Cannabis Operation

8531 High Valley Road
Clearlake Oaks, CA 95423

LIU FARM

PROPERTY MANAGEMENT PLAN (PMP) FOR CANNABIS OPERATIONS

Risk Level: Tier 2, Low Risk

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Project Number: 1671-19

Project Contacts

PROJECT INFORMATION

Name of Project:	Cannabis Operations Project
Project Location:	8531 High Valley Road, Clearlake Oaks, CA 95423
APN:	006-003-34
Zoning:	RL

CULTIVATOR INFORMATION

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Section 1 Air Quality

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses, in Lake County, California.

1.1 PURPOSE

Liu Farm's Air Quality Management Plan (AQMP) is designed to promote health, safety, welfare, environmental quality, and reduce potential for nuisance.

The Air Quality Management Plan includes measures to monitor and evaluate the performance and implementation of the plan, as well as ensure that all data and information is reported to the appropriate local agencies.

1.2 SCOPE

The Liu Farm's Air Quality Management Plan is as follows:

- Identifying equipment and activities which may cause odor, contaminates, or other air quality nuisance;
- Establishing responsible parties and best management practices if nuisance complaints occur;
- Mitigating the amount of air pollution and particulates that are generated and emitted during the build-out and expansion of Liu Farm's cultivation site;
- Minimizing employee exposure to contaminants and particulates that may be harmful to their health, including areas where cannabis plant may be dried, cured, trimmed, packaged or handled;
- All employees are required to follow the procedures outlined in this plan.

1.3 OVERVIEW

Liu Farm will cultivate cannabis using organic methods and preventative pest management strategies along with predator insect defense introduction, and therefore we anticipate generating a minimal amount of air pollution or particulates that may pose any risk of harm to environment and/or any individual working at or near the cultivation site. Liu Farms cultivation site is located in a remote area off of High Valley Road. The cultivation site will comply to all reasonable complaints filed by neighbors within 1,000 feet of the proposed site. Liu Farm's shall plant Mint, Peppermint, Rosemary, Thyme, Basil, and Onions around the perimeter of the proposed cultivation site to counteract the smell during the most fragrant part of the year from September to October. If there is an odor complaint Liu Farms will respond immediately with a phone call and immediate attention to the complaint filed.

1.4 ROLES AND RESPONSIBILITIES

Meili Liu, Director of Cultivation will be personally responsible for responding to any complaints by neighbors.

Liu Farm will supply neighboring landowners with the personal contact information for Meili Liu.

1.5 MINIMIZING ODOR, AIR POLLUTION AND PARTICULATES

Liu Farm anticipates the following sources to be the most significant emitters of odor, air pollutants and particulates. However, we do not anticipate any single source or combined sources to be harmful or detrimental to the neighboring residences or the air quality of Lake County.

Sources/Activities:

- Dust from gravel road and cultivation soil from site;
- Emission from gas powered tractor, wood chipper, and other equipment;
- Odor from processing facility and cultivation site;

DUST FROM GRAVEL ROAD (BMPs)

Liu Farm understands that unpaved roads can be a potential source of air pollutants. This problem generally occurs during the dry season from May through October. Liu Farm will have BMPs in place to mitigate particulate matter from entering the air from vehicles of visitors or employees. Mainly, Liu Farms will have traffic signs indicating desired vehicle speed. The property road will be well maintained and monitored regularly for quality of its surfacing. Possible mitigation measures for reducing particulate matter produced by gravel road travel includes, but is not limited to the following:

- Hiring a water truck as needed to wet the road surface and reduce particulate generation;
- Maintaining the surface of the road; or as needed to reduce particulate matter;
- Reducing the amount of travel on dirt roads through efficient management and enforcing strict speed limits on all road on property;
- Consolidate activities like solid waste removal and supply deliveries to as few per possible per week.

DUST GENERATION FROM SITE (BMPs)

Liu Farm understands that there is potential for the generation of particulate matter during soil disturbance activities. The following best management practices will be employed to reduce this risk:

- Establish a full, year-round ground cover within the cultivation site to limit particulate generation during work activities;
- Limit soil disturbance activities to periods when enough moisture is present in the soil to limit particulate generation;
- The actual cultivation site will be mulched or planted into cover crop as soon as possible after any activities that disturb the surface of the soil.

