including placing portions of the outdoor cultivation canopy under plastic sheeted temporary hoops to contain odor, as well as maintaining odiferous plants such as lavender around the property to help overpower and mask cannabis odors. Along with this system, contingency measures to mitigate or curtail odor and other emissions in the event the methods described above are inadequate to fully prevent off-site nuisance conditions include adding additional plastic sheeting to areas with odor migration issues or installation of carbon filter(s) in series.

Current Operation

Operation of the cannabis cultivation facility involves the cultivation of flowering cannabis plants within outdoor cultivation Areas A and B, which comprise a total of 20 acres of canopy. Once harvested, the plants are dried and trimmed in the existing processing building, before being bulk-packaged for seasonal transfer to an off-site facility. Currently, a maximum of 15 full-time employees are employed on-site at a time.

The facility typically operates Monday through Friday between 7:00 A.M. and 4:00 P.M. During peak season, the facility occasionally operates on Saturdays and Sundays. All deliveries and/or pickups occur Monday through Saturday between 7:00 A.M. and 7:00 P.M. and Sundays from 12:00 P.M. to 5:00 P.M.

PROJECT DESCRIPTION

Cannabis Cultivation Facilities

The proposed project would increase the existing canopy on cultivation Area B and would add a new canopy on the proposed outdoor cultivation Areas C through F, located on APNs 115-004-01 and 011-069-48. The total proposed new canopy would be 10.1 acres. The proposed project would also construct a 39,900-sf processing building on a 40,000-sf site and a 40,000-sf nursery building (see Figure 3, *Site Plan*; included in Attachment A).

Site Access

Similar to the existing cannabis cultivation facility, primary access to the project site is from Seigler Springs North Road, which traverses the center of the project site from northwest to southeast. Four existing driveways provide access to the project site from Seigler Springs North Road, including two on the north side and two on the south side of the roadway. Seigler Springs North Road is an unstriped roadway that is mostly paved; however, it is unpaved/gravel in the vicinity of the project. Diener Drive is an unstriped, gravel roadway that extends south-southwest from Seigler Springs North Road and provides access to the proposed southern cultivation areas D, E, and F.

Parking

No new parking areas or spaces are proposed under the project.

Utilities

Utilities for the proposed project would remain the same as the existing cannabis cultivation facility.

Water Supply and Storage

Two 600,000-gallon water storage tanks would be constructed southeast of cultivation Area F and west of the existing 300,000-gallon water storage tank on APN 115-004-01. It should be noted that an additional 300,000-gallon water storage tank was previously approved for construction in this area; however, it is not part of the proposed project and has not been constructed yet.

The cannabis cultivation facility currently receives water supplies from the two existing irrigation wells, Well 1 and Well 2, that are dedicated for cannabis cultivation. Under the proposed project, water from the two existing wells would be used to irrigate the existing outdoor cannabis cultivation on Areas A and B, the proposed canopy on Areas C through F, and the proposed cultivation within the new nursery building. Additionally, water from the wells would be pumped and stored in the existing 300,000-gallon water storage tanks and the two proposed 600,000-gallon water storage tanks.

Water Use

Based on the values estimated for water use for cannabis cultivation and non-irrigation purposes, the total annual water use on-site would be 107.37 AFY under the proposed project. This is inclusive of the 58.86 AFY of water used under existing cultivation conditions.

Landscaping

No new landscaping is proposed under the project.

Construction Schedule and Equipment

Construction of the proposed project is anticipated to begin in April 2026 and be completed in October 2027. Construction of the proposed project would include site preparation, grading, trenching for underground utilities, and building construction. Only minor grading is anticipated, as the majority of the project site has been previously graded. Per the project engineer, no off-site export of debris, vegetation, or soil would be required. Construction activities would be limited to Monday through Friday, between 7:00 A.M. and 7:00 P.M.

Project Operation

Operation of the proposed project would involve the continued cultivation of flowering cannabis plants within the six outdoor mature cultivation areas and the new cultivation of immature plants within the proposed nursery building. The proposed project would increase the maximum number of employees from 15 to 20 workers at any given time. However, this increase in employees would be minimal and would not result in a significant increase in vehicle trips related to current facility operations. Operation of the proposed project would not require new backup generators. The facility would remain not open to the public, and normal working hours would continue to be Monday through Friday, 7:00 A.M. to 4:00 P.M.

AIR QUALITY/GREENHOUSE GAS EMISSIONS ANALYSIS

The proposed project is located at 10750 North Seigler Springs Road in the town of Kelseyville, unincorporated Lake County, which lies within the Lake County Air Basin (LCAB). Air quality in the LCAB is regulated by the U.S. Environmental Protection Agency (USEPA) at the federal level, by the California Air Resources Board (CARB) at the state level, and by the Lake County Air Quality Management District (LCAQMD) at the regional level.

REGULATORY SETTING

Air Quality

Criteria Pollutants

Air quality at the regional level is defined by ambient air concentrations of specific pollutants, identified Criteria pollutants, are defined and regulated by State and federal law as a risk to the health and welfare of the public, and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources, including carbon monoxide (CO); reactive organic gases (ROGs), also known as volatile organic compounds (VOCs); [1] nitrogen oxides (NO_X); sulfur dioxide (SO_2); coarse particulate matter (PM_{10}); fine particulate matter ($PM_{2.5}$); and lead. Of these primary pollutants, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead are criteria pollutants. ROGs and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. The principal secondary criteria pollutants are ozone and nitrogen dioxide (NO_2). In addition to being primary pollutants, PM_{10} and $PM_{2.5}$ can be secondary pollutants formed by chemical reactions in the atmosphere.

Ambient air quality is described in terms of compliance with State and national standards and the levels of air pollutant concentrations considered safe to protect the public health and welfare. These standards are designed to protect people most sensitive to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. The USEPA has established national ambient air quality standards (NAAQS) for criteria pollutants. As permitted by the Clean Air Act (CAA), California has adopted the more stringent California ambient air quality standards (CAAQS) and expanded the number of regulated air pollutant constituents.

CARB is required to designate areas of the State as attainment, nonattainment, or unclassified for any State standard. An “attainment” designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A “nonattainment” designation indicates that a pollutant concentration violated the standard at least once.

The project site is located in unincorporated Lake County, which lies within the LCAB. The air quality attainment status of Lake County is shown in Table 1, *Lake County Attainment Status*. Lake County is designated as attainment or unclassified with respect to the NAAQS and CAAQS.

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Table 1
LAKE COUNTY ATTAINMENT STATUS

Pollutant	State of California Attainment Status	Federal Attainment Status
Ozone	Attainment	Attainment/Unclassified
Coarse Particulate Matter (PM_{10})	Attainment	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Attainment/Unclassified
Carbon Monoxide	Attainment	Attainment/Unclassified
Nitrogen Dioxide	Attainment	Attainment/Unclassified
Lead	Attainment	Attainment/Unclassified
Sulfur Dioxide	Attainment	Attainment/Unclassified
Sulfates	Attainment	No Federal Standard
Hydrogen Sulfide	Attainment	No Federal Standard
Visibility Reducing Particles	Attainment	No Federal Standard

Source: CARB 2025a

Toxic Air Contaminants

Toxic air contaminants (TAC) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness, or that may pose a present or potential hazard to human health. TACs can cause long-term chronic health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye-watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe, and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

The Health and Safety Code (§39655[a]) defines TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." All substances that are listed as hazardous air pollutants pursuant to subsection(b) of Section 112 of the CAA (42 United States Code Sec. 7412[b]) are designated as TACs. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Diesel Particulate Matter

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid materials. The solid material in diesel exhaust is referred to as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is 2.5 microns or less in diameter (CARB 2025b). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health

effects. DPM has a notable effect on California's population—it is estimated that about 70 percent of the total known cancer risk related to air toxins in California is attributable to DPM (CARB 2025b).

Lake County Air Quality Management District

The proposed project is located in unincorporated Lake County, which lies within the LCAB. Air quality in the LCAB is regulated by the USEPA at the federal level, by the CARB at the state level, and by LCAQMD at the regional level. As a regional agency, the LCAQMD enforces local, State, and federal air quality laws, rules, and regulations to meet the Ambient Air Quality Standards (AAQS) and protect the public from air toxins. Due to the fact that the LCAB is in attainment for all NAAQS and CAAQS, LCAQMD has not adopted an air quality plan; however, the LCAQMD uses its rules and regulations to address air quality standards.

Rules and Regulations

The following rules promulgated by the LCAQMD would be applicable to the construction of the proposed project (CARB 2025c):

Chapter II Prohibitions and Standards

Article I-Visible Emissions: A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated as number 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

Article II-Particulate Matter Emissions: A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause to have a natural tendency to cause injury or damage to business or property.

Lake County General Plan

The Lake County General Plan sets forth the following goals and policies relating to air quality, and which have potential relevance to the project's CEQA review (County 2008):

- **Policy HS-3.1 – Monitoring of Point and Area Sources:** New and existing point sources of air pollution should be monitored for compliance with County, State, and federal air quality regulations and standards.

- **Policy HS-3.4 –Paving or Treatment of Roadways for Reduced Air Emissions:** As unpaved roads are a major source of the County's particulate emissions, the County should require that all new roads and driveways for new projects that are in close proximity to adjacent residences, or the public be paved or treated to reduce dust generation where feasible. Unpaved roads, driveways, and parking areas should be considered for surfacing improvements when permits are granted for expanded use.

- **Policy HS-3.9—Air Quality Analysis:** The County may require an analysis of potential air quality impacts associated with significant new developments through the environmental review process, and identification of appropriate mitigation measures before approval of any major development project.

- **Policy HS-3.10—Dust Suppression During Construction:** The County shall require dust-suppression measures for grading activities, and asbestos dust hazard mitigation plans for projects located in Naturally Occurring Asbestos Areas.

- **Policy HS-3.11—Asbestos Inspection During Construction:** The County shall require that all projects requiring a grading permit or a building permit that would result in earth disturbance, in areas likely to contain naturally occurring asbestos, utilize approved asbestos dust mitigation measures as required by the LCAQMD, CARB, and the Lake County Community Development Department.

Greenhouse Gases

Global climate change refers to changes in average climatic conditions on Earth, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The GHGs defined under California's Assembly Bill (AB) 32 include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Estimates of GHG emissions are commonly presented in carbon dioxide equivalents (CO_2e), which weigh each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. GHG emissions quantities in this analysis are presented in metric tons (MT) of CO_2e. For consistency with United Nations Standards, modeling, and reporting of GHGs in California and the U.S. use the GWPs defined in the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report (IPCC 2007): CO_2 – 1; CH_4 – 25; N_2O – 298.

Greenhouse Gas Reduction Regulations and Plans

The primary GHG reduction regulatory legislation and plans (applicable to the project) at the State, regional, and local levels are described below. Implementation of California's GHG reduction mandates is primarily under the authority of CARB at the State level.

Executive Order S-3-05: On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack

in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to the year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Executive Orders are not laws and can only provide the governor's direction to State agencies to act within their authority to reinforce existing laws.

Assembly Bill 32 – Global Warming Solution Act of 2006: The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that CARB develop and enforce regulations for the reporting and verification of Statewide GHG emissions. CARB is directed by AB 32 to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

Executive Order B-30-15: On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28-nation European Union. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions to 80 percent under 1990 levels by 2050.

Senate Bill 32: Signed into law by Governor Brown on September 8, 2016, Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a Statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

Assembly Bill 1279: Approved by Governor Newsom on September 16, 2022, AB 1279, the California Climate Crisis Act, declares the policy of the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and ensure that by 2045, Statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. AB 1279 anticipates achieving these policies through direct GHG emissions reductions, removal of CO_2 from the atmosphere (carbon capture), and an almost complete transition away from fossil fuels.

California Air Resources Board Scoping Plan: The Scoping Plan is a strategy CARB develops and updates at least once every five years, as required by AB 32. It lays out the transformations needed across our society and economy to reduce emissions and reach our climate targets. The current 2022 Scoping Plan is the third update to the original plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 mandate of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business as usual. The 2008 Scoping Plan included a mix of incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California's GHG targets. The 2013 Scoping Plan assessed progress toward achieving the 2020 mandate and made the case for addressing short-lived climate pollutants (SLCPs). The 2017 Scoping Plan also assessed the progress toward achieving the 2020

limit and provided a technologically feasible and cost-effective path to achieving the SB 32 mandate of reducing GHGs by at least 40 percent below 1990 levels by 2030.

On December 15, 2022, CARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels; further reductions in SLCPs; support for sustainable development; increased action on natural and working lands to reduce emissions and sequester carbon; and the capture and storage of carbon (CARB 2022).

SENSITIVE RECEPTORS

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution (sensitive receptors): adults over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptor locations. Examples of these sensitive receptor locations are residences, schools, hospitals, and daycare centers.

The closest existing sensitive receptor location to the project site is an existing residence located approximately 300 feet west of the project site. This is greater than the required 200-foot setback for off-site residences from commercial cannabis cultivation, as described in Article 27. 3 of the Lake County Zoning Ordinance. There are no schools located in the project vicinity.

METHODOLOGY AND ASSUMPTIONS

Criteria pollutant and precursor emissions, and GHG emissions for the project construction activities were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1. CalEEMod is a Statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify criteria pollutant emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The model calculates emissions of criteria pollutants, ozone precursors, and GHGs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A, C, and D (CAPCOA 2025). The input data and subsequent construction emission estimates for the proposed project are discussed below.

Construction Assumptions

Construction of the proposed project is anticipated to begin in April 2026 and be completed in October 2027. The construction activity schedule was estimated using data provided by the project engineer and

is outlined in Table 2, *Project Construction Schedule*, below. Per the project engineer, the new buildings would not be painted.

Table 2
PROJECT CONSTRUCTION SCHEDULE

Construction Activity	Construction Start Date	Construction End Date	Number of Working Days
Site Preparation	4/1/2026	5/12/2026	30
Grading	5/13/2026	6/23/2026	30
Underground Utilities (Trenching)	6/24/2026	9/30/2026	71
Building Construction	10/1/2026	10/31/2027	282

Source: CalEEMod Output (Attachment B)

Construction equipment for each construction activity was estimated based on CalEEMod defaults and the anticipated construction activities. Table 3, *Project Construction Equipment*, below, presents a summary of the assumed equipment that would be involved in each activity of construction. Off-highway trucks included in the modeling would be water trucks.

Table 3
PROJECT CONSTRUCTION EQUIPMENT

Construction Activity	Equipment	Number
Site Preparation	Rubber Tired Dozers	3
	Tractors/Loaders/Backhoes	4
	Off-Highway Trucks	1
Grading	Graders	1
	Excavators	2
	Tractors/Loaders/Backhoes	2
	Scrapers	2
	Rubber Tired Dozers	1
	Off-Highway Trucks	1
Underground Utilities (Trenching)	Excavators	1
	Tractors/Loaders/Backhoes	1
Building Construction	Forklifts	3
	Generator Sets	1
	Cranes	1
	Welders	1
	Tractors/Loaders/Backhoes	3

Source: CalEEMod Output (Attachment B)

Per the project engineer, no off-site export of debris, vegetation, or soil would be required. Construction emissions modeling assumes the implementation of dust mitigation (watering exposed areas twice per day). Worker, vendor, and hauling trips were estimated based on CalEEMod defaults.

Operational Assumptions

Operation of the proposed project would involve the continued cultivation of flowering cannabis plants within the six outdoor mature cultivation areas and the new cultivation of immature plants within the proposed nursery building. The proposed project would increase the maximum number of employees from 15 to 20 workers at any given time. However, this increase in employees would be minimal and would not result in a significant increase in vehicle trips related to current facility operations. Operation of the proposed project would not require new backup generators. The total annual water use on-site would be 107.37 AFY under the proposed project; however, this is inclusive of the 58.86 AFY of water used under existing cultivation conditions. Water sourced from public utilities results in GHG emissions from the energy required to source, treat, and transport the water over long distances. The existing and proposed annual water supply would be sourced from the two existing wells on the project site. Therefore, the change in water use and electricity used by the proposed project would be minimal in comparison to current facility operations. Therefore, changes in project operational emissions would be negligible compared to operational emissions from the existing facility. Therefore, project operational emissions were not quantified.

SIGNIFICANCE CRITERIA

Air Quality

According to Appendix G of the State CEQA Guidelines, a project would have a significant air quality environmental impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan; or
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard; or
3. Expose sensitive receptors to substantial pollutant concentrations; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Appendix G of the State CEQA Guidelines states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. As the County is designated as attainment or unclassified for all criteria air pollutants, the LCAQMD has not adopted specific CEQA thresholds relating to air quality. As the LCAQMD does not have standards for thresholds of significance for criteria air pollutants, the Bay Area Air Quality Management District (BAAQMD) thresholds have been used in this analysis as the basis to determine if mitigation should be implemented. BAAQMD's thresholds are based on the air quality within the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB is designated as nonattainment for several NAAQS and CAAQS.

The BAAQMD has adopted thresholds that lead agencies can use to determine the significance of a development project's short-term construction and long-term operational pollutant emissions. The

BAAQMD's 2022 thresholds of significance for criteria pollutants and precursors are shown in Table 4, *BAAQMD Significance Thresholds*.

Table 4
BAAQMD SIGNIFICANCE THRESHOLDS

Pollutant	Construction	Operation	
	Average Daily Emissions (pounds/day)	Average Daily Emissions (pounds/day)	Maximum Annual Emissions (tons/year)
Reactive Organic Gasses (ROG)	54	54	10
Nitrogen Oxides (NO_X)	54	54	10
Particulate Matter Exhaust (PM_{10})	82	82	15
Fine Particulate Matter Exhaust ($PM_{2.5}$)	54	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	BMPs[1]	none	none
Local Carbon Monoxide (CO)	none	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
Sulfur Oxides (SO_X)	none	none	none

Source: BAAQMD 2023
ppm = part per million; BMP = Best Management Practices
[1] For construction fugitive dust, rather than a numeric threshold BAAQMD recommends that lead agencies consider projects which implement the Basic Construction Best Management Practices to have a less than significant impact related to fugitive dust.

Greenhouse Gas Emissions

Given the relatively small levels of emissions generated by a project in relationship to the total amount of GHG emissions generated on a national or global basis, individual projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts. According to Appendix G of the State CEQA Guidelines, the following criteria may be considered in establishing the significance of GHG emissions:

Would the project:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

The determination of significance is governed by CEQA Guidelines 15064.4, entitled "Determining the Significance of Impacts from Greenhouse Gas Emissions." CEQA Guidelines Section 15064.4(a) states, "[t]he determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to … [use a quantitative model or qualitative

model]" (emphasis added). In turn, CEQA Guidelines Section 15064.4(b) clarifies that a lead agency should consider "Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project." Therefore, consistent with CEQA Guidelines Section 15064.4, the GHG emissions analysis for the project appropriately relies upon a threshold based on the exercise of careful judgement and is believed to be appropriate in the context of this project. The LCAQMD has not adopted specific CEQA thresholds relating to GHG emissions; therefore, the BAAQMD thresholds have been used in this analysis as the basis to determine if mitigation should be implemented.