EMMISION FROM TRACTOR AND OTHER EQUIPMENT (BMPs)

Liu Farm expects to use the following equipment, which could impact air quality, for cannabis cultivation related activities:

- Gas powered back-up generator
- Gas powered brush cutter

In order to mitigate potential effects on air quality from the named farm equipment, Liu Farm will ensure that this equipment is used on a minimal basis and all equipment is properly maintained to ensure efficient operation.

ODOR FROM PROCESSING FACILITY(BMPs)

Lui Farm is not proposing processing facilities.

POINT SOURCE CONTROL MANAGEMENT

No materials will be used such as paints, composite wood, adhesives, and sealants that have the potential for significant emissions. Construction areas, if any, will be isolated to prevent contaminating non-construction areas.

1.6 ODOR COMPLAINT OR NUISANCE MANAGEMENT (BMPS)

Meili Liu will be designated as the responsible party for odor complaints. She will be trained to take the following steps in response to an odor complaint.

- Should an odor complaint be received, he will respond as soon as possible or within 12 hours of receiving the complaint to discuss the issue, recording time, date and person affected, and then will immediately stop all activities that may cause the odor;
- If she believes that the odor drift was caused by the wind, she will stop operations for one hour until the odor dissipates or until the direction of the wind changes, at which point he will restart operations;
- If the complaint occurs for a second time in a period of 8 hours, she will halt operations for the day. In the case that the odor is the result of the receiving or storage of compost, Liu Farm will follow the following practices:
    - Consider blanketing the compost with non-odiferous material;
    - Expedite the receiving process.

ADDITIONAL ODOR MITIGATION PRACTICES FOR OUTDOOR CULTIVATION

- Planting hedge rows of native flowering shrubs with coinciding flowering cycles to cannabis, if necessary;

- Development of misting system which serves to increase ambient humidity in the cultivation site and reduce offsite odor drift;

Liu Farm will monitor and document the performance of the Air Quality Management Plan implemented at the premises.

On an annual basis, Liu Farm will review all documentation pertaining to the performance of the Air Quality Management Plan as to determine if the risk of nuisance odors is within acceptable tolerances or ranges, or can be mitigated further by implementing new best management practices.

1.7 REPORTING PERFORMANCE OF AQMP

All data and information will be made available to Lake County Community Development Staff, and the Lake County Air Quality Management District as required or upon request.

1.8 ONGOING REVIEW

Director of Cultivation, Meili Liu, will review all procedures in the AQMP once a year, or as needed; and she will take action to ensure full compliance with local, state, and federal regulations that pertain to air quality.

Section 2 Cultural Resources

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California and as such will adopt a Cultural Resources Plan.

2.1 PURPOSE

The Cultural Resources Plan (CRP) is intended to protect the cultural, historical, archaeological, and paleontological resources on the lot of record where the permitted activity is located.

In-line with the goals of Lake County, Liu Farm's CRP includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported or available upon request.

2.2 SCOPE

Liu Farm CRP focuses on the following: Description of the procedure if cultural, historical, archaeological, or paleontological resources are found on property. All employees are required to follow the procedures outlined in this plan. Any deviations from this plan must be immediately brought to the attention of Meili Liu, Director of Cultivation.

2.3 OVERVIEW

A cultural resources survey was conducted at 8531 High Valley Road in Clearlake Oaks, on March 7, 2020, by Wolf Creek Archeology. The surveyed area consisted of approximately 20 acres, encompassing the proposed cultivation areas on Liu Farm on the subject parcel. No "significant" cultural resources were discovered within the project boundaries. There were also letters sent out to all the local reservations and tribes associated with this location. There was no record of any archeological resources found on the parcel (APN 006-003-34) including the proposed cultivation area.

2.4 IF CULTURAL RESOURCES ARE DISCOVERED (BMPS)

All activities in the vicinity of the find(s) will be temporarily ceased;

- Contact will be made with a qualified archeologist to evaluate the find(s) and to recommend mitigation procedures, if necessary. All evaluation and mitigation procedures to be in accordance with Section 15064.5 of the California Environmental Quality Act per Wolf Creek Archeology recommendations.

Liu Farm does not expect any expansion to the cultivation site; however, before any expansion of current site or development of property is commenced, a revised property management plan and site plan will be submitted to the appropriate jurisdictions by Meili Liu, Director of Cultivation.

Section 3 Energy Usage

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California. Upon receiving permits from Lake County, CA, Liu Farm will implement this Energy Plan.