On April 20, 2022, the BAAQMD Board of Directors adopted revised CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans, described fully in an associated justification report. Rather than quantitative thresholds for emissions of GHG, BAAQMD has adopted thresholds based on performance standards. Land use development projects must include either Threshold A or Threshold B (BAAQMD 2023):

A. Projects must include, at a minimum, the following project design elements:

    1. Buildings

        a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).

        b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

    2. Transportation

        a. Achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:

            i. Residential projects: 15 percent below the existing VMT per capita

            ii. Office projects: 15 percent below the existing VMT per employee

            iii. Retail projects: no net increase in existing VMT

        b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

AIR QUALITY IMPACT ANALYSIS

(1) Conflict with or obstruct implementation of the applicable air quality plan?

Less than significant impact with mitigation. Consistency with the air quality plan is determined by whether the project would hinder the implementation of control measures identified in the air quality plan or would result in the growth of population or employment that is not accounted for in local and regional planning. The project site is located within the LCAB, which is under the jurisdiction of the LCAQMD. As shown in Table 1, Lake County is designated as attainment or unclassified with respect to the NAAQS and CAAQS. Due to the fact that the LCAB is classified as attainment with respect to the NAAQS and CAAQS, LCAQMD has not adopted an air quality plan; however, the LCAQMD uses its rules and regulations to address air quality standards.

According to the Water Availability Analysis prepared for the proposed project (included as Attachment C), the immediate vicinity of the project site has mapped to consist of Andesite of Split Top Ridge (ast), Rhyodacite of Diener Drive (dd), Older dacite of Mount Hannah (doh), Andesite of Salmina Flat (asf), and Rhyodacite of Seigler Mountain (ds) underlain in some areas by Pyroclastic deposits (rbp) and further underlain by the bedrock units of Jurassic Serpentinite (Jsp) and Great Valley Sequence (KJgv; EBA Engineering 2025). However, per the County Parcel Viewer, the project site does not contain Serpentine Soils (County 2025). Therefore, the proposed project would pose no threat of asbestos exposure during the construction or operation of the proposed project.

Additionally, according to the Lake County Zoning Ordinance section on Commercial Cannabis Cultivation (Section 27.11), air quality must be addressed in the Property Management Plan. The intent of addressing this is to ensure that "all cannabis permittees shall not degrade the County's air quality as determined by the Lake County Air Quality Management District" and that "permittees shall identify any equipment or activity that may cause, or potentially cause the issuance of air contaminates including odor and shall identify measures to be taken to reduce, control or eliminate the issuance of air contaminants, including odors". This includes obtaining an Authority to Construct (A/C) Permit pursuant to LCAQMD rules and regulations. Mitigation Measure AQ-1 would be implemented which requires preparation of a Property Management Plan to address air quality impacts and requires that an A/C Permit would be obtained before construction. With the implementation of Mitigation Measure AQ-1, the impact would be less than significant.

Mitigation Measure

Mitigation Measure AQ-1: Preparation of a Property Management Plan

Before obtaining the necessary permits and/or approvals for any phase of the project, the project applicant shall prepare a Property Management Plan and obtain an Authority to Construct (A/C) Permit for all operations and for any diesel-powered equipment and/or other equipment with potential for air emissions or provide proof that a permit is not needed.

(2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?

Less than significant impact with mitigation. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in the nonattainment of ambient air quality standards. Instead, the potential for a project's individual emissions to contribute to existing cumulatively significant adverse air quality impacts is evaluated.

Lake County is designated as attainment or unclassified with respect to the NAAQS and CAAQS and, therefore, has not adopted specific CEQA thresholds relating to air quality. As the LCAQMD does not have standards for thresholds of significance for criteria air pollutants, BAAQMD thresholds have been used in this analysis as the basis to determine if mitigation should be implemented. The BAAQMD has adopted thresholds that lead agencies can use to determine the significance of a development project's short-term construction and long-term operational pollutant emissions.

Construction Emissions

CalEEMod version 2022.1 was used to quantify project construction-period emissions, as discussed in *Methodology and Assumptions*, above. The model output sheets are included in Attachment B to this memo. Construction of the proposed project is anticipated to begin in April 2026 and be completed in October 2027. The quantity, duration, and intensity of construction activity influence the amount of construction emissions and related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction activity is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of: (1) a more modern and cleaner-burning construction equipment fleet mix than assumed in CalEEMod; and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

The project's construction emissions were estimated using CalEEMod, as described above. The emissions generated from construction activities include:

- Dust (including PM_{10} and $PM_{2.5}$), primarily from fugitive sources such as soil disturbance and vehicle travel over paved and unpaved surfaces; and

- Combustion emissions of air pollutants (including ROG, NO_X, PM_{10}, $PM_{2.5}$, CO, and sulfur oxides [SO_X]), primarily from the operation of heavy off-road equipment and haul trucks.

The project's construction period emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ are compared to BAAQMD's daily construction thresholds in Table 5, *Daily Construction Criteria Pollutant and Precursor Emissions*. The BAAQMD does not have a recommended threshold for construction-generated CO and SO_X. The emissions estimate assumes the implementation of the BAAQMD recommended Basic Construction Mitigation Measures (BCMMs) for fugitive PM_{10} and $PM_{2.5}$, listed in Mitigation Measure AQ-2, below, specifically watering exposed areas a minimum of twice per day and enforcing a 15 miles per hour speed limit on unpaved surfaces.

Table 5
Daily CONSTRUCTION CRITERIA POLLUTANT AND PRECURSOR EMISSIONS

Activity	ROG	NO_X	CO	SO_X	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	3.7	31.8	33.1	0.1	83.9	1.3	11.6	1.2
Grading	3.6	29.9	32.1	0.1	89.3	1.2	10.1	1.1
Underground Utilities (Trenching)	0.3	2.3	3.7	<0.1	19.1	0.1	1.9	0.1
Building Construction	1.3	10.0	15.1	<0.1	164.3	0.3	16.4	0.3
Maximum Daily	**3.7**	**31.8**	**33.1**	**0.1**	**164.3**	**1.3**	**16.4**	**1.2**
BAAQMD Daily Thresholds	*54*	*54*	*none*	*none*	*BMPs*	*84*	*BMPs*	*54*
Exceed Daily Threshold?	***No***	***No***	***No***	***No***	***No***	***No***	***No***	***No***

CalEEMod (output data is provided in Attachment B); Thresholds BAAQMD 2023a
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 5, the project's daily construction emissions of criteria pollutants and precursors would not exceed BAAQMD's thresholds. However, because the BAAQMD considers fugitive dust emissions to be significant if the BCMMs are not implemented, Mitigation Measure AQ-2 would require the implementation of the BCMMs.

Operational Emissions

As outlined in *Methodology and Assumptions*, the operation of the proposed project would involve the continued cultivation of flowering cannabis plants within the six outdoor mature cultivation areas and the new cultivation of immature plants within the proposed nursery building. The proposed project would increase the maximum number of employees from 15 to 20 workers at any given time. However, this increase in employees would be minimal and would not result in a significant increase in vehicle trips related to current facility operations. Operation of the proposed project would not require new backup generators. The total annual water use on-site would be 107.37 AFY under the proposed project; however, this is inclusive of the 58.86 AFY of water used under existing cultivation conditions. Water sourced from public utilities results in GHG emissions from the energy required to source, treat, and transport the water over long distances. The existing and proposed annual water supply would be sourced from the two existing wells on the project site. Therefore, the change in water use and electricity used by the proposed project would be minimal in comparison to current facility operations. Changes in project operational emissions would be negligible compared to operational emissions from the existing facility. Therefore, project operational emissions were not quantified.

As outlined in question (1), Mitigation Measure AQ-1 would be implemented, which requires the preparation of a Property Management Plan to address air quality impacts and requires that an A/C Permit be obtained for all operational activities.

Impact Summary

With the implementation of Mitigation Measure AQ-1 and Mitigation Measure AQ-2, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project

region is nonattainment under an applicable federal or State ambient air quality standard during either construction or operation. The impact would be less than significant with mitigation.

Mitigation Measures

Mitigation Measure AQ-1: Preparation of a Property Management Plan

Mitigation Measure AQ-2: Basic Construction Mitigation Measures

Before obtaining the necessary permits and/or approvals for any phase of the project, the County shall specify on all grading, building, and other construction permits for the project, implementation of the following Basin Construction Mitigation Measures:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.

(3) Expose sensitive receptors to substantial pollutant concentrations?

Less than significant impact with mitigation. CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution (sensitive receptors): adults over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as

asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptor locations. Examples of these sensitive receptor locations are residences, schools, hospitals, and daycare centers.

The closest existing sensitive receptor location to the project site is an existing residence located approximately 300 feet west of the project site. This is greater than the required 200-foot setback for off-site residences from commercial cannabis cultivation, as described in Article 27.3 of the Lake County Zoning Ordinance. There are no schools located in the project vicinity.

Construction Emissions

Toxic Air Contaminants (DPM)

Construction of the project would result in emissions of DPM from the use of construction equipment on the project site. The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has to the substance; a longer exposure period to a fixed quantity of emissions would result in higher health risks. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents based on guidance from OEHHA) and are best suited for the evaluation of long-duration TAC emissions with predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities. Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime (OEHHA 2015).

Concentrations of mobile source DPM emissions disperse rapidly and are typically reduced by 70 percent at approximately 500 feet (CARB 2005). Considering the dispersive nature of DPM and the fact that construction activities with intensive use of heavy diesel-powered construction equipment would be intermittent and would occur for short durations, it is not anticipated that construction of the project would not expose sensitive receptors to substantial DPM concentrations. However, to further reduce DPM concentrations, Mitigation AQ-3 would be implemented, which requires diesel equipment to be used in compliance with State registration requirements.

Fugitive Dust

The generation of dust (fugitive PM_{10} and $PM_{2.5}$) during construction activities could adversely affect sensitive receptors and construction workers. As outlined in question (2), construction of the project would not result in emissions of PM in excess of the BAAQMD thresholds. However, the construction emissions estimate assumes the implementation of the BAAQMD-recommended BCMMs, listed in Mitigation Measure AQ-2. Mitigation Measure AQ-2 would be implemented, which requires the implementation of the BCMMs. Additionally, the project applicant would be required to prepare and submit a Dust Control Plan to the LCAQMD before obtaining the necessary permits and/or approvals for

any phase of the project. Mitigation Measure AQ-4 would be implemented, which requires the preparation of a Dust Control Plan.

Hazardous or Toxic Materials

Pesticide applications would be used during the growing season; however, they would be applied carefully to individual plants. The cultivation area would be surrounded by a fence to prevent off-site drift of pesticides. The Property Management Plan would include a description of the application of pesticides during the growing season. Additionally, the project applicant would be required to maintain and provide the LCAQMD with records of all hazardous or toxic materials used in construction to update the Air Toxic Emissions Inventory. Mitigation Measure AQ-5 would be implemented, which requires records of all hazardous or toxic materials used during construction.

Asbestos Containing Material

As outlined in question (1), according to the Water Availability Analysis prepared for the proposed project (included as Attachment C), the immediate vicinity of the project site has been mapped to consist of Andesite of Split Top Ridge (ast), Rhyodacite of Diener Drive (dd), Older dacite of Mount Hannah (doh), Andesite of Salmina Flat (asf), and Rhyodacite of Seigler Mountain (ds) underlain in some areas by Pyroclastic deposits (rbp) and further underlain by the bedrock units of Jurassic Serpentinite (Jsp) and Great Valley Sequence (KJgv; EBA Engineering 2025). However, per the County Parcel Viewer, the project site does not contain Serpentine Soils (County 2025). Therefore, the proposed project would pose no threat of asbestos exposure during the construction or operation of the proposed project.

Operational Emissions

Operation of the proposed project would not require the use of new stationary sources of TACs, such as backup generators. Additionally, the use of diesel-powered equipment for occasional project operational maintenance would be similar to maintenance equipment used for the existing water system. However, Mitigation AQ-3 would be implemented, which requires diesel equipment to be used in compliance with State registration requirements.

Hazardous or Toxic Materials

The project applicant would be required to maintain and provide the LCAQMD with records of all hazardous or toxic materials used during project operation to update the Air Toxic Emissions Inventory. Mitigation Measure AQ-4 would be implemented, which requires records of all hazardous or toxic materials used during the operation of the project.

Impact Summary

With the implementation of Mitigation Measures AQ-2 through AQ-5, the construction and operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations, and the impact would be less than significant.

Mitigation Measures

Mitigation Measure AQ-2: Basic Construction Mitigation Measures

Mitigation Measure AQ-3: Diesel Equipment Compliance

All mobile diesel equipment used shall be in compliance with state registration requirements. Portable and stationary diesel-powered equipment shall meet all federal, State, and local requirements, including the requirements of the State Air Toxic Control Measures for compression ignition engines. Additionally, the project applicant shall notify the Lake County Air Quality Management District before beginning construction activities and before engine use.

Mitigation Measure AQ-4: Preparation of a Dust Control Plan

Before obtaining the necessary permits and/or approvals for any phase of the project, the project applicant shall prepare and submit a Dust Control Plan to the Lake County Air Quality Management District. The following measures shall be included in the Dust Control Plan:

a) During construction, emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area, shall be controlled so that dust does not remain visible in the atmosphere beyond the boundary line of the emission source.

b) When wind speeds result in dust emissions crossing property lines, and despite the application of dust control measures, grading and earthmoving operations shall be suspended, and inactive disturbed surface areas shall be stabilized.

c) Fugitive dust generated by active operations, open storage piles, or from a disturbed surface area shall not result in such opacity as to obscure an observer's view to a degree equal to or greater than does smoke as dark or darker in shade as that designated as No. 2 on the Ringlemann Chart (or 40 percent opacity).

d) All exposed soils be watered as needed to prevent dust density as described above and to prevent dust from visibly exiting the property.

e) All haul trucks transporting soil, sand, or loose material off-site shall be covered.

f) All vehicle speeds on unpaved roads shall be limited to 25 mph.

g) During construction, the contractor shall, where feasible, utilize existing power sources (e.g., power poles) or clean fuel (i.e., gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.

h) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. Signs shall be posted in the designated

queuing areas of the construction site to remind off-road equipment operators that idling time is limited to a maximum of five minutes.

Mitigation Measure AQ-5: Records of Hazardous and Toxic Materials

The project applicant shall maintain records of all hazardous or toxic materials used, including a Material Safety Data Sheet (MSDS) for all volatile organic compounds utilized, including cleaning materials. Said information shall be made available upon request and/or the ability to provide the Lake County Air Quality Management District with such information to complete an updated Air Toxic Emissions Inventory.

(4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than significant impact with mitigation. As outlined under *Sensitive Receptors*, the closest existing sensitive receptor location to the project site is an existing residence located approximately 300 feet west of the project site. This is greater than the required 200-foot setback for off-site residences from commercial cannabis cultivation, as described in Article 27.3 of the Lake County Zoning Ordinance.

The existing cannabis cultivation facility currently implements an odor control plan that limits and controls the cannabis odor such that it is undetectable outside of the premises. As part of the Property Management Plan, required to be prepared under Mitigation Measure AQ-1, an Odor Control Program will be prepared. The Odor Control Program would identify equipment or activity that may cause or potentially cause the issuance of air contaminants including odors, and identify measures to be taken to reduce, control, or eliminate the issuance of air contaminants, including odors. With implementation of Mitigation Measure AQ-1, which requires preparation of a Property Management Plan and an Odor Control Program, the project would not result in other emissions adversely affecting a substantial number of people, and the impact would be less than significant.

Mitigation Measure

Mitigation Measure AQ-1: Preparation of a Property Management Plan

GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

(1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than significant impact with mitigation.

Construction Emissions

Construction of the proposed project is anticipated to begin April of 2026 and be completed in October 2027. Construction GHG emission sources include construction equipment exhaust, on-road hauling trucks exhaust, vendor vehicle exhaust, and worker commuting vehicle exhaust. Construction GHG emissions were estimated using CalEEMod version 2022.1. The BAAQMD has not adopted thresholds of significance for construction-period GHG emissions. The project's estimated total and amortized short-

term construction GHG emissions are shown in Table 6, *Construction GHG Emissions*. The amortized construction GHG emissions are included with the operational GHG emissions, below.

Table 6
CONSTRUCTION GHG EMISSIONS

Year	Emissions ($MT CO_2e$)
2026	310
2027	294
Total	***604***
Amortized Construction Emissions (30 years)	***20***

Source: CalEEMod (output data is provided in Attachment B)

Operational Emissions

As outlined in *Methodology and Assumptions*, operation the proposed project would involve the continued cultivation of flowering cannabis plants within the six outdoor mature cultivation areas and the new cultivation of immature plants within the proposed nursery building. The proposed project would increase the maximum number of employees from 15 to 20 workers at any given time. However, this increase in employees would be minimal and would not result in a significant increase in vehicle trips related to current facility operations. Operation of the proposed project would not require new backup generators. The total annual water use on-site would be 107.37 AFY under the proposed project; however, this is inclusive of the 58.86 AFY of water used under existing cultivation conditions. Water sourced from public utilities results in GHG emissions from the energy required to source, treat, and transport the water over long distances. The existing and proposed annual water supply would be sourced from the two existing wells on the project site. Therefore, the change in water use and electricity used by the proposed project would be minimal in comparison to current facility operations. Overall, the changes in project operational emissions would be negligible compared to operational emissions from the existing facility and project operational emissions were not quantified.

Compliance with BAAQMD Performance Standard-Based Threshold A

As described under *Significance Criteria*, BAAQMD has adopted performance standard-based thresholds rather than quantitative GHG emissions thresholds. LCAQMD has not adopted thresholds of significance for GHG emissions; therefore, the significance of the project's GHG emissions is determined using the BAAQMD performance standard-based Threshold A described under *Significance Criteria*:

A.1.a. No Natural Gas – The project will not include natural gas appliances or natural gas plumbing.

The proposed project would not include natural gas appliances or natural gas plumbing. Therefore, the project would comply with A.1.a. No Natural Gas.

A.1.b. Wasteful, Inefficient, Or Unnecessary Energy Usage – The project will not result in wastewater, inefficient, or unnecessary energy usage.

The project would be required to comply with all applicable Couty and State green building measures, including the State Building Energy Efficiency Standards – Title 24, Part 6, and Part 11 (CEC 2022).

Additionally, unnecessary consumption of energy resources during construction would be avoided through restriction of vehicle idling times and proper maintenance of construction equipment, as required in Mitigation Measure AQ-2 and Mitigation Measure AQ-4. Therefore, the project would comply with A.1.b. Wasteful, Inefficient, or Unnecessary Energy Usage, with implementation of Mitigation Measure AQ-2 and AQ-4.

A.2.a. VMT Reduction – Achieve a reduction in project-generated VMT below the regional average.

According to the Governor's Office of Land Use and Climate Innovation (LCI), formerly the Office of Planning and Research, Technical Advisory on Evaluating Transportation Impacts in CEQA, small land use projects that would generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant impact related to VMT (LCI 2018). Construction of the proposed project would involve vehicle trips associated with construction equipment, materials, and workers to and from the project site. Additionally, construction would require heavy construction equipment that would be transported to and from the project site; however, it is expected that the majority of this equipment would remain on-site until construction is completed.

Operation of the proposed project would generate vehicle trips from employees and delivery/pickup vehicles entering and leaving the project site, similar to current operations. The proposed project would increase the maximum number of employees from 15 to 20 workers at any given time. However, this increase in employees would be minimal and would not result in a significant increase in vehicle trips related to facility operations.

As it is anticipated that the number of trips generated by the proposed project during construction and operation of the proposed project would be less than the 110 trips per day threshold established by OPR, the project would comply with A.2.a, VMT Reduction.

A.2.b. Electric Vehicle Parking – Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2 standards.

No new parking areas or spaces are proposed under the project. Therefore, the project would comply with A.2.b, Electric Vehicle Parking.

Impact Summary

The proposed project would comply with the BAAQMD Threshold A performance standards with implementation of Mitigation Measure AQ-2 and AQ-4, and therefore would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. With implementation of Mitigation Measure AQ-2 and AQ-4, impact would be less than significant.

Mitigation Measure

Mitigation Measure AQ-2: Basic Construction Mitigation Measures

Mitigation Measure AQ-4: Preparation of a Dust Control Plan

(2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Less than significant impact. There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 requires further reductions of 40 percent below 1990 levels by 2030. AB 1279 requires the State to achieve net zero GHG emissions no later than 2045. The mandates of AB 32, SB 32, and AB 1279 are implemented at the State level by the CARB's Scoping Plan. Because the proposed project's operational year is post-2020, the project aims to reach the quantitative goals set by SB 32 and AB 1279. Statewide plans and regulations such as GHG emissions standards for vehicles and transportation fuels, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the Statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project would not conflict with those plans and regulations.

Lake County has not adopted any specific GHG reduction strategies or climate action plans. As noted in question (1) above, the proposed project would comply with the BAAQMD Threshold A performance standards, and therefore would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. As a result, the proposed project would not conflict with the GHG reduction objectives of the State's Scoping Plan, including net zero GHG emissions by 2045, mandated by AB 1279. The impact would be less than significant.

CONCLUSION

As described above, with the implementation of Mitigation Measure AQ-1 and Mitigation Measure AQ-2, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard during either construction or operation. Additionally, with implementation of Mitigation Measures AQ-2 through AQ-5, construction and operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations, and the impact would be less than significant. As part of the Property Management Plan, required to be prepared under Mitigation Measure AQ-1, an Odor Control Program will be prepared. With implementation of Mitigation Measure AQ-1, which requires preparation of a Property Management Plan and an Odor Control Program, the project would not result in other emissions adversely affecting a substantial number of people. Air quality impacts would be less than significant with implementation of Mitigation Measures AQ-1 through AQ-5.

LCAQMD has not adopted thresholds of significance for GHG emissions; therefore, the significance of the project's GHG emissions is determined using the BAAQMD performance standard-based Threshold A. Additionally, Lake County has not adopted any specific GHG reduction strategies or climate action

plans. The proposed project would comply with the BAAQMD Threshold A performance standards, and therefore would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. As a result, the proposed project would not conflict with the GHG reduction objectives of the State's Scoping Plan, including net zero GHG emissions by 2045, mandated by AB 1279. GHG emission impacts would be less than significant with implementation of Mitigation Measure AQ-2 and AQ-4.

Sincerely,

Victor Ortiz
Senior Air Quality Specialist

Julia Pano
Environmental Project Manager

Attachments:

Attachment A: Figures
Attachment B: CalEEMod Output
Attachment C: Water Availability Analysis

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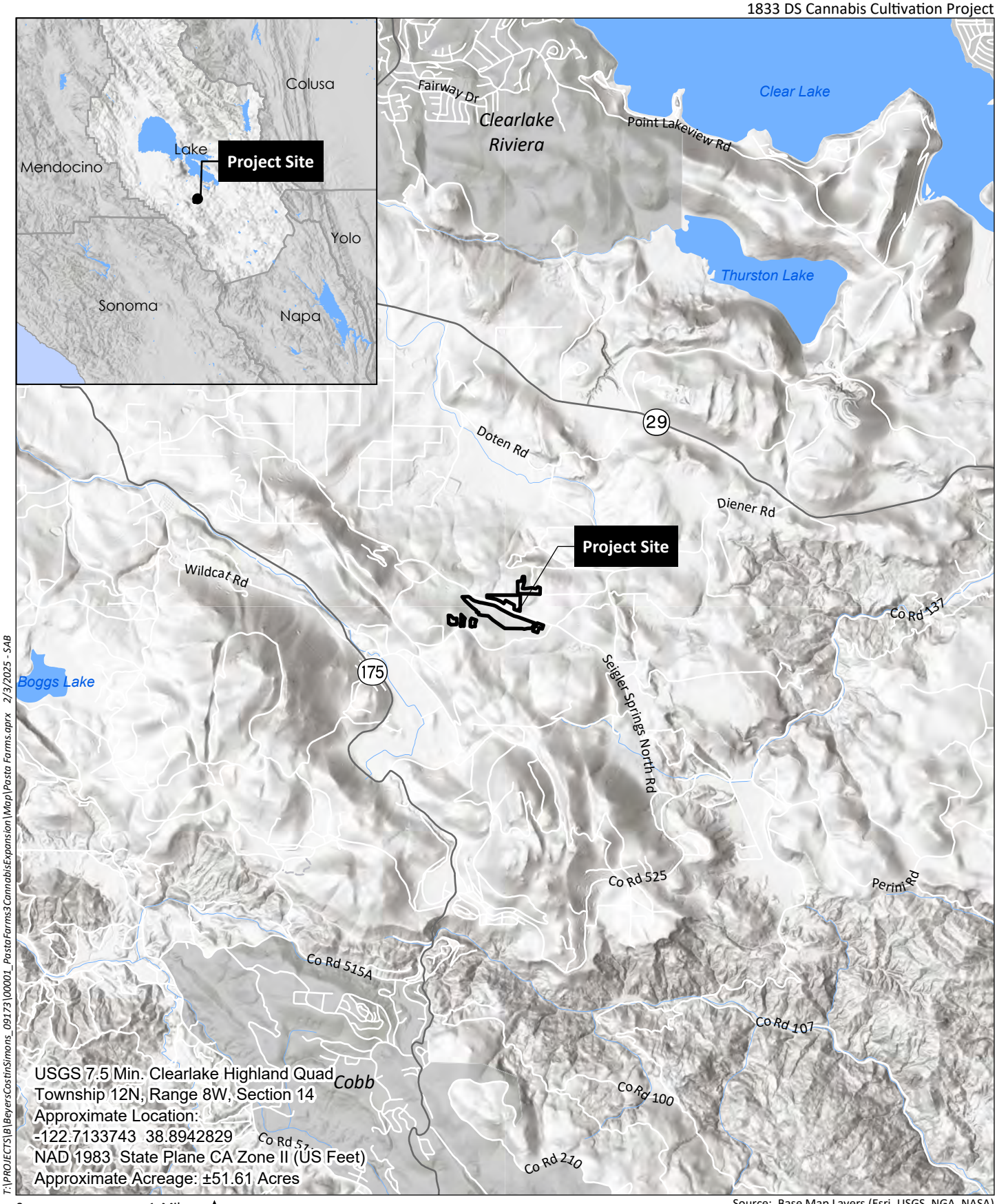
Attachment A

Figures



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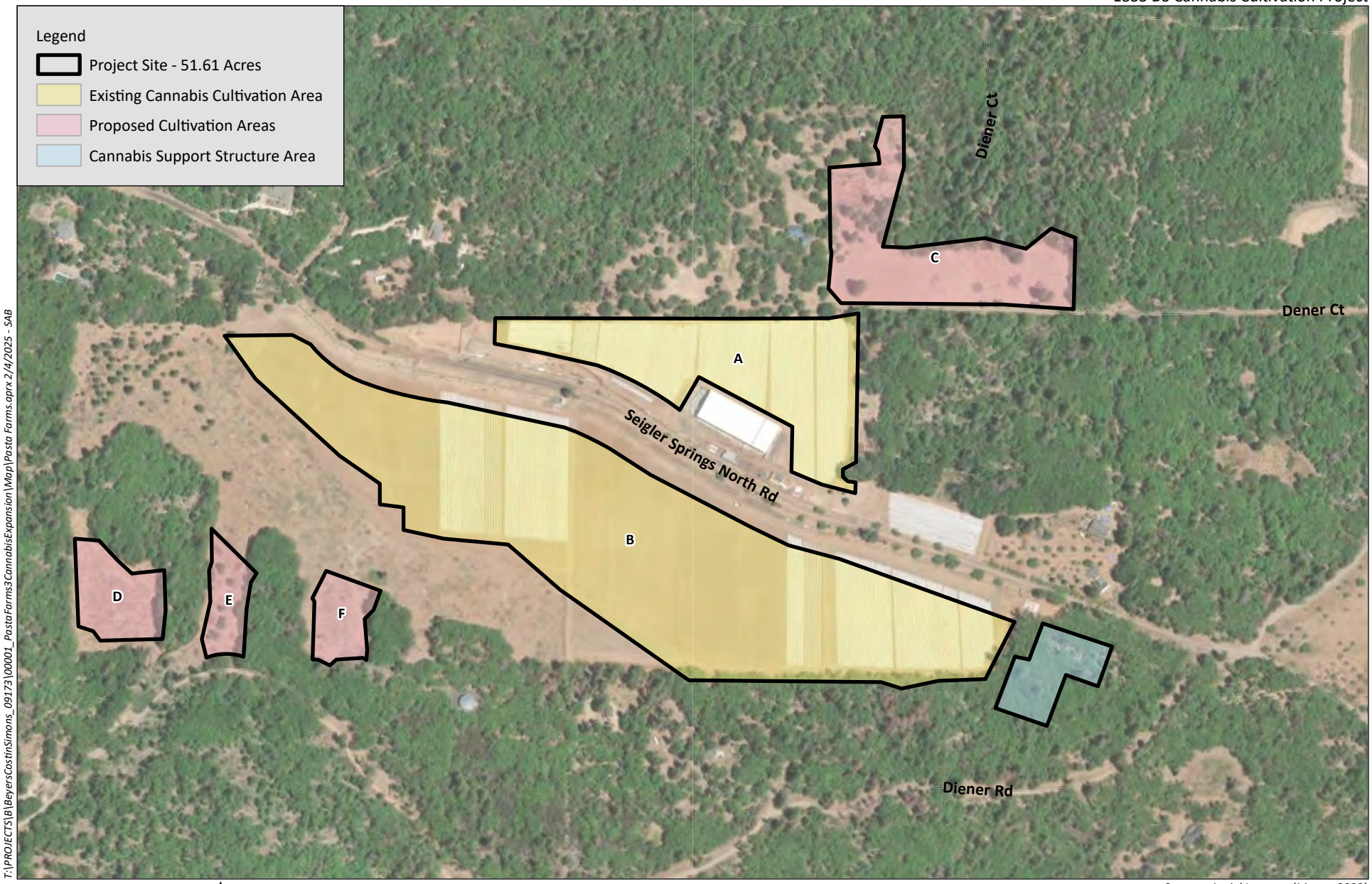
HELIX Environmental Planning

Site and Vicinity Map

Figure 1

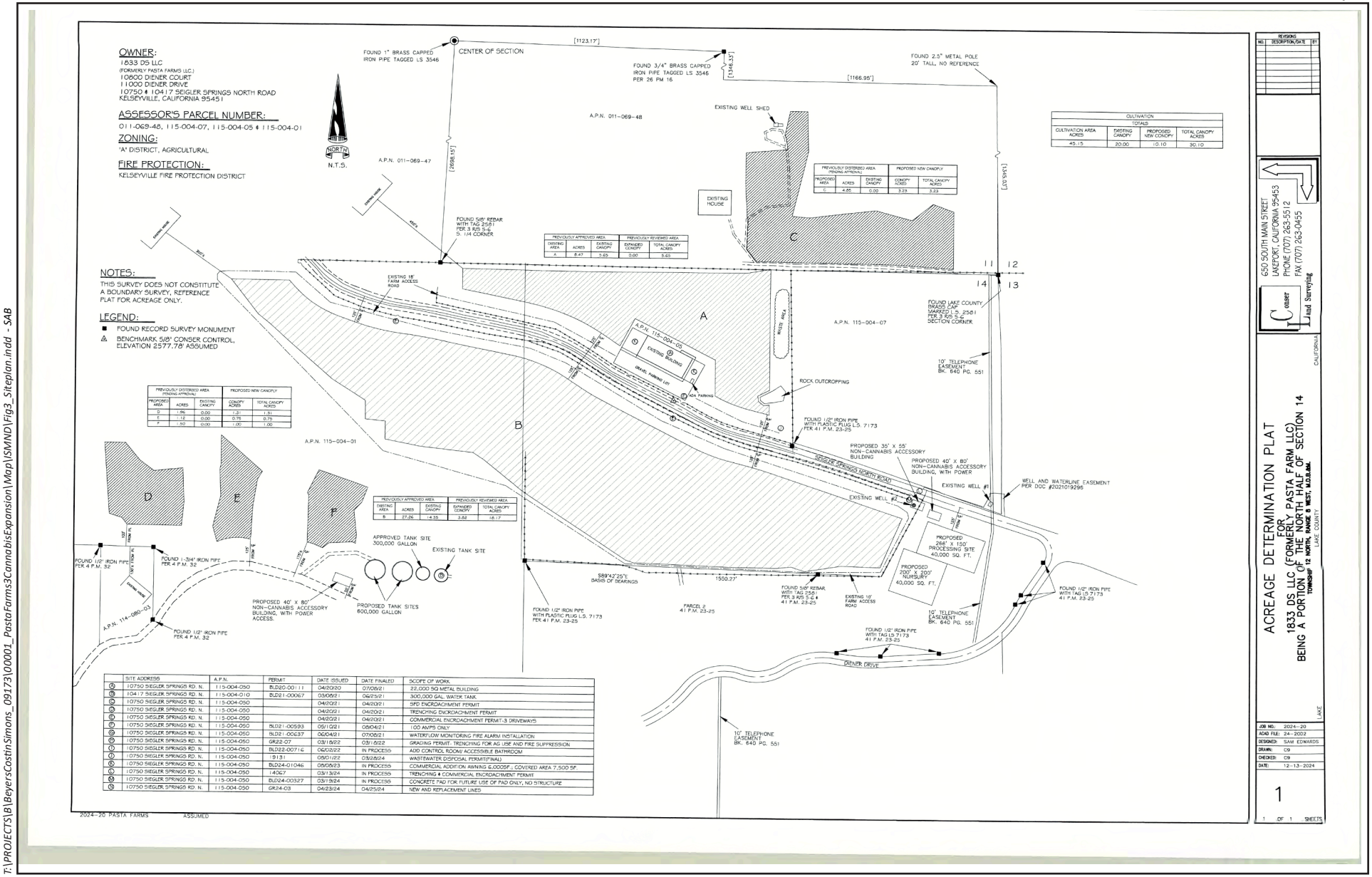


Source: Aerial Imagery (Maxar, 2023)

HELIX Environmental Planning

Aerial Map

Figure 2



	SITE ADDRESS	A.P.N.	PERMIT	DATE ISSUED	DATE FINALED	SCOPE OF WORK
A	10750 SIEGLER SPRINGS RD. N.	115-004-050	BLD20-00111	04/20/20	07/06/21	22,000 SQ METAL BUILDING
B	10417 SIEGLER SPRINGS RD. N.	115-004-010	BLD21-00067	03/06/21	06/25/21	300,000 GAL. WATER TANK
C	10750 SIEGLER SPRINGS RD. N.	115-004-050		04/20/21	04/20/21	SFD ENCROACHMENT PERMIT
D	10750 SIEGLER SPRINGS RD. N.	115-004-050		04/20/21	04/20/21	TRENCHING ENCROACHMENT PERMIT
E	10750 SIEGLER SPRINGS RD. N.	115-004-050		04/20/21	04/20/21	COMMERCIAL ENCROACHMENT PERMIT-3 DRIVEWAYS
F	10750 SIEGLER SPRINGS RD. N.	115-004-050	BLD21-00593	05/10/21	08/04/21	100 AMPS ONLY
G	10750 SIEGLER SPRINGS RD. N.	115-004-050	BLD21-00637	06/04/21	07/06/21	WATERFLOW MONITORING FIRE ALARM INSTALLATION
H	10750 SIEGLER SPRINGS RD. N.	115-004-050	GR22-07	03/15/22	03/1/022	GRADING PERMIT- TRENCHING FOR AG USE AND FIRE SUPPRESSION
I	10750 SIEGLER SPRINGS RD. N.	115-004-050	BLD22-00716	06/02/22	IN PROCESS	ADD CONTROL ROOM/ ACCESSIBLE BATHROOM
J	10750 SIEGLER SPRINGS RD. N.	115-004-050	19131	05/01/22	03/26/24	WASTEWATER DISPOSAL PERMIT(FINAL)
K	10750 SIEGLER SPRINGS RD. N.	115-004-050	BLD24-01046	05/06/23	IN PROCESS	COMMERCIAL ADDITION AWNING 6,000SF ; COVERED AREA 7,500 SF
L	10750 SIEGLER SPRINGS RD. N.	115-004-050	14067	03/1/3/24	IN PROCESS	TRENCHING # COMMERCIAL ENCROACHMENT PERMIT
M	10750 SIEGLER SPRINGS RD. N.	115-004-050	BLD24-00327	03/19/24	IN PROCESS	CONCRETE PAD FOR FUTURE USE OF PAD ONLY, NO STRUCTURE
N	10750 SIEGLER SPRINGS RD. N.	115-004-050	GR24-03	04/23/24	04/25/24	NEW AND REPLACEMENT LINES

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HELIX Environmental Planning

Site Plan

Figure 3

Attachment B

CalEEMod Output

Pasta Farm Detailed Report

Table of Contents

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Pasta Farm
Construction Start Date	4/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	9.20
Location	10750 Seigler Springs Rd, Kelseyville, CA 95451, USA
County	Lake
City	Unincorporated
Air District	Lake County AQMD
Air Basin	Lake County
TAZ	238
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Manufacturing	80.0	1000sqft	51.6	80,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.72	31.8	33.1	0.07	1.33	164	165	1.23	16.4	16.7	8,145
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.32	10.5	15.1	0.03	0.38	164	165	0.35	16.4	16.8	2,999
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.89	7.41	8.85	0.02	0.29	95.3	95.5	0.27	9.53	9.71	1,871
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	1.35	1.61	< 0.005	0.05	17.4	17.4	0.05	1.74	1.77	310

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
2026	3.72	31.8	33.1	0.07	1.33	89.3	90.5	1.23	11.6	12.8	8,145
2027	1.26	10.0	15.1	0.03	0.34	164	165	0.31	16.4	16.7	2,997
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—