3.1 PURPOSE

Liu Farm has identified energy management strategies and technology that will reduce the carbon footprint generated from the cultivation of cannabis. The purpose of the Energy Management Plan (EMP) is to outline objectives and goals for Liu Farm to achieve and identify key strategies and operational procedures that will reduce energy use and consumption.

Liu Farm's Energy Management Plan includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported to Lake County and the proper local agencies.

3.2 SCOPE

The Liu Farm Energy Management Plan focuses on the following:

- Monitoring of energy consumption;
- Establishing a benchmark for performance and efficiency;
- Setting goals for alternative energy and reduction of energy

3.3 OVERVIEW

The EMP applies to all operations performed at Liu Farm's cultivation site and that consume energy resources. This includes the usage of all machinery used during the cultivation process cannabis.

The primary goal and objective for the EMP is to establish reliable baseline metrics and benchmark standards for the performance and efficiency of Liu Farm's cultivation site. The Energy Management Plan will track the consumption of:

- Electricity;
- Gasoline and Diesel Fuel;
- All employees are required to follow the procedures outlined in this plan. Any deviations from this plan must be immediately brought to the attention of Meili Liu, Director of Cultivation.

3.4 ENERGY CALCULATION

The following is energy calculation for the proposed permits:

Appliance	Number in Use	Watts/Unit	Hrs./Day	Total Watts/day
Whole Space AC	1	7125	4	28,500
Computers	1	120	5	600
Vacuum	1	650	.5	325
Wireless Router	1	7	24	168
Coffee Maker	1	1500	.5	750
Phone Charger	1	5	10	500
Security System	1	450	24	10,800
Water Pump	9	2000	2	36,000

TOTAL WATTS PER DAY	77643
KWh/DAY	78
KWh/MONTH	2,340

INDOOR ENERGY CALCULATIONS

Indoor cultivation is not proposed for this project. Energy calculations from appliances within ancillary structures are provided above. A generator will be onsite as supplementary power during inclement weather. For more information and energy calculations please refer to Appendix B.

3.5 ENERGY (BMPS)

Liu Farm will implement the following best management practices:

- Provide employees with guidelines for efficient practices;
- Minimize use and turn off lights and unnecessary electronics;
- Conduct annual employee energy efficiency training;
- Use energy efficiency features in all technology;
- Aim for new construction to be net zero energy;
- Non-peak use of pumps, motors, and other energy sources;
- Build shading for buildings and other facilities to reduce load.

ENERGY MANAGEMENT (BMPs) To develop and implement an effective Energy Management Plan, Liu Farm will:

- Have an energy assessment conducted by local utility service providers;
- Log and maintain electricity and natural gas bills for five years;
- Log and maintain fuel consumption annually;
- Establish goals for energy conservation;
- Maintain accurate recordkeeping as to the cultivation/production;
- Make records and all data available;
- Adjust strategies as needed to meet energy conservation goals.

ALTERNATIVE ENERGY

Liu Farm plans to install a solar array at its grow site to reduce energy consumption. Liu Farm intends to operate at 50% alternative energy use by Jan 1, 2026. Alternative energy uses include solar panels and hydroelectric power. Solar panel size: will be determined upon solar consultant site visit and the information will be added to the report as necessary.

ENERGY CONSERVATION MEASURES

Due to global climate change increasing the concern for public health and environmental impact, California has enacted laws to offset greenhouse gas emissions. As recommended by the Department's Literature Review on the Impacts of Cannabis Cultivation, the cultivator is required to show evidence of carbon offsets. Liu Farms will be in compliance with CCR Title 3, Division 8, Chapter 1, Section 8305. This project proposes being 50% solar powered energy or alternative for cultivation purposes by summer 2026.

3.6 MONITORING AND BENCHMARKING PERFORMANCE OF EMP

Liu Farm is committed to benchmarking and reducing energy consumption relative to the site's expansion and annual consumption goals. To set a benchmark, analysis will be performed on the following:

- Machinery required for the cultivation of and their efficiency;
- Energy saving alternatives to machinery;
- Operational procedures

3.7 REPORTING PERFORMANCE OF EMP

The result of energy monitoring readings shall be recorded on standard monitoring data forms. All data and information will be reported to Lake County Community Development (CCD; and other interested licensing or regulatory agencies.

Section 4 Fertilizer Usage

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California, and therefore Liu Farm submits this Fertilizer Management Plan.

4.1 PURPOSE

The Fertilizer Management Plan (FMP) provides guidelines for the application of fertilizers, storage of fertilizers during the cultivation and employee training.