2026	1.32	10.5	15.1	0.03	0.38	164	165	0.35	16.4	16.8	2,999
2027	1.26	10.0	15.0	0.03	0.34	164	165	0.31	16.4	16.7	2,988
Average Daily	—	—	—	—	—	—	—	—	—	—	—
2026	0.89	7.41	8.75	0.02	0.29	46.3	46.6	0.27	4.98	5.25	1,871
2027	0.74	5.99	8.85	0.02	0.20	95.3	95.5	0.19	9.53	9.71	1,773
Annual	—	—	—	—	—	—	—	—	—	—	—
2026	0.16	1.35	1.60	< 0.005	0.05	8.46	8.51	0.05	0.91	0.96	310
2027	0.14	1.09	1.61	< 0.005	0.04	17.4	17.4	0.03	1.74	1.77	294

3. Construction Emissions Details

3.1. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.59	31.7	31.8	0.06	1.33	—	1.33	1.23	—	1.23	6,654
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.61	2.61	0.01	0.11	—	0.11	0.10	—	0.10	547
Dust From Material Movement	—	—	—	—	—	0.63	0.63	—	0.32	0.32	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.48	0.48	< 0.005	0.02	—	0.02	0.02	—	0.02	90.5
Dust From Material Movement	—	—	—	—	—	0.11	0.11	—	0.06	0.06	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.09	1.31	0.00	0.00	76.2	76.2	0.00	7.62	7.62	165
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.09	0.00	0.00	6.11	6.11	0.00	0.61	0.61	12.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	1.11	1.11	0.00	0.11	0.11	2.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.49	29.8	30.5	0.07	1.21	—	1.21	1.11	—	1.11	7,959
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.45	2.51	0.01	0.10	—	0.10	0.09	—	0.09	654
Dust From Material Movement	—	—	—	—	—	0.30	0.30	—	0.12	0.12	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.45	0.46	< 0.005	0.02	—	0.02	0.02	—	0.02	108
Dust From Material Movement	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.10	1.47	0.00	0.00	85.7	85.7	0.00	8.57	8.57	185
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.11	0.00	0.00	6.87	6.87	0.00	0.69	0.69	14.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	1.25	1.25	0.00	0.13	0.13	2.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	1.77	2.33	< 0.005	0.07	—	0.07	0.06	—	0.06	433
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.32	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	71.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.15	2.02	0.00	0.00	128	128	0.00	12.8	12.8	269
Vendor	0.02	0.53	0.16	< 0.005	< 0.005	36.2	36.2	< 0.005	3.63	3.63	325
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.35	0.00	0.00	22.5	22.5	0.00	2.25	2.25	46.8
Vendor	< 0.005	0.10	0.03	< 0.005	< 0.005	6.36	6.36	< 0.005	0.64	0.64	58.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.06	0.00	0.00	4.10	4.10	0.00	0.41	0.41	7.75
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	1.16	1.16	< 0.005	0.12	0.12	9.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.61	5.59	7.70	0.01	0.20	—	0.20	0.18	—	0.18	1,431
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	1.02	1.40	< 0.005	0.04	—	0.04	0.03	—	0.03	237
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.14	2.02	0.00	0.00	128	128	0.00	12.8	12.8	272
Vendor	0.01	0.50	0.14	< 0.005	< 0.005	36.2	36.2	< 0.005	3.63	3.63	320
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.14	1.87	0.00	0.00	128	128	0.00	12.8	12.8	264
Vendor	0.01	0.50	0.15	< 0.005	< 0.005	36.2	36.2	< 0.005	3.63	3.63	319
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.09	1.06	0.00	0.00	74.3	74.3	0.00	7.42	7.42	152
Vendor	0.01	0.31	0.09	< 0.005	< 0.005	21.0	21.0	< 0.005	2.10	2.11	190
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.19	0.00	0.00	13.6	13.6	0.00	1.35	1.35	25.2
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	3.83	3.84	< 0.005	0.38	0.38	31.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Underground Utilities (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	2.23	3.40	< 0.005	0.07	—	0.07	0.06	—	0.06	499
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.43	0.66	< 0.005	0.01	—	0.01	0.01	—	0.01	97.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	16.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.33	0.00	0.00	19.1	19.1	0.00	1.90	1.90	41.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.06	0.00	0.00	3.61	3.61	0.00	0.36	0.36	7.53
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	0.66	0.66	0.00	0.07	0.07	1.25

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	4/1/2026	5/12/2026	5.00	30.0	—
Grading	Grading	5/13/2026	6/23/2026	5.00	30.0	—
Building Construction	Building Construction	10/1/2026	10/31/2027	5.00	282	—
Underground Utilities	Trenching	6/24/2026	9/30/2026	5.00	71.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Site Preparation	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45

Building Construction	Tractors/Loaders/Back	Diesel	Average	3.00	7.00	84.0	0.37
Underground Utilities	Excavators	Diesel	Average	1.00	8.00	40.0	0.50
Underground Utilities	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	10.1	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.35	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	22.5	10.1	LDA,LDT1,LDT2
Grading	Vendor	—	7.35	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	33.6	10.1	LDA,LDT1,LDT2
Building Construction	Vendor	13.1	7.35	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Underground Utilities	—	—	—	—
Underground Utilities	Worker	5.00	10.1	LDA,LDT1,LDT2
Underground Utilities	Vendor	—	7.35	HHDT,MHDT
Underground Utilities	Hauling	0.00	20.0	HHDT
Underground Utilities	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	45.0	0.00	—
Grading	—	—	90.0	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Manufacturing	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005

2027	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	17.6	annual days of extreme heat
Extreme Precipitation	21.1	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	31.0	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	3	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	3	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	16.8
AQ-PM	0.29
AQ-DPM	5.55
Drinking Water	56.2
Lead Risk Housing	11.2
Pesticides	66.5
Toxic Releases	0.00
Traffic	6.55
Effect Indicators	—
CleanUp Sites	83.0
Groundwater	42.6

Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	23.9
Solid Waste	35.7
Sensitive Population	—
Asthma	76.7
Cardio-vascular	49.2
Low Birth Weights	16.2
Socioeconomic Factor Indicators	—
Education	32.9
Housing	33.2
Linguistic	0.00
Poverty	43.5
Unemployment	40.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	37.944309
Employed	8.417810856
Median HI	34.53098935
Education	—
Bachelor's or higher	34.23585269
High school enrollment	100
Preschool enrollment	50.64801745
Transportation	—
Auto Access	72.44963429
Active commuting	35.45489542

Social	—
2-parent households	72.70627486
Voting	68.304889
Neighborhood	—
Alcohol availability	80.25150776
Park access	12.45989991
Retail density	5.171307584
Supermarket access	2.399589375
Tree canopy	96.72783267
Housing	—
Homeownership	73.93814962
Housing habitability	60.5800077
Low-inc homeowner severe housing cost burden	26.02335429
Low-inc renter severe housing cost burden	25.29192865
Uncrowded housing	86.21840113
Health Outcomes	—
Insured adults	38.07262928
Arthritis	0.0
Asthma ER Admissions	41.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	46.0
Cognitively Disabled	1.0
Physically Disabled	4.8

Heart Attack ER Admissions	39.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	64.5
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	90.3
SLR Inundation Area	0.0
Children	77.6
Elderly	4.6
English Speaking	77.5
Foreign-born	5.6
Outdoor Workers	29.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.4
Traffic Density	3.7
Traffic Access	0.0
Other Indices	—
Hardship	53.6
Other Decision Support	—
2016 Voting	64.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	21.0
Healthy Places Index Score for Project Location (b)	43.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Lot acreage and building size based on information from project engineer and site plan.
Construction: Construction Phases	Per the project engineer, no demolition would occur and the proposed buildings would not be painted.
Construction: Off-Road Equipment	Off Highway Truck = Water Truck. Underground Utilities equipment based on similar project type.

Attachment C

Water Availability Analysis

January 13, 2025

Mr. Samual Edwards
1833 DS LLC
10750 Seigler Springs Road
Kelseyville, CA 95451

RE: WATER AVAILABILITY ANALYSIS
1833 DS LLC
10750 SEIGLER SPRINGS ROAD
KELSEYVILLE, CALIFORNIA 95451
EBA Job No. 24-3575

Dear Mr. Edwards,

EBA Engineering (EBA) is pleased to present this Water Availability Analysis (WAA) for the 1833 DS LLC (1833 DS) cannabis operation located at 10750 Seigler Springs Road, in Kelseyville, Lake County, California, hereinafter referred to as the project site. Please refer to the provided Figure 1 – Location Map (Appendix A) for a depiction of the project site within the vicinity of Clear Lake and Lake County. The project site is located on a ridgetop along Seigler Springs Road, is approximately nine miles southeast of Kelseyville, and six miles west-southwest of Lower Lake. The site is accessed by Highway 29 between Lakeport and Lower Lake via Diener Drive or by Highway 175 between Middletown and Kelseyville via Seigler Spring Road from Loch Lomond.

The project site includes ten parcels with a total acreage of 602.48 acres (AC). The parcels include Lake County Assessor Parcel Numbers (APNs) 011-047-060; 011-069-480; 115-001-210 & 290; 115-004-010, 050, 070, & 080; 115-005-030, and 115-006-180. The primary address and the location of the main facility is 10750 Seigler Springs Road, Kelseyville, CA (APN 115-004-050). Please refer to Figure 2 – Overall Site Map (Appendix A) for a depiction of the parcels and the surrounding properties.

This WAA was prepared to assess groundwater availability based on increased groundwater demand for a proposed cannabis cultivation scenario, and to address assessment criteria as outlined in the County of Lake's Urgency Ordinance No. 3106 (*An Urgency Ordinance Requiring Land Use Applicants to Provide Enhanced Water Analysis During a Declared Drought Emergency*, County of Lake, 2021).

The purpose of this WAA is to determine whether there is sufficient groundwater supply to accommodate the proposed demand and to estimate the effects of aquifer pumping within the designated Cumulative Impact Area (CIA). This WAA was prepared to meet these objectives. Included is an overview of existing information, such as parcel data, geologic documents, Well Completion Reports (WCRs) identified in the hydrogeologic region, and efforts by previous consultants and water system contractors.

1.0 BACKGROUND INFORMATION

1.1 Project Description

The project includes expanding the total permitted cannabis canopy area from 20.0 AC to 30.1 AC, increasing the number of full-time employees from 15 to 20, and a new 0.92-acre nursery for cultivating cannabis seedlings. Please note that the proposed actual cultivation area is 1.5 times greater than the proposed canopy area value per the Lake County Cannabis Ordinance to account for the space in between the plants. Please refer to the Acreage Determination Plat prepared by Conser Land Surveying, dated March 10, 2024 (Appendix B) for an illustration of the cultivation areas and additional information regarding the total acreages for each of the cultivation blocks. The cultivation blocks are also shown on Figure 2 (Appendix A).

Based on EBA's conversations with 1833 DS, the project includes the 0.92-AC nursery and 10.0 AC of light deprivation canopy for a period of 19 weeks starting during the week of March 5th and ending the week of July 9th. The outdoor cultivation will start with 20.1 AC during the weeks of June 25th through July 9th, and 30.1 AC thereafter. During the weeks of June 25th through July 9th there is overlap including 10 AC of light deprivation cultivation and 20.1 AC of outdoor cultivation to avoid exceeding the 30.1 AC limit. The outdoor crop is then harvested starting during the week of October 22nd. The harvest is proposed to be completed by the end of the week of October 29th.

1.2 Project Site Description

Existing site features include the 20.0-acre cannabis farm, an approximately 32,000-square-foot warehouse, four residences, water treatment and distribution improvements, a 300,000-gallon water storage tank, two well houses, equipment, an irrigation manifold pad, and eight groundwater wells. Please note that the prior land use of the cannabis cultivation area was a vineyard and an orchard. As previously mentioned, the project site is comprised of ten parcels with a total area of 602.48 AC. Topography is characterized as hilly with elevations ranging from approximately 2,025 to 2,975 feet NAVD88.

The project-site parcels include the following zoning descriptions: rural land, rural residential land, and agricultural district land. Land use is predominantly woodland except for the cannabis farm area, residential areas, and dirt roads. A summary of parcel information and the distribution of project groundwater wells is provided on the following page in Table 1. The most recently purchased property by 1833 DS was APN 115-005-030, which was purchased in October 2023. This parcel has not yet been developed by 1833 DS but has added three additional groundwater wells to the 1833 DS well field (Wells 6, 7, and 8). These groundwater wells may be used for groundwater supply in the future, and as such, the CIA (described later in Section 3.0) was expanded to accommodate to include these potential sources of groundwater supply. Please be advised that aquifer hydraulics evaluations in connection with the pumping of Wells 6, 7, and 8 have been excluded from this analysis.

TABLE 1 1833 DS PARCEL SUMMARY				
Address	***APN***	***Total Acres***	***No. of Wells***	***Well Description***
9864 Diener Drive	115-001-210	20.13	0	--
9954 Diener Drive	115-001-290	6.26	0	--
10145 Seigler Springs Road	011-047-060	6.45	1	Well 9 (Residential)
10417 Seigler Springs Road	115-004-010	133.40	0	--
10833 Diener Drive	115-004-080	64.06	1	Well 5 (Residential)
10750 Seigler Springs Road	115-004-050	37.40	1	Well 2 (Agricultural)
10800 Deiner Court	011-069-480	105.74	1	Well 3 (Agricultural)
11000 Diener Drive	115-004-070	18.40	2	Wells 1 & 4 (Agricultural & Residential)
11000 Diener Drive	115-006-180	17.26	0	--
9954 Salmina Road	115-005-030	193.38	3	Wells 6, 7, & 8 (Residential & Public)

1.3 Project Site Well Field Information

Please refer to Table 2 below for a summary of the 1833 DS well field characteristics. Project site WCRs are provided in Appendix C.

TABLE 2 1833 DS WELL FIELD SUMMARY						
Well #	***WCR #***	***Casing Diameter (inches)***	***Completion Depth (feet bgs)***	***Well Yield Estimate (gpm)***	***Static Water Level (feet bgs)***	***Pumping Water Level (feet bgs)***
Well 1	713304	8.0	300	197*	129*	212*
Well 2	WE-5410-AG	14.0	305	275*	151*	161*
Well 3	486026	6.0	405	25*	157*	157*
Well 4	713384	4.5	200	150	125	200
Well 5	N/A	N/A	N/A	N/A	N/A	N/A
Well 6	N/A	N/A	N/A	N/A	N/A	N/A
Well 7	e0274148	6.0	494	60	302	478
Well 8	756196	4.5	470	50	330	470
Well 9	713358	4.5	410	80	260	410

*Data based on Pumping Tests by Jim's Pumps (Appendix D)
WCR: Well Completion Report
bgs: below ground surface
gpm: gallons per minute
N/A: Not Available

The information presented in Table 2 is based on data from the WCRs except for the well yield, static water level, and pumping water level data for Wells 1, 2, and 3 which are based on pumping tests included in Appendix D. The presented WCR number for Well 2 is given as the County of Lake permit number (WE-5410-AG) because the DWR has not yet assigned a WCR number for Well 2. Based on EBA's correspondence with DWR staff, the WCR number has not been assigned because the driller reportedly did not switch over to a required online system for WCR submissions. EBA is waiting for the WCR number to be provided by DWR as of the time of writing this WAA. Available pumping test data for the wells and groundwater reports by previous consultants are included as Appendix D.

1.4 Local Geology and Hydrogeology

The project site is situated in the Coast Ranges geomorphic province which has northwest-trending ridges and valleys that run subparallel to the San Andreas Fault Zone. The project site is located approximately ten miles to the southeast of the Big Valley Groundwater Basin (Basin Number 5-015). The project site lies within the area of the United States Geological Survey's Kelseyville 15-minute by 15-minute quadrangle. EBA utilized the *Geologic Map and Structure of the Clear Lake Volcanics, Northern California - Map I1262* (USGS, B.C. Hearn. Jr., J.M. Donnelly-Nolan, and F.E. Goff, 1995) for geologic interpretation and review. Generally, the geology of the project site vicinity is made up principally of rocks associated with volcanic formations. The immediate vicinity of the project site has been mapped (Hearn et al., 1995) to consist of Andesite of Split Top Ridge (ast), Rhyodacite of Diener Drive (dd), Older dacite of Mount Hannah (doh), Andesite of Salmina Flat (asf), and Rhyodacite of Seigler Mountain (ds) underlain in some areas by Pyroclastic deposits (rbp) and further underlain by the bedrock units of Jurassic Serpentinite (Jsp) and Great Valley Sequence (KJgv). The Great Valley deposits are described as being composed of predominantly shale, siltstone, graywacke, conglomerate, greenstone, and chert, while the serpentinite is thought to have intruded in areas of faulting. Quaternary-aged alluvium (al) is mapped to the southwest of the project site within the CIA in the Salmina Flat area. A geologic map and corresponding cross section for the area are presented as Figure 4 (Appendix A). As shown on Figure 4, the surface geology in the location of the irrigation wells has been mapped as ast.

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

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

quantities of groundwater and typically exhibit specific yield characteristics of less than 3 percent. No springs or ephemeral drainages were observed during EBA's site visit.

1.5 Local Climate

Review of published data by the Parameter-Elevation Regressions on Independent Slopes Model (PRISM) Climate Group, indicates the 30-year (1991 – 2020) average annual rainfall in the vicinity of the project site (38.8946, -122.7082) is 52.35 inches per year utilizing the Time Series Values for Individual Locations system (Prism, 2024). The 30-year data was evaluated using the 4-kilometer spatial resolution and the interpolate grid cell values function.

Mean annual potential evapotranspiration (ETo), which represents both transpiration from plants and crops as well as evaporation, was estimated to be 50.94 inches per year based on reference ETo tables for Sanel Valley (Hopland, Mendocino County) provided in the California Irrigation Management Information System (CIMIS) Reference Evapotranspiration Website (CIMIS, 2024). Hopland is the nearest CIMIS station to the project site.

2.0 RESEARCH

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

2.1 Site Reconnaissance

EBA conducted a field reconnaissance at the project site on June 4, 2024. The purpose of the reconnaissance was to observe existing site features, site topography, local geology, and the locations of existing wells. The project properties are characterized by hilly terrain. At the time of the reconnaissance, the existing uses and features were found to be consistent with those described in Subsection 1.1. During the reconnaissance, EBA observed the location of Wells 1, 2, 3, 4, 6, 7, and 8. Wells 5 and 9 were not observed because the 1833 DS owner did not want to disturb his tenants in the residences adjacent to the well sites. Please refer to Subsection 1.3 for a description of the groundwater wells and to Figure 2 (Appendix A) for an illustration of their approximate locations. The reconnaissance also included observations of neighboring properties to establish the nature of nearby developments and property uses. Please be advised that due to the rural nature of the properties and limited public access, visual observations were limited to what could be seen from adjacent roadways. In general, most of the properties in all directions from the project site were comprised of either developed or undeveloped rural properties. The site reconnaissance was supplemented with a review of Google Earth aerial imagery for the area. Findings from this review were generally consistent with the above descriptions.

2.2 Well Completion Reports (WCRs)

WCRs maintained by the DWR were reviewed to obtain pertinent information for the area

regarding water supply use, well completion depths, yields, reported lithology, and drawdown characteristics. The scope of the DWR research encompassed available records for wells located in the vicinity of the CIA which is defined in more detail in Section 3.0 of this WAA. EBA visited the Lake County Public Health Department in Lakeport on two occasions to obtain parcel-specific WCR information from County staff and worked with DWR staff in the Northern Region Office to obtain WCRs for parcels where no information was found during previous search efforts. The results of this research identified 53 off-site WCRs that EBA was able to locate based on the information provided. A summary of well yield characteristics for the identified WCRs is provided in Table 3 below.

TABLE 3
SUMMARY OF WELL CHARACTERISTICS FOR IDENTIFIED WCRs

Description	***Quantity / Range of Values***	***Average Values***
Number of Water Supply Wells / Borings	53	-
Number of Dry Holes	0	0
Drilling Depths (feet bgs)	95 to 760	275
Static Groundwater Levels (feet bgs)	5 to 550	162
Reported Yields (gpm)	2 to 1,530	84
Specific Capacity (gpm/foot)	0.02 to 83.1	2.50

WCRs: Well Completion Reports
bgs: below ground surface
gpm: gallons per minute
gpm/foot: gallons per minute per foot of drawdown

Please refer to Figure 5 (Appendix A) for a map of the WCR locations within the CIA. All aforementioned off-site WCRs are included as Appendix E.

2.3 Assessor's Parcel Maps

EBA reviewed County of Lake assessor's parcel map data to identify property boundaries and addresses. This information, in turn, was used to establish the number of properties within the designated CIA (described in Section 3.0) used for this WAA. Findings from this exercise identified 159 properties (including the project site) ranging in size from approximately 0.07 to 456 AC. It should be noted that 57 of the 159 identified properties are only partially within the CIA.

3.0 CUMULATIVE IMPACT AREA

The "Cumulative Impact Area" as defined for this WAA corresponds to the change in a specific area resulting from the incremental impact of the project or future potential projects when added to other existing or potential future groundwater uses in the area. Based on this criterion, existing and potential future development characteristics for surrounding

properties were considered, coupled with the site hydrogeology and the nature of the proposed development to estimate the CIA for the proposed project.

An important consideration in establishing the CIA for this project is the local topography and hydrogeology. In this regard, the southern, western, and eastern boundaries of the CIA are delineated by topographic ridges that define the local watershed and inferred hydrogeologic boundary conditions. The northern boundary was delineated based on the assumed generalized regional direction of groundwater flow (from Cobb Mountain towards Clear Lake) and an arbitrary 500-foot buffer from the northernmost property lines. The southwest region of the CIA was delineated to include Salmina Flat. The area of the CIA was calculated to be 1,900.27 AC and is shown on Figures 3 through 5 (Appendix A).

4.0 SUMMARY OF EXISTING / PROJECTED GROUNDWATER USE

The following subsections provide an estimation of both the existing and future groundwater uses for the project site as well as the entirety of the 1,900.27-acre CIA. Please refer to Appendix F for weekly groundwater demand data provided by 1833 DS of existing and future groundwater use.

4.1 Existing Project Site Water Usage

Existing project site water usage data using historical well meter information and use estimates was provided by 1833 DS (Appendix F). Based on this data for the 2024 growing season, the existing project water use is comprised of the following components:

- Cannabis irrigation based on 20 AC of outdoor cultivation;
- 2,000 gallons per week of water used for dust control from the week of June 10 through the week of October 21; and
- 1,575 gallons per week for 15 employees with an assumed 15 gallons per day per employee.

Based on EBA's conversations with 1833 DS, 1833 DS cannabis irrigation practices are reportedly optimized using advanced irrigation and management practices when compared to traditional outdoor cannabis operations. Typical hydrogeologic reports for the County of Lake assume a water demand of six gallons per day per plant. However, based on adjusted totalizer data provided by 1833 DS, water use was estimated to be approximately 0.88 gallons per day per plant. This reduced water demand is attributed to smaller plant sizes, optimized spacing, and efficient irrigation methods. In 2024, 1833 DS cultivated 9,000 plants per canopy acre, with each plant allocated 4.75 square feet (excluding row spacing). Drip irrigation and soil moisture sensors are reportedly employed to minimize water usage.

As a point of consideration, 1833 DS asserts that the total number of plants per acre does not directly determine the amount of water used in their operations. Instead, the determining factor is the total green biomass (the combined mass of leaves and stems produced by the

plants). The total water use would remain consistent as long as the total green biomass is the same, regardless of whether 5,000 or 10,000 plants are grown per acre.

1833 DS has identified that smaller plants are more cost effective for the following reasons:

- The shorter growth cycle reduces the cumulative amount of water required.
- Plants are managed to reach maximum canopy size just before harvest, aligning water use with the plant's growth needs and avoiding excess watering during extended growth periods that is required for larger-sized plants.

The tabular data provided by 1833 DS (Appendix F) for the existing groundwater use was used to generate Exhibit 1 below that depicts the historical weekly water demand over time. The existing project water use estimates generated by 1833 DS were based on totalizer data from a water meter that records the sum of flow rates from both Wells 1 and 2. Totalizer data was written on a daily hand irrigation log by 1833 DS staff. Then, the upper range of daily values for each week were used to generate the provided weekly estimates below. Please note that 1833 DS LLC believes that the provided existing water use estimates are conservative because the upper range of daily values were used.

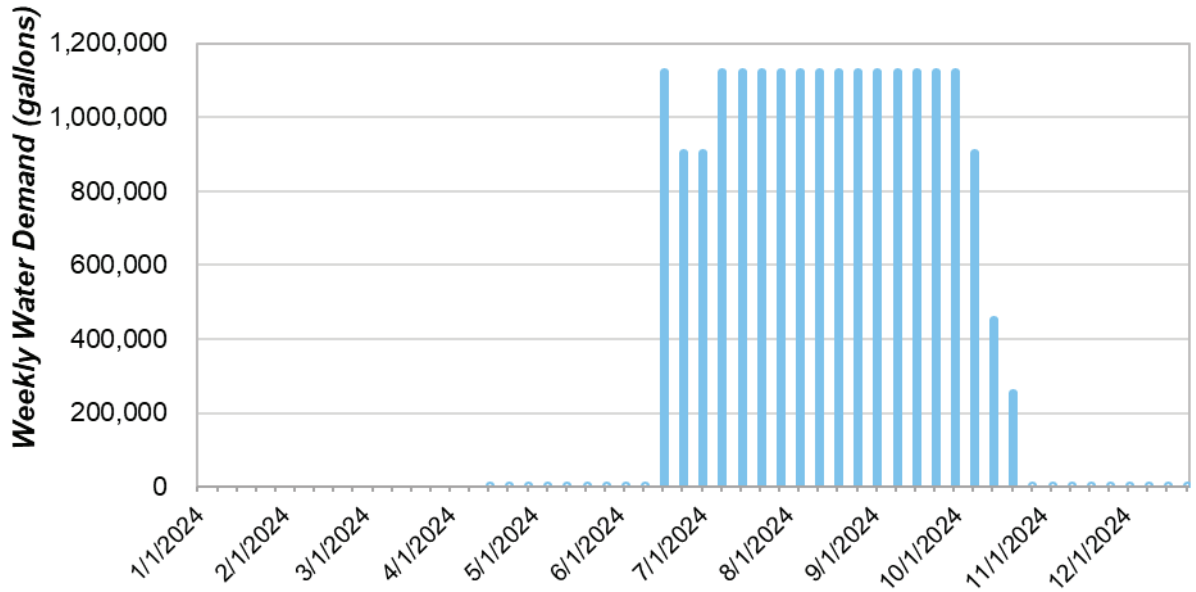


Exhibit 1 – Historical 20 AC (2024) Weekly Water Demand

The data shows that 1833 DS water use peaked from the week of June 18 through the week of October 8, with weekly irrigation demands of approximately 900,000 to 1,120,000 gallons.

Prior to the main growing season, water use was limited to 1,575 gallons per day for employees starting the week of April 15. Dust control water use began during the week of June 10 and was followed by the start of the growing season during the week of June 17. Please note that water use decreased during the weeks of June 24 and July 1 due to lower

temperature conditions during the 2024 growing year. The final three weeks of the growing season showed a tapering in water use in parallel with the harvest. Dust control water use ended with the end of the harvest, and employee water use continued through the end of the calendar year.

Based on the values provided by 1833 DS, the total existing annual water use was 19,178,275 gallons per year, or 58.86 AF per year (AFY).

4.2 Future Project Site Water Use

Projected future water use for the operation includes nursery irrigation, cultivation irrigation (outdoor and light deprivation), dust control, and worker water demands. Please refer to the tabular data provided by 1833 DS in Appendix F for additional information.

Nursery Irrigation
Nursery irrigation begins at 5,000 gallons per week for the first eight weeks of the calendar year. This increases to 10,000 gallons per week from the week of March 26 through the week of April 30 and peaks at 25,000 gallons per week from the week of May 7 through the week of July 2. The demand then returns to 5,000 gallons per week for the remainder of the year. Based on EBA's conversations with 1833 DS, EBA understands that the nursery will be a fully enclosed facility, maintaining high internal humidity levels, which significantly lowers the vapor pressure deficit. This reduction minimizes plant transpiration, meaning the plants lose less water to the air and therefore require less irrigation. These controlled conditions, combined with the small size of the nursery plants, result in lower water use than outdoor growing.

Light Deprivation Cultivation
Light deprivation cultivation begins the week of March 5 and continues until the week of July 9. Based on EBA's conversations with 1833 DS, EBA understands that the light deprivation cultivation area will be 10 acres and operations will be conducted in covered structures that limit light exposure and create a controlled environment. Weekly water use estimates for light deprivation cultivation peak at 500,000 gallons from the week of April 30 through the week of July 9 which aligns with the final growth stages before harvest. The controlled environment within the light deprivation area reduces vapor pressure deficit, which significantly lowers plant transpiration and overall water demand. Once the light deprivation cycle concludes in the week of July 9, the 10 acres transition to outdoor cultivation, contributing to the expansion of the outdoor area from 20.1 acres to 30.1 acres. Plant spacing and irrigation practices in the light deprivation were described by 1833 DS to be consistent with that of outdoor cultivation practices.

Outdoor Cultivation
Outdoor cultivation begins the week of June 25 and continues until the week of October 29, 2024. The area initially starts at 20.1 acres during the early growing season (during the weeks of June 25 to July 2). By the week of July 9, the total outdoor cultivation area expands to 30.1 acres. This increase occurs as the 10 acres of light deprivation cultivation completes its cycle, allowing those acres to transition to outdoor use. The outdoor cultivation area remains at 30.1 acres until the week of October 15. After this, it decreases back to 20.1 acres during the week of October 22 as harvesting begins. By the week of

October 29, the outdoor cultivation area further reduces to 10 acres and is eventually phased out completely after all crops are harvested.

Weekly water use for outdoor cultivation peaks during the height of the growing season, reaching 1,690,600 gallons per week from the week of July 16 to the week of October 15.

Dust Control
Water use for dust control is seasonal and ranges from 2,000 gallons per week during cooler months to 3,000 gallons per week during the drier summer and fall months.

Employee Water Use
Water demand for 20 employees remains steady at 2,100 gallons per week throughout the year. This estimate assumes each worker requires 15 gallons per day.

Weekly water use estimates provided by 1833 DS for the future project site water use is presented in Exhibit 2 below. These values were based on the aforementioned existing water use estimates and 1833 DS experiments in a test nursery.

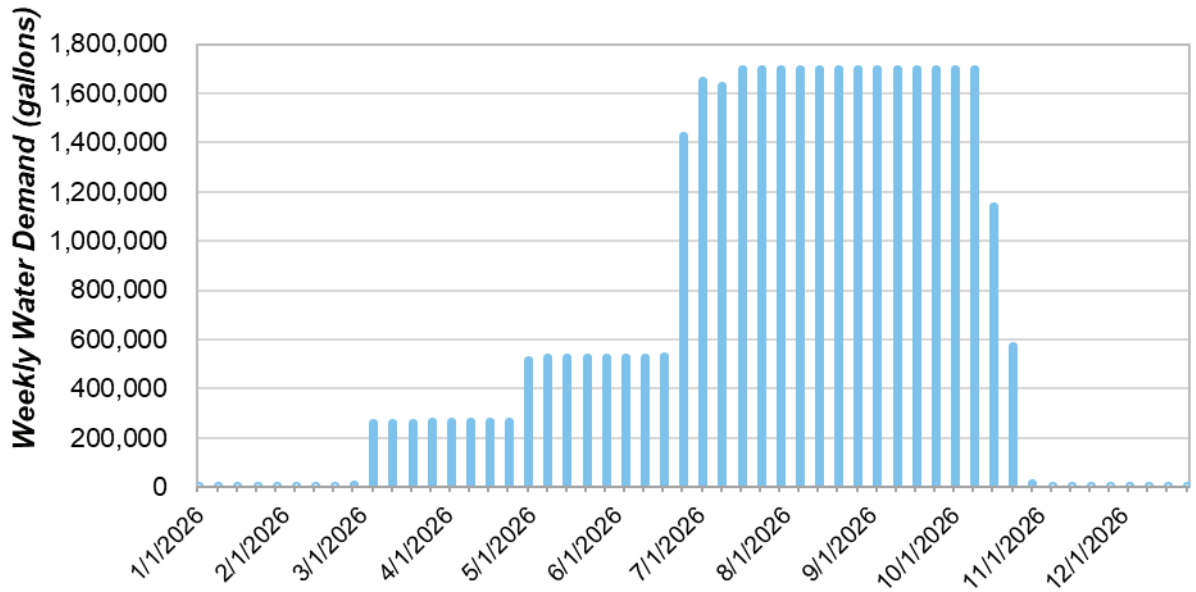


Exhibit 2 – Future Project Site Weekly Water Demand

The future project site use involves groundwater pumping throughout the entire calendar year. Groundwater use steps up throughout the year to provide water supply for the nursery, the light deprivation cultivation area, and the outdoor cultivation area. Once the outdoor growing season begins, the initial weekly water demands are lower in the first three weeks since only 20.1 AC of outdoor cultivation area is proposed during this time due to overlap with the light deprivation cultivation area of 10 AC.

Based on the total values provided by 1833 DS, the total proposed annual water use was estimated to be 34,987,600 gallons per year, or 107.37 AFY.

4.3 CIA Existing and Future Non-Project Groundwater Use

The CIA established for this project encompasses 159 properties (including the project site parcels). Identified uses on these properties include single-family dwellings, agriculture, and undeveloped land with no associated existing water use. As previously discussed, a combination of review of title records and aerial imagery was utilized to determine property development characteristics. Residential water use was estimated using a unit rate use factor of 0.25 AFY per bedroom plus an incidental use factor of 0.25 AFY per residence to account for additional water uses such as landscaping. Locations of residences within the CIA were established based on a Google Earth search performed by EBA staff. Once the residences were located, the number of rooms within each residence was identified using ParcelQuest, Zillow, and Redfin internet searches. Where no data was available, the residence was assumed to have three bedrooms. Residence locations and labels describing the number of bedrooms estimated are presented for reference on Figure 3 (Appendix A). In total, 83 residences were identified during the exploration. Of the 83 identified residences, two residences had 5 bedrooms, four residences had 4 bedrooms, 53 residences had 3 bedrooms, 17 residences had 2 bedrooms, and 7 residences had 1 bedroom. Additionally, future water use estimations for 3-bedroom residences were conservatively assumed for the remaining 19 undeveloped properties with residential zoning to account for potential future groundwater use. This assumption brought the total number of residences to 102 for the potential future off-site non-project groundwater use estimate.

Based on the methodology described above, existing non-project groundwater use within the CIA was estimated to be 77.25, and future non-project groundwater use was estimated to be 96.25 AFY.

5.0 GROUNDWATER AVAILABILITY ANALYSIS

As outlined in the introduction of this WAA, the primary objectives were to evaluate whether there is adequate groundwater supply to accommodate the proposed project water demand and to estimate the effects of groundwater pumping of the project irrigation wells within the designated CIA. The following subsections address these issues.

5.1 *Groundwater Storage Capacity*

The groundwater storage capacity immediately beneath the project site was estimated by multiplying the volume of the aquifer by its specific yield. In this regard, the aquifer area was estimated based on the size of the project site (602.48 AC) and WCR information. The aquifer thickness, in turn, was based on the average static groundwater level in the units based on measurements taken during the site reconnaissance and the aquifer depth, which was set at the deepest producing water supply well identified. Finally, the aquifer's specific yield or secondary porosity volume was conservatively estimated based on documented literature values for fractured volcanic rocks. For example, a study performed by others on 90 independent volcanic tuff samples revealed a specific yield with an arithmetic mean of 21 percent (Weight and Sonderegger, 2000; Anderson and Woessner, 1992). Furthermore, as previously mentioned, the LCWPD estimates the specific yield of the Clear Lake Volcanics to be between zero and 15 percent (LCWPD, 2006). Based on this information, EBA chose

a conservative value of 7 percent for the estimated specific yield. The storage capacity was then calculated by multiplying the respective variables. The following provides a breakdown of the calculations:

Project Site Groundwater Storage Capacity: Clear Lake Volcanics

- Project Site Area: 602.48 AC
- Average Static Groundwater Level: 171.66 feet bgs
- Average Aquifer Depth: 328.00 feet bgs
- Average Aquifer Thickness: 156.34 feet
- Specific Yield: 7 percent
- Estimated Volume of Groundwater in Storage: 6,593 AF

Based on the calculations on the previous page, the total estimated volume of groundwater in storage within the area of the aquifer immediately beneath the project site equates to approximately 6,593 AF. The values for average static groundwater level and average aquifer depth were derived based on information from seven on-site groundwater wells where WCRs were identified.

As presented in Subsection 4.2, the annual total water demand for the project is 107.37 AFY. This annual proposed water demand is estimated to be 1.6 percent of the groundwater in storage underlying the project site.

Next, the estimated groundwater in storage was estimated for the entire CIA. Please note that the typical specific yield literature value for volcanics of 0.07 was used for the entire CIA, because the geology is primarily made up of volcanics and all wells that were drilled into the alluvium formation underlying Salmina Flat are only screened in volcanics underlying the alluvium. The following provides a breakdown of the calculations for the entire CIA:

CIA Groundwater Storage Capacity: Clear Lake Volcanics

- CIA Area: 1,900.27 AC
- Average Static Groundwater Level: 167.85 feet bgs
- Average Aquifer Depth: 282.30 feet bgs
- Average Aquifer Thickness: 114.45 feet
- Specific Yield: 7 percent
- Estimated Volume of Groundwater in Storage: 15,224 AF

Based on the above calculations, the total estimated volume of groundwater in storage within the area of the aquifer beneath the CIA equates to approximately 15,224 AF. The values for average static groundwater level and average aquifer depth were derived based on information from seven on-site groundwater wells where WCRs were identified and the 53 off-site WCRs identified in Subsection 2.2.