Liu Farm Fertilizer Plan includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported to Lake County and the proper local agencies.

4.2 SCOPE

The Liu Farm Fertilizer Management Plan focuses the following:

- Proper application and consideration of amount applied;
- The timing of applications based on seasonal and climatic conditions and the growth stage of the cannabis crop;
- Proper storage of fertilizers;
- Proper response to fertilizer spills and cleanup;
- All employees are required to follow the procedures outlined in this plan. Any deviations from this plan must be immediately brought to the attention of Meili Liu, Director of Cultivation.

4.3 OVERVIEW

Liu Farm approaches soil fertility from an organic and biological perspective. The farm shall use only amendments to the soil and only organic fertilizers. Biologically active soil optimizes plant health, reduces the need for fertilizers, increases plants abilities to fight insect infestation, and reduces irrigation rates overall. Liu Farm will require good biologically active compost, and extracts made from compost as the basis for our fertility program. Compost builds healthy soil over time, increasing the infiltration rates of rainwater, and exists in a stable form that produces little runoff. Along with compost, annual soil testing gives a complete view of the mineral balance of the soil. Amendments are added in the spring to adjust mineral balance for the growing season.

To limit infiltration and water quality degradation, Liu Farm will irrigate and apply fertilizer consistent with the proper agronomic rate. All application will be at rates that are reasonable for crop, soil, climate, special local situations, management system and type of fertilizer.

All fertilizers will be stored in their original package and may only be used in strict accordance with the product

label requirements including, but not limited to directions pertaining to application, storage and disposal of the fertilizer product. Data safety sheets for all fertilizers will be maintained always.

4.4 FERTILIZER APPLICATION (BMPS)

The following are best management practices used in application:

- Plant cover crop to boost soil fertility and protect from storm events;
- Follow the manufacturer's suggested application rates;
- Contain any spills immediately;
- Prevent off-site drift with hedges or fencing;
- Do not spray directly on surface water to allow fertilizers to
- Drift to surface water spray only when wind is blowing
- Away from surface water;
- Install buffer strips, bio-swales, or vegetation downslope of cultivation site to filter runoff of chemicals from irrigation;
- Implement Integrated Pest Management practices to avoid the need for pest control;
- The use of fertilizer shall not occur within 100 feet of any spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool.

4.5 FERTILIZER STORAGE (BMPS)

The following are best management practices used in storage:

- Ensure fertilizers are properly labeled and stored to avoid contamination through erosion, leakage, or inadvertent damage from rodents, pests, or wildlife;
- Establish and use a separate storage area for fertilizers;
- Ensure all such storage areas shall comply with the riparian setback requirements, be in a secured location in compliance with label instructions, be located outside of areas of known slope instability, and be protected from accidental ignition, weather, and wildlife;
- Ensure storage areas have appropriate secondary containment structures to protect water quality and prevent spillage, mixing, discharge, or seepage;
- Store any chemicals in a secure building or shed to prevent access by wildlife.
- Store all products that impact water quality in a manner that does not allow for runoff to surface waters;
- Segregate acids from bases; segregate inorganic oxidizing acids (e.g. nitric acid) from organic acids (e.g. acetic acid), flammables, and combustibles;

- Segregate acids from water reactive metals such as sodium, potassium, and magnesium;
- Store corrosives on lower shelves at least below eye level and in compatible secondary containers, and will not store corrosives on metal shelves;
- Store dry powder and granular fertilizers in moisture-proof plastic tubs or containers

Liu Farm will maintain an accurate log of all fertilizers to be used for the cultivation of cannabis. The log will detail the date, fertilizer type, amounts applied, method, the operator applying, and any additional inputs or amendments to the soil.

4.6 EVALUATING PERFORMANCE OF FMP

We will evaluate the yields for each batch and harvest of cannabis cultivated against the fertilizer inputs, benchmarks will include:

- Overall dry flower yield per strain, per square foot of canopy;
- Potency for each batch of crop of cannabis cultivated;
- The quantity of amendments or additional inputs used during cultivation;
- Environmental conditions during the flowering phase of plant development.

4.7 EMPLOYEE TRAINING

Liu Farm will ensure all employees and managers are trained to adhere to the following best management practices at the cultivation facility. Each employee will be trained on the following:

- Acute, chronic, and delayed effects of fertilizers;
- Routes by which fertilizers can be absorbed by the body;
- Emergency first aid for fertilizer overexposure;
- How to access emergency medical care;
- Decontamination procedures;
- Spill cleanup;
- Importance of showering with soap and warm water;
- Compliant use of fertilizers;
- How to use Personal Protective Equipment;
- Heat illness prevention, recognition, and first aid;
- Safety requirements and procedures for handling, storing, transporting and disposing;
- Warning against taking fertilizers and/or fertilizer containers home;
- Triple Rinsing;
- Proper disposal practices;

- All necessary personal protective equipment will be available, clean, and properly stored;
- Fertilizer application equipment shall be properly calibrated;
- Fertilizer wastes shall not be disposed of on the ground, into or near water, or into storm drains, or septic tanks;
- Fertilizer containers, including empties, will not be left unattended, handled, emptied, stored or disposed of in a way that would create a hazard for people animals including bees, food, feed, crops or property.

FERTILIZERS TO BE USED:

Liu Farm will be Organic Certified. Liu Farm will use soil from American Soil and Stone in Richmond, CA

The Soil Composition:

8 large bags of a high-quality organic potting soil with coco fiber and mycorrhizae
25 to 50 lbs of organic worm castings
5 lbs steamed bone meal
5 lbs Bloom bat guano
5 lbs blood meal
3 lbs rock phosphate
¾ cup Epson salts
½ cup sweet lime (dolomite)
½ cup azomite (trace elements)
2 tbsp powdered humic acid

4.8 REVIEW

Director of Cultivation, Meili Liu, will review all procedures in the Fertilizer Management Plan once a year and will take action to ensure full compliance with local, state, and federal regulations that pertain to the usage of fertilizers.

Section 5 Fish and Wildlife Protection

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California, and therefore implements the following Fish and Wildlife Management Plan.

5.1 PURPOSE

The Fish and Wildlife Plan has been designed to minimize any adverse impact on fish and wildlife and to ensure that the cultivation site and operations performed on site by Liu Farm is in no way destructive to the local habitat.

5.2 SCOPE

The Liu Farm Fish and Wildlife Management Plan (FWMP) focuses on:

- A description of fish and wildlife that live on, or seasonally inhabit the lot of record;
- A description of the habitats found on the lot of record;
- Description of the watershed found on the lot of record;
- Any potential effects the proposed cannabis cultivation may have on the fish and wildlife
- Methods to minimize adverse impacts on the fish and wildlife;
- All employees are required to follow the procedures outlined in this plan.

5.3 OVERVIEW

The parcel is approximately 158.22 acres of forested land dominated by ponderosa pine with California blue oak also prominent. Numerous additional tree species were observed sharing the canopy including Douglas-fir, knobcone pine, sugar pine, canyon live oak, interior live oak, and California bay. Liu Farms minimized impacts on fish and wildlife by applying an erosion control plan by hydroseeding with an erosion mix that consists of native species. Our erosion control methods consist of wattles, weed-free rice straw, rip rap rock in all drainage outlets, and rock check dams.

5.4 HABITATS ON LOT OF RECORD

The lot of record includes two prevailing habitat types: (1) Woodland; (2) Mixed Riparian Forest

HABITAT DESCRIPTION FOR SUBJECT REAL PROPERTY

Woodland:

Woodland is a low-density forest forming open habitats with plenty of sunlight and limited shade. Woodlands may support an understory of shrubs and herbaceous plants including grasses. Woodland may form a transition to shrubland under drier conditions or during early stages of primary or secondary succession.

Mixed Riparian Forest:

In mixed riparian forests, very tall oaks are less common, and the frequency of sapling oaks is higher. A mid story canopy of medium sized trees and tall shrubs such as sycamores and box layer are present in mixed riparian forests, composed contains a greater proportion of smaller shrubs than is present in Valley oak elder. The understory woodlands. Mixed riparian forests may be dominated by tall cottonwoods and medium sized arroyo willows and black willows.

5.5 WATERSHED DESCRIPTION

Liu Farms is located in the Lower Sacramento River Watershed. The cultivation site is greater than 50 feet from the class II water courses on the property.