As mentioned previously, the annual total water demand for the proposed project is 107.37 AFY. This annual proposed water demand was estimated to be less than one percent of the groundwater in storage underlying the CIA. Further, the total estimated future non-project

groundwater usage for the entire CIA was 96.25. This value plus the annual total water demand for the project is 203.62 AFY. This combined future annual water demand was estimated to be approximately 1.3 percent of the groundwater in storage underlying the CIA. It is important to note that due to the interaction between groundwater and subsurface geology in the vicinity of the project site, it is not likely that the entire amount of groundwater in storage can be efficiently extracted.

5.2 Project Site Groundwater Recharge Analysis

EBA prepared an estimate of the project site's groundwater recharge potential under the proposed future use scenario by comparing estimated inflows and outflows from the aquifer. The volume available for recharge was estimated based on precipitation as the principal source of inflow while outflows were estimated based on run-off, evapotranspiration, canopy interception, and spring losses. While secondary sources of inflow (such as upgradient boundary flow), and secondary sources of outflow (such as downgradient boundary flow, and surface-water-groundwater interaction) potentially contribute to the groundwater budget, they are assumed to generally be equal and accordingly result in no net gain or loss. Based on this approach, the following equation was used to calculate potential volume of water available for recharge:

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

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

Precipitation (P)

The total volume of precipitation that falls within the area of the project site was calculated by multiplying the annual precipitation rate of 52.35 inches per year (see Subsection 1.5) by the combined aquifer area of the project site parcel (602.48 AC). The total annual precipitation over this area corresponds to 2,628.32 AFY during average precipitation years and 1,576.99 AFY during the assumed drought scenario.

Run-off (R)

The percentage of the total precipitation that results as outflow (i.e., run-off) was estimated using the rational method by comparing the ground slopes within the area of the project site parcel to type curves for various surfaces (Oregon Department of Transportation [ODOT Manual], 2014). AutoCAD Civil3D was used in conjunction with publicly available topography data to evaluate slope characteristics. Land coverage type was estimated based on review of aerial imagery. All areas were conservatively assumed to be "hilly" as defined in the 2014 ODOT manual. These areas, in turn, were further separated by the

types of settings. The following provides a breakdown of the setting types and range of runoff coefficients (RCs) used in the analysis:

- Light Residential: 5.00 AC (RC = 0.45)
- Woodland / Forest(1): 567.38 AC (RC = 0.20)
- Cultivated Land: 30.10 AC (RC = 0.60)

The annual run-off volume for each area was calculated by multiplying the respective areas by the annual precipitation volume, followed by multiplying the corresponding products by the applicable run-off coefficient. The summation of all the area run-off volumes equate to the total estimated annual run-off volume for the project site. The average annual run-off volume was calculated to be approximately 583.64 AFY during average precipitation years and 350.18 AFY during the assumed drought scenario.

Actual Evapotranspiration (ET_a)

Actual Evapotranspiration (ET_a) was calculated using the Water Use Classification of Landscape Species (WUCOLS) site specific model as described in *A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California* (UC Cooperative Extension, 2000). Species factors (K_S) and density factors (K_D) as outlined in the WUCOLS Guidance Documentation were determined based on observations made during the site visit and review of aerial photography. A microclimate factor (K_{MC}) of 1 was selected based upon review of available climate data. Resulting landscape coefficients (K_L) were then multiplied by respective unit areas to determine an estimated ET_a for these native vegetation types within the project site parcels. Monthly ETo values from reference ETo tables for Sanel Valley (Hopland) provided in the CIMIS Reference Evapotranspiration Website (CIMIS, 2024) were used to estimate actual evapotranspiration. The ET_a calculations are based on the project schedule including 10 acres of light deprivation for the months of February through April and the 30.1 acres of outdoor cultivation from June through October to provide a conservative estimate for ET_a.

The total ET_a within the project site was calculated to be approximately 416.85 AFY. While it is acknowledged that ET_a generally decreases during drought conditions, for the purpose of the following recharge calculations the estimation of ET_a for average precipitation years was also applied to the assumed drought scenario. As such, the estimated ET_a for the drought scenario should be considered conservative in nature.

Canopy Interception (EC_I)

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

calculated to be approximately 153.76 AFY during average precipitation years and 92.26 AFY during the assumed drought scenario.

Springs

Published data regarding spring flow discharges in the area were not available. In the absence of such information, EBA conservatively assumed that 10 percent of annual precipitation is lost through spring discharge. However, it should be noted that no springs were observed during EBA's site inspection. Spring discharge was estimated to represent approximately 262.83 AFY during average precipitation years and approximately 157.70 AFY during the assumed drought scenario.

Water Budget Results

A summary of the groundwater recharge calculations under average precipitation years as well as the assumed drought scenario is provided in Table 4 on the following page.

TABLE 4
PROJECT SITE GROUNDWATER RECHARGE CALCULATIONS
AVERAGE RAINFALL AND DROUGHT SCENARIOS

Description	***Inflow/Outflow***	***Volume (AFY) Average Rainfall***	***Volume (AFY) Drought Scenario***
Precipitation	Inflow	+2,628.32	+1,576.99
Run-off	Outflow	-583.64	-350.18
Actual Evapotranspiration	Outflow	-416.85	-416.85
Canopy Interception	Outflow	-153.76	-92.26
Springs	Outflow	-262.83	-157.70
TOTALS	**--**	***+1,211.24***	***+560.00***

Using each of the calculated variables in the groundwater recharge equation, the corresponding estimated volume of water available for groundwater recharge in the vicinity of the project site during average precipitation years is approximately 1,211.24 AFY. Annual recharge potential during the assumed drought scenario (60 percent of average precipitation) was calculated to be approximately 560.00 AFY.

The annual total water demand for the project is 107.37 AFY. This was estimated to be approximately 8.9 percent of the average recharge volume and approximately 19.2 percent of the drought recharge volume. As such, a positive water budget exists for the project in both average precipitation years and assumed drought scenarios.

5.3 CIA Groundwater Recharge Analysis

An estimate of groundwater recharge potential for the entirety of the CIA was also developed under the proposed future use scenario. The estimate of groundwater recharge

potential for the CIA was performed using the same procedures and methodologies as described above in Subsection 5.2.

Please note that EBA has included a required Drought Management Plan for the project as Appendix G to address requirements as outlined in the County of Lake's Urgency Ordinance No. 3106 (*An Urgency Ordinance Requiring Land Use Applicants to Provide Enhanced Water Analysis During a Declared Drought Emergency*, County of Lake, 2021).

Run-off (R) in CIA

Run-off for the CIA was calculated using the same methodologies presented for the previous run-off calculations for the project site. Again, all areas were conservatively assumed to be "hilly" as defined in the 2014 ODOT manual. These areas, in turn, were further separated by the types of settings. The breakdown on the following shows the setting types and range of runoff coefficients (RCs) used in the analysis:

- Meadows / Pasture Land: 142.84 AC (RC = 0.35)
- Light Residential: 22.57 AC (RC = 0.45)
- Woodland / Forest: 1,638.37 AC (RC = 0.20)
- Cultivated Land: 96.49 AC (RC = 0.60)

The "Cultivated Land" total area of 96.49 AC is comprised of 33.72 AC of cannabis, 54.54 AC of vineyards, and 8.23 AC of orchards. These areas and land use types were also used to compute the evapotranspiration calculations described below.

Actual Evapotranspiration (ET_a) in CIA

The ET_a calculations for the CIA were again based on the project crop schedule including 10 AC of light deprivation for the months of February through July and the 30.1 AC of outdoor cultivation from July through October, as well as an additional 3.26 AC of off-site outdoor cultivation by others that was conservative assumed to be planted from March through October. The off-site orchard area of 8.23 AC, the off-site vineyard area of 54.54 AC, and the total forested area of 1,638.27 AC were also included in the CIA ET_a calculations.

Proposed vineyard ET_c (Crop Evapotranspiration) was calculated in general accordance with methodologies described in the *California Crop and Soil Evapotranspiration for Water Balances and Irrigation Scheduling/Design* (DWR, 2003). A vineyard crop density of 60 percent cover was assumed. The reference crop evapotranspiration value for this crop type, crop cover, and region is 27.23 inches per year during typical years per Table 5, Zone 8 of the aforementioned DWR publication.

The evapotranspiration demand is provided by the evapotranspiration from effective precipitation in addition to evapotranspiration from applied water. As such, the amount of applied water reported for the vineyard (0.50 AFY per AC), was subtracted from the reference crop evapotranspiration value (DWR, 2003) to yield a unit crop evapotranspiration value due to effective precipitation alone (unit ET_c). Please note the unit ET_c equates to the

volume of precipitation across the vineyard area that will be lost by evapotranspiration and not available for groundwater recharge. ET_a for existing vineyard was calculated by multiplying the unit ET_c by the associated acreage of vineyard. These calculations for vineyard ET_a were performed during average precipitation years. While it is acknowledged that ET_a generally decreases during drought conditions, for the purpose of the following recharge calculations the estimation of ET_a for average precipitation years was also applied to the assumed drought scenario. As such, the estimated ET_a for the CIA drought scenario should again be considered conservative in nature.

Water Budget Results for CIA

Table 5 on the following page tabulates the groundwater recharge calculations performed for the CIA.

TABLE 5
CIA GROUNDWATER RECHARGE CALCULATIONS
AVERAGE RAINFALL AND DROUGHT SCENARIOS

Description	***Inflow/Outflow***	***Volume (AFY) Average Rainfall***	***Volume (AFY) Drought Scenario***
Precipitation	Inflow	+8,289.93	+4,973.96
Run-off	Outflow	-1,944.45	-1,166.67
Actual Evapotranspiration	Outflow	-1,128.00	-1,128.00
Canopy Interception	Outflow	-434.37	-260.62
Springs	Outflow	-828.99	-497.40
TOTALS	**--**	***+3,954.12***	***+1,921.27***

As mentioned previously, the annual total water demand for the project is 107.37 AFY. The proposed water demand was estimated to be 2.7 percent of average-rainfall groundwater recharge and 5.6 percent of drought-year groundwater recharge. Further, including the total estimated future non-project groundwater usage for the entire CIA of 96.25 increases the future total annual CIA water demand to 203.62 AFY. This combined future annual water demand was estimated to be 5.2 percent of the average rainfall-year groundwater recharge and 10.6 percent of the drought-year groundwater recharge.

5.*4* ***Maximum Daily Demand, Pumping Duration, and Recovery Data***

Maximum daily demand (MDD) for groundwater use was estimated using the weekly groundwater use data provided by 1833 DS (Appendix F). The maximum weekly water demand for the project was estimated to be 1,700,700 gallons. Based on EBA's conversations with 1833 DS, the weekly water demand will be partitioned throughout the week equally for each day. As such, the weekly water demand values for the project were divided by seven days per week to yield the MDD value of 242,957 gallons per day (gpd).

Based on the well yield of 197 gpm for Well 1 (2020) and 275 gpm for Well 2 (2021) for a combined pumping rate of 472 gpm, the MDD for the project corresponds to approximately

515 minutes of pumping per day, assuming that both wells are pumping at the same time. This pumping rate would require both wells to be operated for 8.58 hours at their recommended pumping rates.

Based on the pumping test data provided in Appendix D, Wells 1 and 2 recovered 95 percent and 100 percent, respectively, within 15 minutes of pump shutoff. As such, EBA assumes that the wells will recover 95 percent during the approximately 15-hour shutoff period.

5.5 Distance Drawdown Modeling

EBA developed an aquifer hydraulics model to estimate the radius of influence from the projected groundwater pumping rate based on a distance-drawdown model developed in Microsoft® Excel. The distance-drawdown model uses methodology described by Theis (1935) (Equation 1 below).

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

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

The well function is approximated using a Taylor Series expansion per the methodology presented by Cooper and Jacob (1946) (Equation 2).

$$w(u) = \ -0.5772 + \ln(u) + u - \frac{u^2}{2*2!} + \frac{u^3}{3*3!} - \cdots \qquad \text{(Equation 2)}$$

The following assumptions are inherent in the Theis methodology: the aquifer is infinite in extents, horizontal, confined, homogeneous, isotropic, the well diameter is negligible, and groundwater flow is horizontal.

Aquifer transmissivity and storativity values related to Well 1 were estimated based on an 8-hour pumping test performed by Jim's Welding & Pumps on February 13, 2020. This data is provided on page 18 of Appendix D. The pumping test used Well 4 as a sentinel well and Well 1 as a pumping well with a flow rate of 197 gpm. Depth to water measurements indicated that there was 3.97 feet of drawdown in Well 4 (located approximately 137 feet away from Well 1) after a pumping duration of 479 minutes from 9:15 AM until 5:14 PM. Drawdown at Well 1 was measured to be approximately 83 feet during the pumping test. Estimates of transmissivity and storativity values of 3,080 gpd per foot and 1.49×10^{-2}, respectively, were estimated for the hydrogeologic formation in the vicinity of Well 1 using a sum of the square residuals (SSR) optimization by varying transmissivity and storativity values in conjunction with each other to match both the 83-foot drawdown at Well 1 and

the drawdown at Well 4 of 3.97 feet. This was facilitated using the Solver function in Microsoft Excel. The optimization problem used in this routine is presented on the following page (Equation 3).

$$\min z = \sum_{i=3}^{n} \left(h_{o,i} - h_{m,i}\right)^2 \qquad \text{(Equation 3)}$$

where z = the objective function
i = an index number for all pump test data in series n
$h_{o,i}$ = observed hydraulic head (feet)
$h_{m,i}$ = modeled hydraulic head (feet)

Aquifer transmissivity and storativity values related to Well 2 were estimated based on an 4-hour pumping test performed by Jim's Welding & Pumps on July 30, 2021. This data is provided on page 22 of Appendix D. During the pumping test, there was ten feet of drawdown measured after 30 minutes of pumping at a flow rate of 275 gpm. The drawdown reportedly remained unchanged after the initial 30 minutes of pumping until the end of the pumping test. Using the aforementioned Theis equation, EBA estimated transmissivity and storativity values of 34,484 gpd per foot and 1.53×10^{-2}, respectively, for the hydrogeologic formation in the vicinity of Well 2 using a flow rate of 275 gpm and a drawdown of ten feet after 30 minutes of pumping.

Individual aquifer transmissivity values for Wells 1 and 2 were also estimated to be 4,747 gpd per foot and 55,000 gpd per foot, respectively, utilizing the methods presented by Driscoll (1986) for a confined aquifer (Equation 4).

$$T = \frac{2{,}000\,Q}{s} \qquad \text{(Equation 4)}$$

Please note that the difference in transmissivity between Wells 1 and 2 may be attributed to well construction (i.e., Well 1 has a smaller casing diameter than Well 2) and efficiency differences more than heterogeneity of the aquifer in the vicinity between the wells. Further, drawdown amounts in Well 1 as demonstrated by transducer data does not exhibit 83 feet of drawdown during pumping, but rather approximately 20 feet of drawdown. With that being said, EBA has used a lower transmissivity for Well 1 and as such the radius of influence estimates should be considered conservative.

The radius of influence with a pumping rate of 197 gpm for a duration of 515 minutes was estimated for Well 1 to be approximately 230 feet based on the transmissivity and storativity estimates for Well 1. The radius of influence with a pumping rate of 275 gpm for a duration of 515 minutes was estimated for Well 2 to be approximately 330 feet based on the transmissivity and storativity estimates for Well 2. These values represent where the modeled cone of depression from groundwater extraction reaches a point where the drawdown was estimated to be equal to one foot, which was selected on the basis that groundwater level measurements to a tolerance of under one foot are influenced by variability in barometric pressure, by other groundwater pumping in the CIA, and by recharge patterns. Furthermore, a drawdown of less than one foot is considered by EBA to be a negligible effect on well interference and a de-minimis condition.

In an effort to model cumulative effects of pumping Wells 1 and 2 at the same time, the radius of influence estimates were superimposed onto each other by adding their individual

values. As such, the total radius of influence for pumping Wells 1 and 2 at the same time was estimated to be 560 feet.

Based on the available data and the distance drawdown evaluation described herein, including the associated assumptions for both the drawdown model and the well characteristics implied from the pumping test, the pumping regiment associated with the proposed project appears unlikely to result in appreciable drawdown in off-site water supply wells because the total radius of influence for pumping Wells 1 and 2 at the same time was estimated to be 560 feet, and there are no identified off-site wells within this radius. Please note that the analysis assumes 95 percent recharge in the respective wells before initiating the next pumping cycle.

5.6 Pumping Well Hydrograph Data

Groundwater elevations fluctuate seasonally based on aquifer budget components (variability in recharge from precipitation, recharge or discharge from adjacent hydrogeologic formations, boundary conditions such as streams or lakes, and evapotranspirative losses) and from groundwater production.

Routine monitoring of groundwater levels provides the necessary data to characterize these fluctuations and provides water managers with valuable information for groundwater management. In general, groundwater levels are considered “sustainable” if they rebound seasonally after pumping occurs. This is traditionally considered an indication that an aquifer has sufficient inflows to recharge groundwater in storage. As such, this would typically mean that overdraft conditions are not expected to be present.

1833 DS began collecting groundwater elevation data for Well 1 on June 27, 2024 and for Well 2 on June 17, 2024. EBA was provided this data through the date of December 24, 2024 with measurements taken every 15 minutes.

The hydrograph representing the groundwater elevation over time in Well 1 is presented on the following page as Exhibit 3. The ground surface shown corresponds to 2,567 feet NAVD88 at the approximate well head elevation, and the bottom of the well is 300 feet deeper at an elevation of 2,267 feet NAVD88.

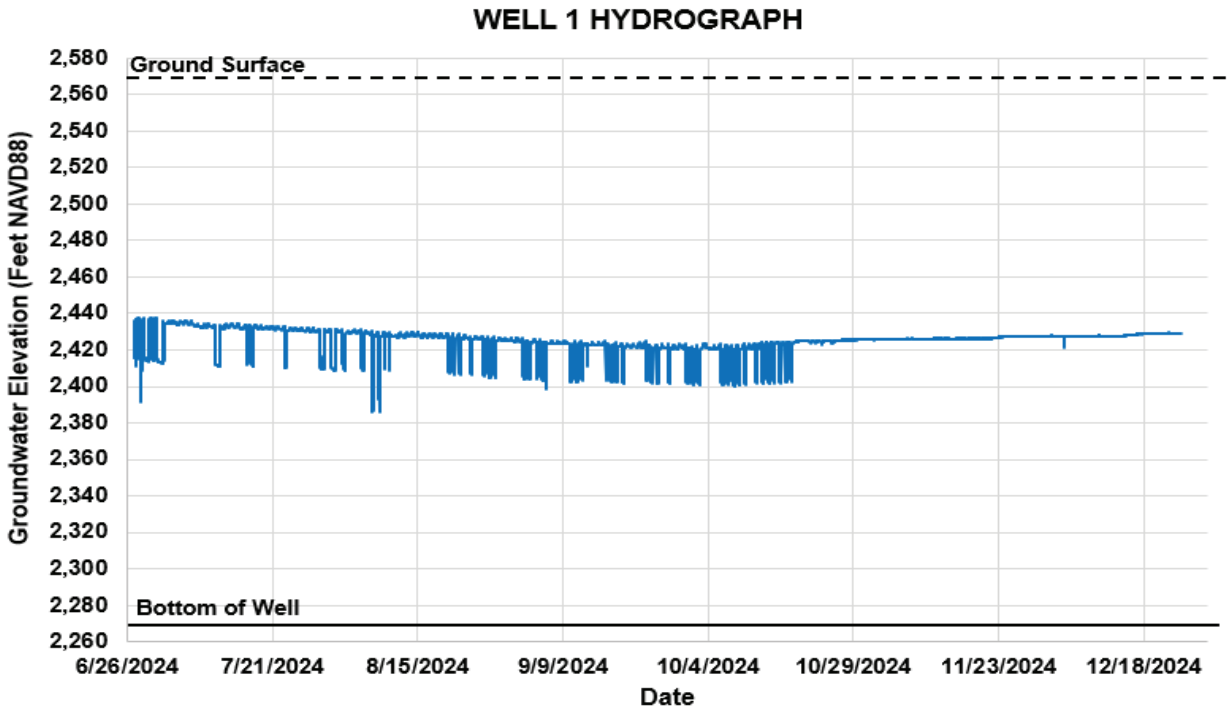


Exhibit 3 – Well 1 Hydrograph

The groundwater elevations exhibited in the Well 1 Hydrograph ranged from approximately 2,437 feet NAVD88 in June to lows of approximately 2,420 feet NAVD88 in October during pump shutoff. This indicates that there was a decline in groundwater levels at Well 1 of approximately 17 feet between June and October 2024. This decline can be attributed to seasonal fluctuations, regional groundwater pumping, and project site groundwater pumping to provide water supply for the 20-AC cannabis farm. Drawdown values during pumping were approximately 20 feet and groundwater levels generally rebounded back to pre-pumping levels within 15 minutes of cessation of pumping. As previously mentioned, the drawdown fluctuations shown on the hydrograph are not consistent with the drawdown shown on the 8-hour pumping test performed by Jim's Welding & Pumps on February 13, 2020 of 83 feet.

During the remainder of the data series, groundwater levels gained during precipitation events in October, November, and December 2024 by approximately 9 feet to an average value of 2,429 feet NAVD88 by the end of the data set.

The hydrograph representing the groundwater elevation over time in Well 2 is presented on the following page as Exhibit 4. The ground surface shown corresponds to 2,562 feet NAVD88 at the approximate well head elevation, and the bottom of the well is 305 feet deeper at an elevation of 2,257 feet NAVD88.

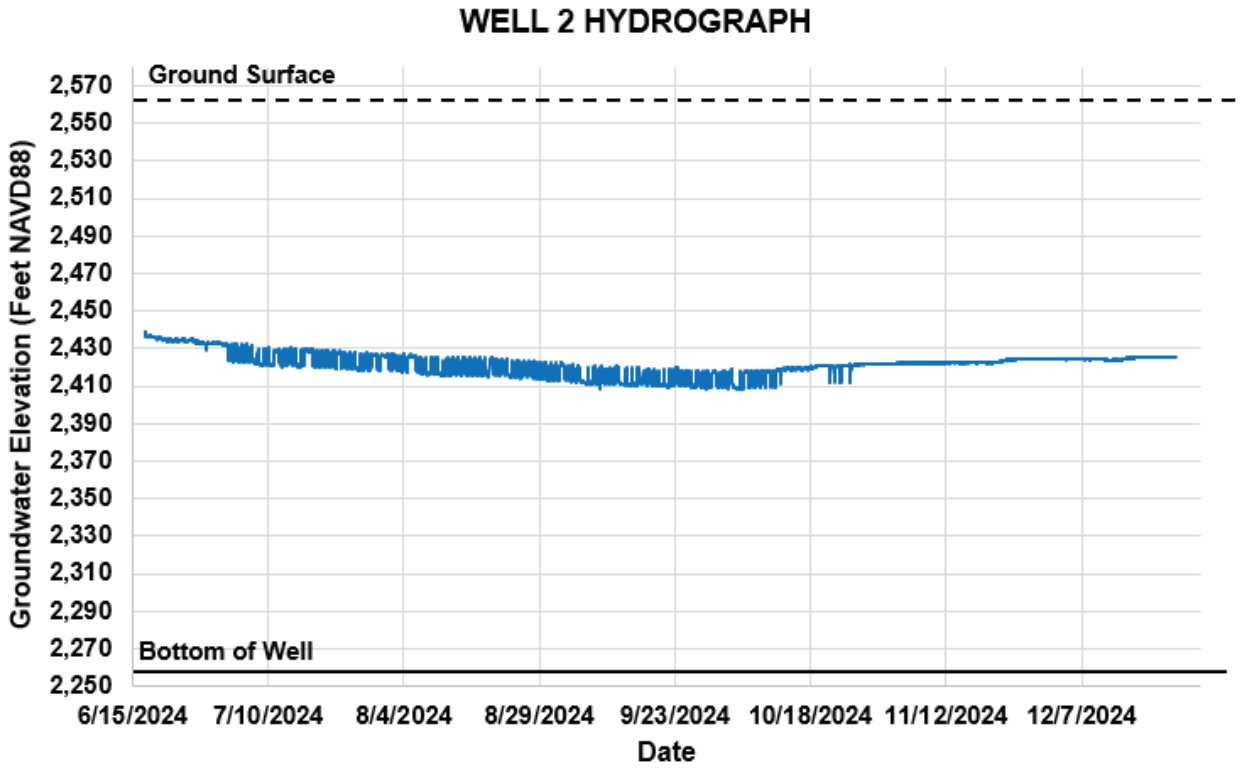


Exhibit 4 – Well 2 Hydrograph

The groundwater elevations exhibited in the Well 2 Hydrograph ranged from approximately 2,437 feet NAVD88 in June to lows of approximately 2,416 feet NAVD88 in October during pump shutoff. This indicates that there was a decline in groundwater levels at Well 2 of approximately 21 feet between June and October 2024. This decline can be attributed to seasonal fluctuations, regional groundwater pumping, and project site groundwater pumping to provide water supply for the 20-AC cannabis farm. Drawdown values during pumping were approximately 10 feet and groundwater levels generally rebounded back to pre-pumping levels within 60 minutes of cessation of pumping. During the remainder of the data series, groundwater levels gained during precipitation events in October, November, and December 2024 by approximately 10 feet to an average value of 2,426 feet NAVD88 by the end of the data set.

6.0 CONCLUSIONS

The results of the study have indicated that:

- The existing annual water demand provided by 1833 DS was 58.86 AFY, and the annual total water demand for the proposed project was estimated to be 107.37 AFY. Existing non-project groundwater usage within the CIA was estimated to be 77.25, and future non-project groundwater usage was estimated to be approximately 96.25 AFY. As such, the future total annual CIA water demand including the proposed project is approximately 203.62 AFY.

- The total volume of groundwater in storage within the area of the aquifer immediately beneath the project site was estimated to be approximately 6,593 AF. The annual total water demand for the project was estimated to be approximately 1.6 percent of the groundwater in storage underlying the project site. It is important to note that due to the interaction between groundwater and subsurface geology in the vicinity of the project site, it is not likely that the entire amount of groundwater in storage can be efficiently extracted.

- Total volume of groundwater in storage within the area of the aquifer beneath the CIA was estimated to be approximately 15,224 AF. The annual total water demand for the project was estimated to be less than one percent of the groundwater in storage underlying the CIA. The future total annual CIA water demand including the project was estimated to be approximately 1.3 percent of the groundwater in storage underlying the CIA.

- The annual total water demand for the project was estimated to be approximately 2.7 percent of average-rainfall CIA groundwater recharge and approximately 5.6 percent of drought-year CIA groundwater recharge. The future total annual CIA water demand including the project was estimated to be approximately 1.3 percent of the groundwater in storage underlying the CIA. The future total annual CIA water demand including the project was estimated to be approximately 5.2 percent of the average rainfall-year groundwater recharge, and approximately 10.6 percent of the drought-year groundwater recharge.

- Based on the available data and the distance drawdown evaluation described herein, including the associated assumptions for both the drawdown model and the well characteristics implied from the pumping test, the pumping regimen under the MDD scenario appears to be unlikely to result in appreciable drawdown in off-site water supply wells.

- Groundwater elevations in Well 1 and Well 2 declined approximately 17 and 21 feet, respectively, from June through October, and gained back approximately 9 and 10 feet, respectively from October through December under non-pumping conditions.

7.0 LIMITATIONS

This WAA was prepared in accordance with generally accepted standards of professional hydrogeologic and civil engineering principles and practices at the place and time this study was performed. This warranty is in lieu of all other warranties, either expressed or implied. The conclusions presented herein are based on information made available to EBA by others, and include professional interpretations based on limited research and data. Based on these circumstances, the decision to conduct additional investigative work, including a longer duration pumping test to further support the findings and conclusions presented herein is the sole responsibility of 1833 DS. The results of this WAA and the conclusions contained herein are dependent upon the accuracy of the estimated future water usage for the project which was developed based upon information provided by others. No guarantee

is made that groundwater of sufficient quantity or quality will be found in any specific depth or interval nor that pumping will not affect quality nor quantity of water found. This WAA has been prepared solely for 1833 DS and any reliance on this WAA by third parties shall be at such party's sole risk.

8.0 CLOSING

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

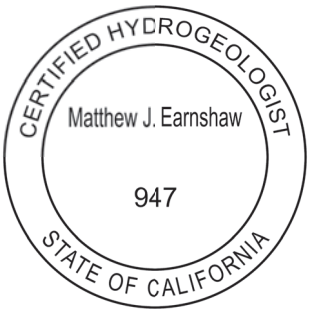
Sincerely,

EBA ENGINEERING

Brian M. Wallace, PE, MS, MBA, QSD
Project Engineer

Matthew Earnshaw

Digitally signed by Matthew Earnshaw
Date: 2025.01.13 17:41:27 -08'00'



Matthew J. Earnshaw, PG, CHg, CEG, QSD
Vice President – Senior Hydrogeologist

APPENDICES

Appendix A – Figures
Appendix B – Acreage Determination Plat (Prepared by Conser Land Surveying)
Appendix C – Project Site Well Completion Reports
Appendix D – Pumping Test Data and Reports
Appendix E – Off-Site Well Completion Reports
Appendix F – Weekly Groundwater Demand Data (Prepared by 1833 DS)
Appendix G – Drought Management Plan

9.0 REFERENCES

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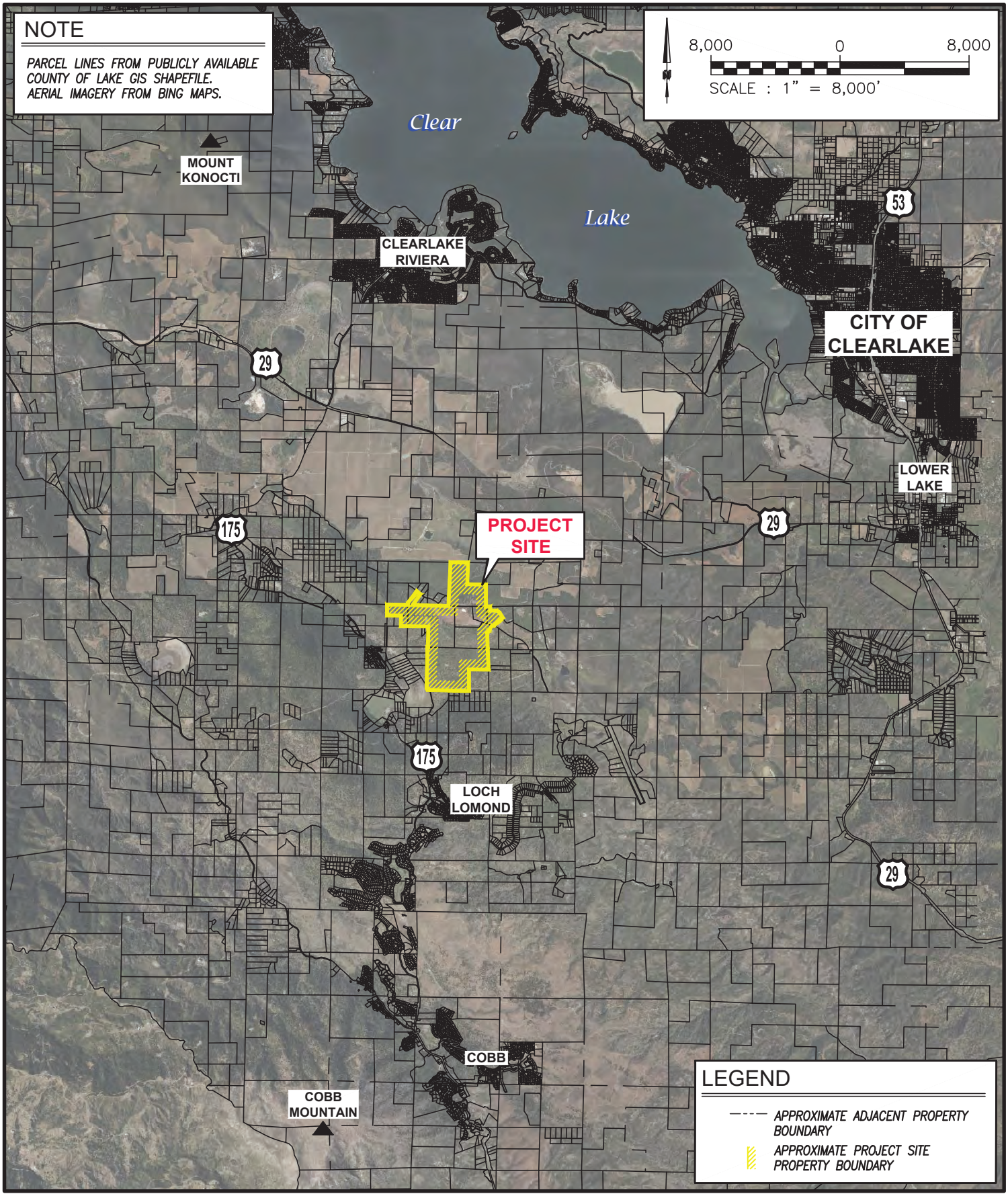
APPENDIX A

FIGURES



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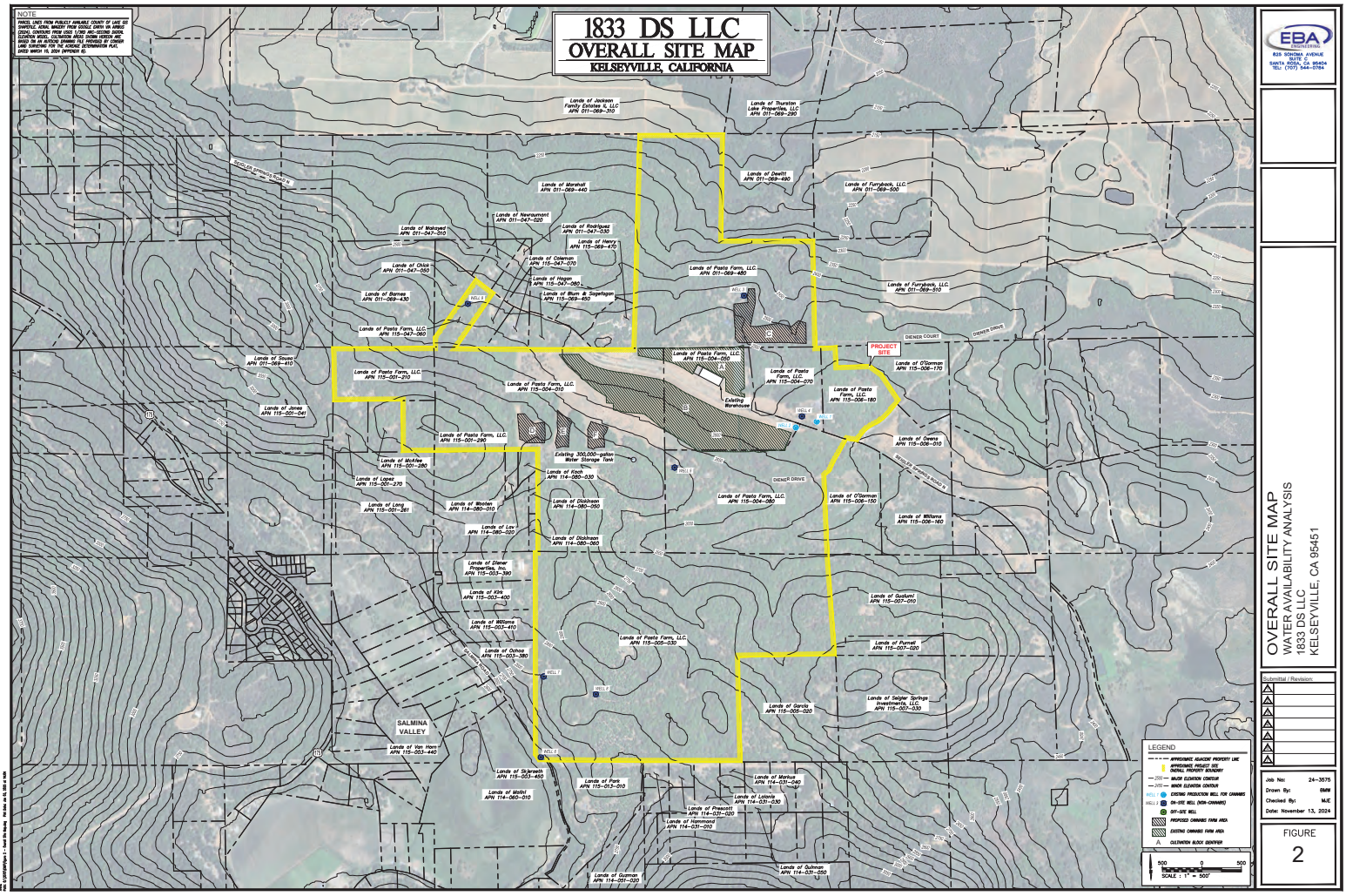
SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784

LOCATION MAP

WATER AVAILABILITY ANALYSIS
1833 DS LLC
KELSEYVILLE, CA 95451

FIGURE
1
24-3575



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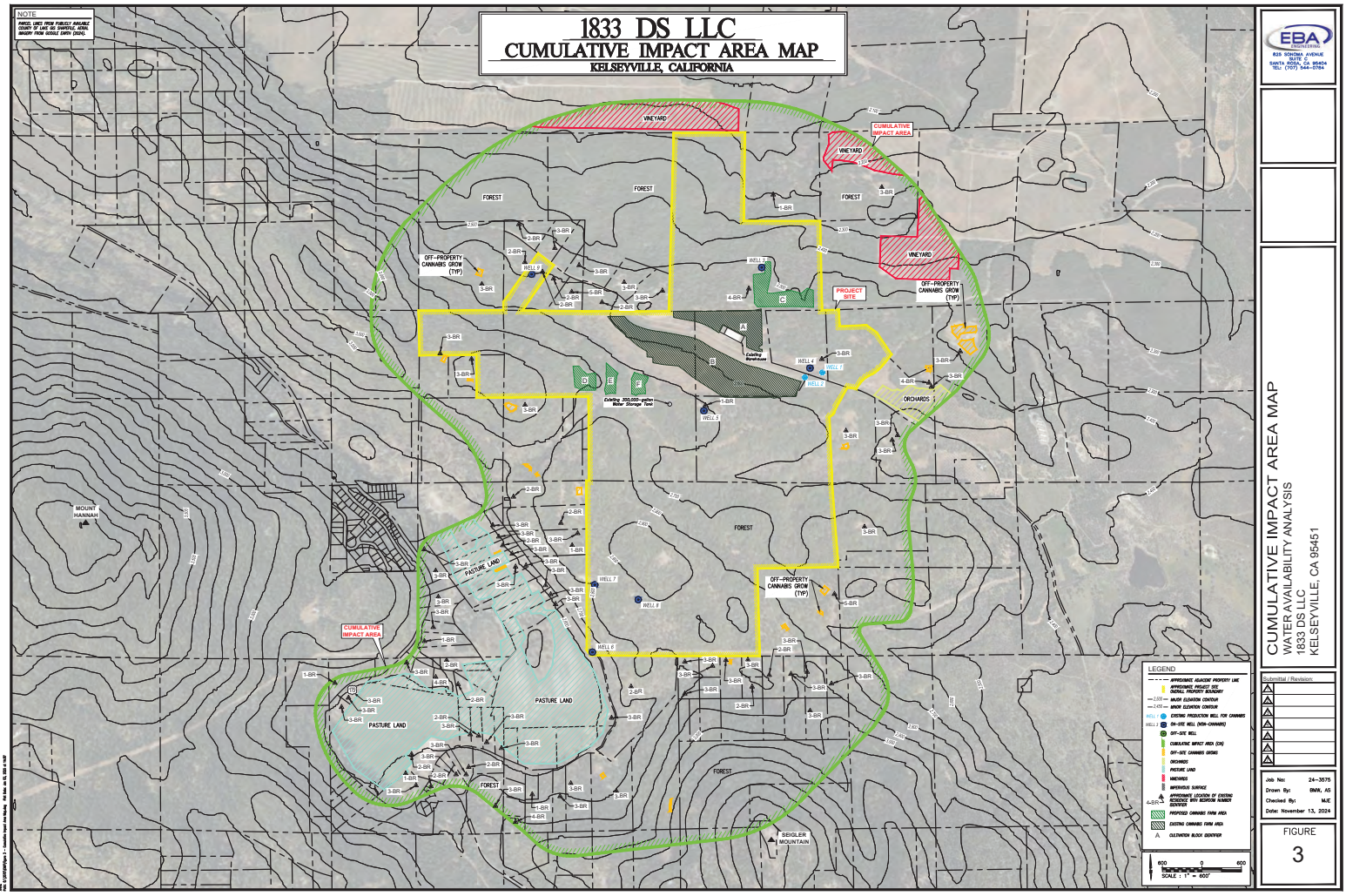
OVERALL SITE MAP
WATER AVAILABILITY ANALYSIS
1833 DS LLC
KELSEYVILLE, CA 95451

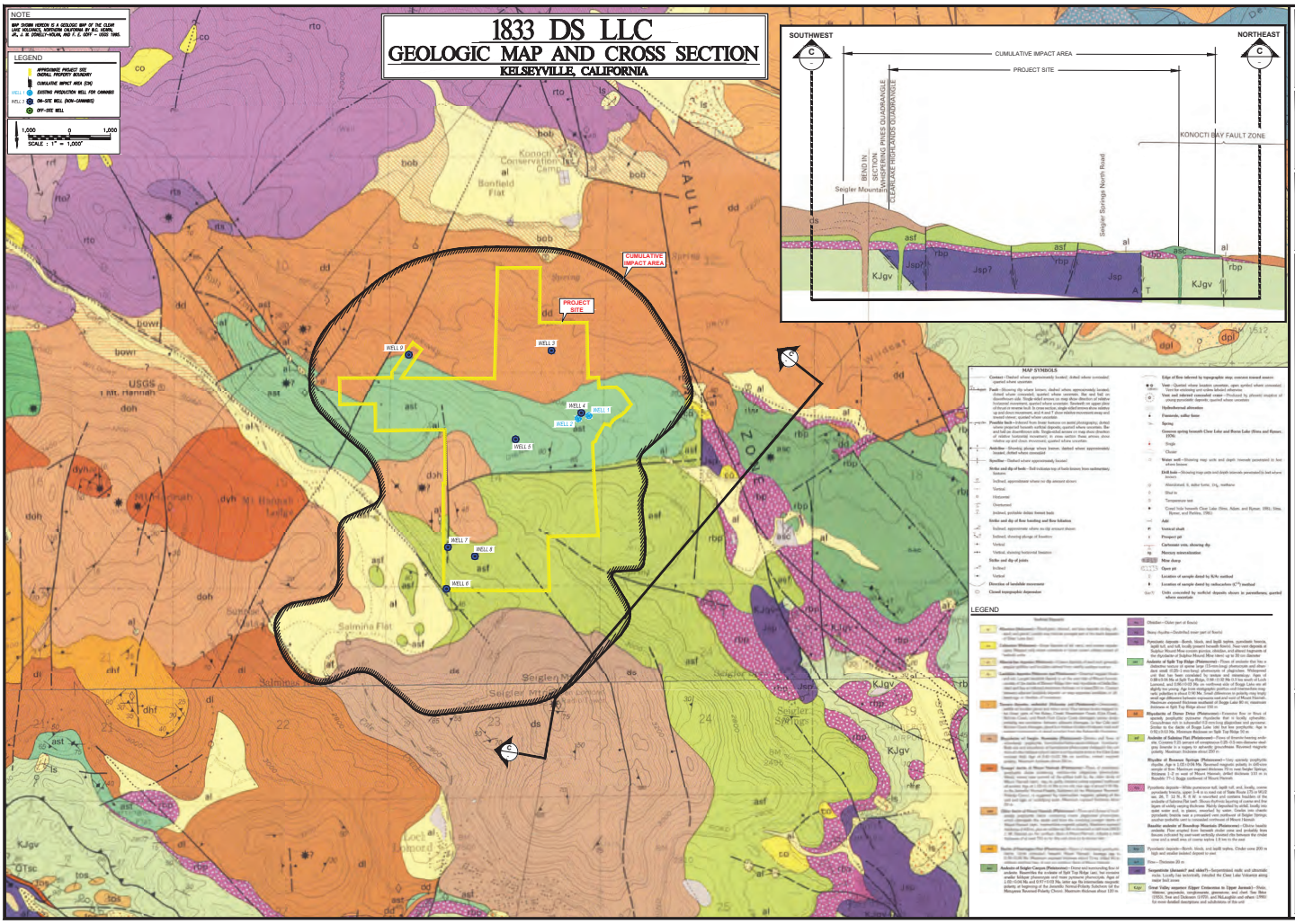
Submittal / Revision:

Job No: 24-3575
Drawn By: BMW
Checked By: MJE
Date: November 13, 2024

FIGURE
2


NOTE
PARCEL LINES FROM PUBLICLY AVAILABLE COUNTY OF LAKE GIS SHAPEFILE. AERIAL IMAGERY FROM GOOGLE EARTH (2024).
1833 DS LLC
CUMULATIVE IMPACT AREA MAP
KELSEYVILLE, CALIFORNIA
VINEYARD
CUMULATIVE IMPACT AREA
FOREST
OFF-PROPERTY CANNABIS GROW (TYP)
PROJECT SITE
Existing Warehouse
Existing 350,000-gallon Water Storage Tank
ORCHARDS
PASTURE LAND
MOUNT HANNAH
SEIGLER MOUNTAIN
WELL 1
WELL 2
WELL 3
WELL 4
WELL 5
WELL 6
WELL 7
WELL 8
LEGEND
SCALE : 1" = 600'
EBA ENGINEERING
825 SONOMA AVENUE
SUITE A
SANTA ROSA, CA 95404
TEL: (707) 544-0784
CUMULATIVE IMPACT AREA MAP
WATER AVAILABILITY ANALYSIS
1833 DS LLC
KELSEYVILLE, CA 95451
Submittal / Revision
Job No: 24-3575
Drawn By: BMW, AS
Checked By: MJE
Date: November 13, 2024
FIGURE
3

1833 DS LLC
GEOLOGIC MAP AND CROSS SECTION
KELSEYVILLE, CALIFORNIA



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

GEOLOGIC MAP AND CROSS SECTION
WATER AVAILABILITY ANALYSIS
1833 DS LLC
KELSEYVILLE, CA 95451

Submittal / Revision:

Job No:	24-3575
Drawn By:	AS, BMW
Checked By:	MJE
Date:	November 14, 2024

FIGURE
4

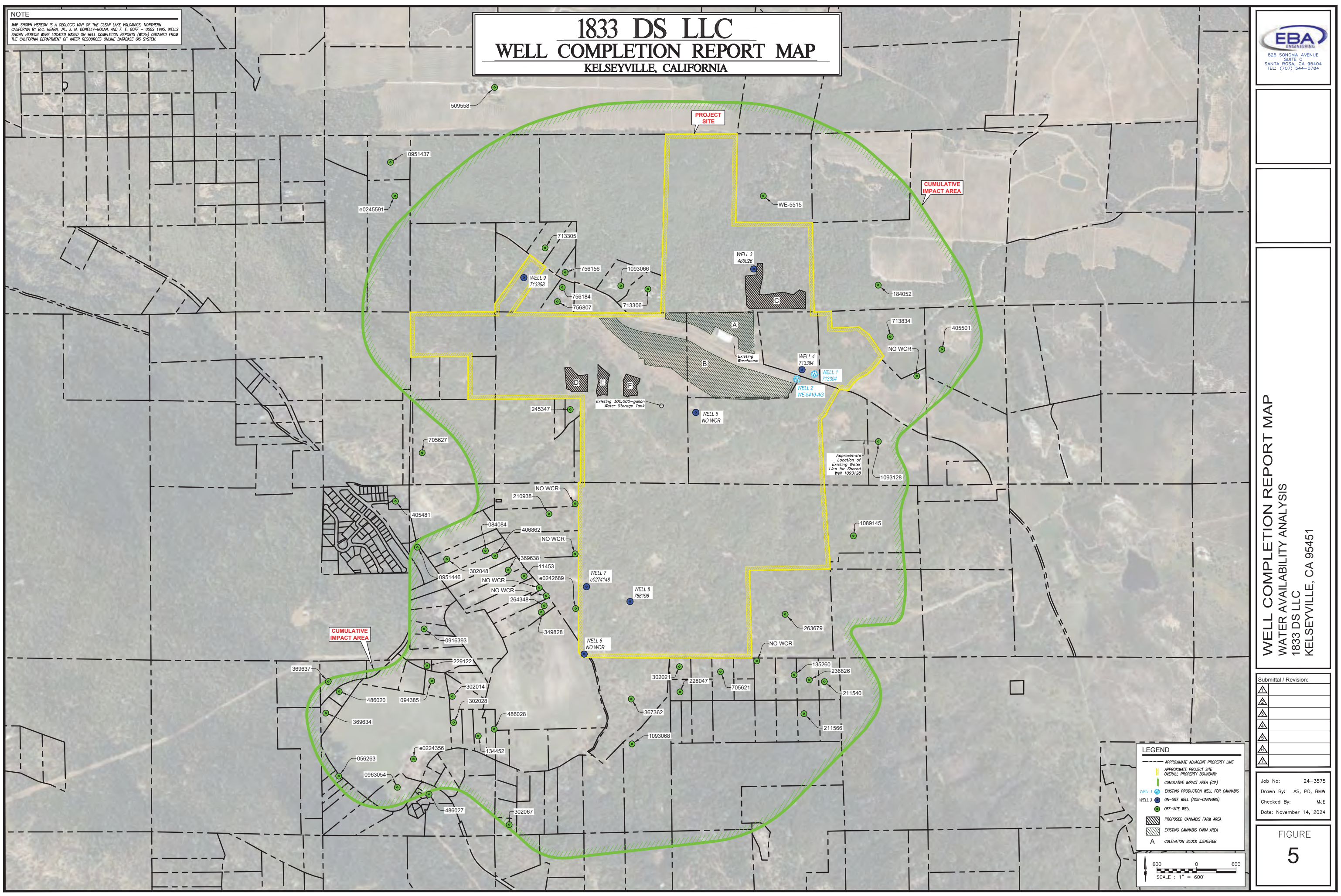

1833 DS LLC
WELL COMPLETION REPORT MAP
KELSEYVILLE, CALIFORNIA
NOTE
MAP SHOWN HEREON IS A GEOLOGIC MAP OF THE CLEAR LAKE VOLCANICS, NORTHERN CALIFORNIA BY B.C. HEARN, JR., J. M. DONELLY-NOLAN, AND F. E. GOFF – USGS 1995. WELLS SHOWN HEREON WERE LOCATED BASED ON WELL COMPLETION REPORTS (WCRs) OBTAINED FROM THE CALIFORNIA DEPARTMENT OF WATER RESOURCES ONLINE DATABASE GIS SYSTEM.
PROJECT SITE
CUMULATIVE IMPACT AREA
WELL 9
713358
WELL 3
486026
WE-5515
WELL 4
713384
WELL 1
713304
WELL 2
WE-5410-AG
WELL 5
NO WCR
WELL 7
e0274148
WELL 8
756196
WELL 6
NO WCR
Existing Warehouse
Existing 300,000-gallon Water Storage Tank
Approximate Location of Existing Water Line for Shared Well 1093128
A
B
C
D
E
F
LEGEND
APPROXIMATE ADJACENT PROPERTY LINE
APPROXIMATE PROJECT SITE OVERALL PROPERTY BOUNDARY
CUMULATIVE IMPACT AREA (CIA)
EXISTING PRODUCTION WELL FOR CANNABIS
ON-SITE WELL (NON-CANNABIS)
OFF-SITE WELL
PROPOSED CANNABIS FARM AREA
EXISTING CANNABIS FARM AREA
CULTIVATION BLOCK IDENTIFIER
600 0 600
SCALE : 1" = 600'
EBA ENGINEERING
825 SONOMA AVENUE SUITE C
SANTA ROSA, CA 95404
TEL: (707) 544-0784
WELL COMPLETION REPORT MAP
WATER AVAILABILITY ANALYSIS
1833 DS LLC
KELSEYVILLE, CA 95451
Submittal / Revision:
Job No: 24-3575
Drawn By: AS, PD, BMW
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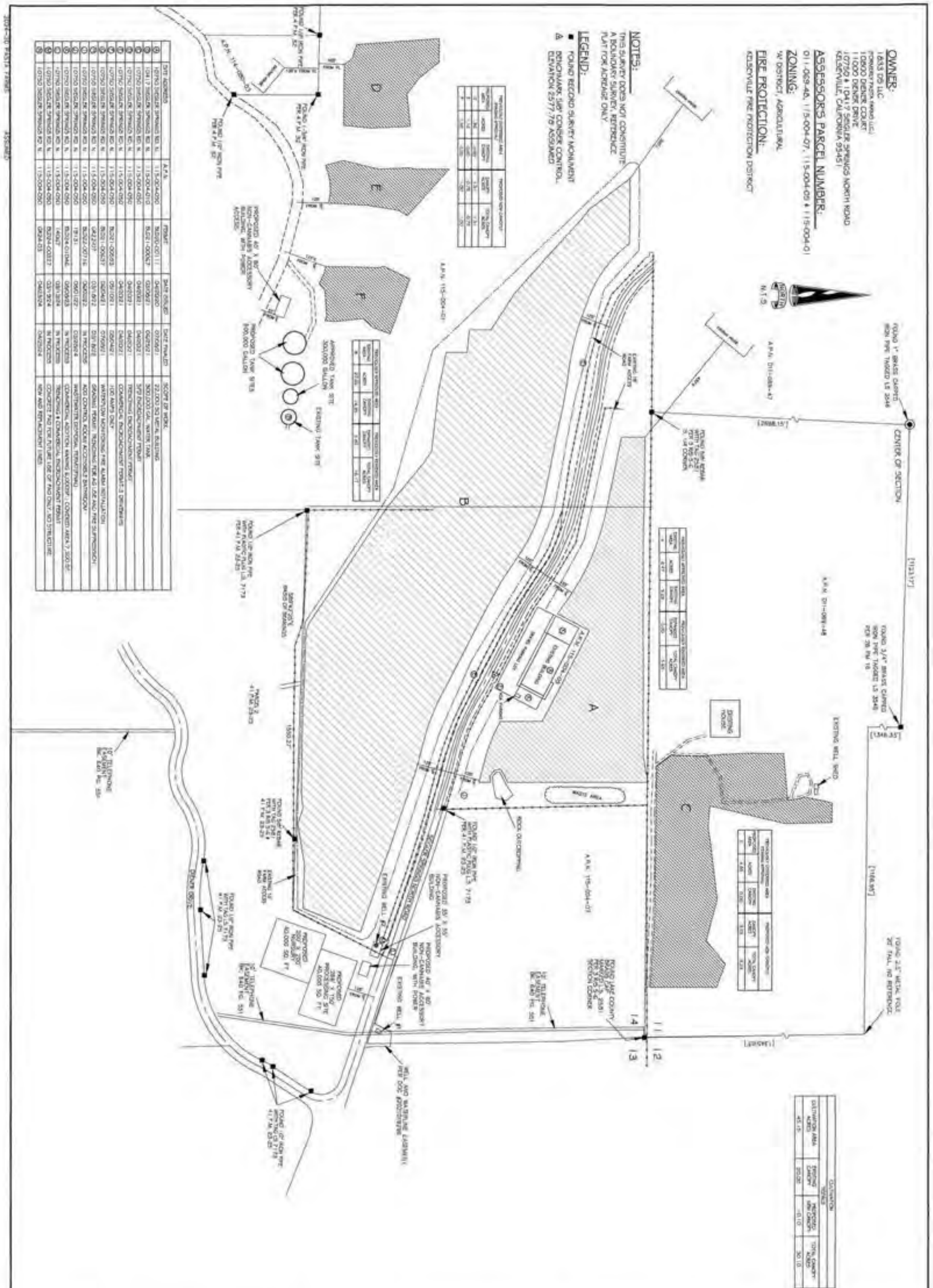
FIGURE
5

APPENDIX B

ACREAGE DETERMINATION PLAT
(PREPARED BY CONSER LAND SURVEYING)



ACREAGE DETERMINATION PLAT

FOR

1833 DS LLC (FORMERLY PASTA FARM LLC)

BEING A PORTION OF THE NORTH HALF OF SECTION 14

TOWNSHIP 12 NORTH, RANGE 8 WEST, M.D.B.&M.

LAKE — LAKE COUNTY — CALIFORNIA

Conner Land Surveying
650 SOUTH MAIN STREET
LAKEPORT, CALIFORNIA 95453
PHONE (707) 263-5512
FAX (707) 263-0455

JOB NO. 2024-10
ACAD FILE 24-2002
DESIGNED SAM EDWARDS
DRAWN CS
CHECKED CS
DATE 12-13-2024

SHEET 1 OF 1 SHEETS