5.6 IMPACT MITIGATION STRATEGIES

Liu Farm will use the following strategies to maintain our current standing and minimize any future impact on fish and wildlife:

- Be aware of wildlife mating, nesting and migration patterns on property and schedule any construction projects accordingly;
- Survey the areas of impact no more than three days prior to impact or removal;
- If work is to be conducted within the breeding season for nesting, a nesting bird survey should take place at least once before any vegetation disturbance or removal take place;
- Protect any active nests with a 50 to 100-foot buffer (species dependent) or exclusion area until the nest is no longer active;
- Perform fueling and maintenance of vehicles and equipment where absorbent spills and clean-up materials as well as spill kits are available, and such materials should be disposed of properly after use;
- Liu Farm shall not disturb aquatic or riparian habitats, such as pools, spawning sites, large wood, or shading vegetation, unless authorized under a CWA section 404 permit, CWA section 401 certification, Regional Water Board WDRs (when applicable), or a CDFW LSA Agreement;
- Liu Farm shall maintain existing, naturally occurring, riparian vegetative cover (e.g., trees, shrubs, and grasses) in aquatic habitat areas to the maximum extent possible to maintain riparian areas for stream bank stabilization, erosion control, stream shading and temperature control, sediment and chemical filtration, aquatic life support, wildlife support, and to minimize waste discharge.

5.7 EVALUATING PERFORMANCE OF FWMP

To evaluate the effectiveness of the FWMP, Liu Farm will monitor and log water quality monthly, and perform a biological assessment of the property every two years or in the case of site expansion. Biological assessment reports

and water quality logs will determine if conservation strategies are successful or if changes needed to be applied. Professional services will be rendered for biological assessments if necessary.

5.8 REPORTING PERFORMANCE OF FWMP

All data collected by Liu Farm for the purposes of conservation will be shared and reported to Lake County officials, as well as to the appropriate agency if requested:

- California Department of Fish and Wildlife
- California State Water Resources Control Board
- California Division of Water Rights;
- Meili Liu will review all procedures in the Fish and Wildlife Plan once a year. In particular, to ensure full compliance with local, state and federal regulations that pertain to the conservation of the habitat and the species of wildlife it sustains. Liu Farm has received the following certification(s):
    - Enrolled in Tier 2 of the Central Valley Regional Water Quality Control Boards Cannabis Waste Water Discharge Program;

Conservational targets, strategies and goals are with those that have been determined by the following conservational acts and programs, but not limited to as follows:

- California Endangered Species Act
- California Environmental Quality Act
- Clean Water Act
- CDFA's CalCannabis Cultivation Licensing Program
- State Water Board's Cannabis General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (Cannabis General Order) or any Waste Discharge Requirements addressing cannabis cultivation activities adopted by a Regional Water Quality Control Board (Regional Water Board)
- State Water Board's General Water Quality Certification for Cannabis Cultivation Activities (Cannabis General Water Quality Certification)
- State Water Board's Cannabis Small Irrigation Use Registration (Cannabis SIUR)
- State Water Board's Water Rights Permitting and Licensing Program. The following agencies and policies were consulted in preparation of this Biological Assessment.
- California Department of Fish and Wildlife (CDFW)
- California Department of Forestry and Fire Protection (CALFIRE)

Section 6 Operations Manual

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California; and as such proposes the following Operational Manual.

6.1 PURPOSE

The Operations Manual is designed to outline the operating procedures of the commercial cannabis cultivation site to ensure compliance with the use permit, protect the public health, safety and welfare, as well as the natural environment of Lake County.

6.2 SCOPE

The Liu Farm Operational Manual focuses on:

- Authorization for the County, its agents and employees to verify all information in the use permit
- A description of staff screening process
- Transportation data
- Hours and day of operations
- Measures taken to minimize carbon footprint
- Chemicals stored and used on site.
- All employees are required to follow the procedures outlined in this plan.

6.3 AUTHORIZATION TO VERIFY

Liu Farm authorizes Lake County agents and employees to seek verification of the information contained within the development permit or use permit applications, the Operations Manual, and the Operating Standards at any time before or after development or use permits are issued.

6.4 STAFF SCREENING

All Liu Farm employees will be required to submit fingerprints for a Live Scan criminal history search to be administered but the Lake County Sheriff's Department. Potential employee's must be approved by the LCSD to submit an application for employment. Prospective employees will be asked to submit a formal resume for review which includes education and work history, a statement as to why the employee would like to work for Liu Farm, three professional references, and three personal references. Prospective employees whose applications and references have been approved will be granted a formal interview by Meili Liu. Meeting will include presentation on general job description, responsibilities, pay scale, schedule, operating procedures, and additional company benefits. Employees will be notified within seven business days as to whether they will be hired. Liu Farm will use an online payroll platform or vendor such as PayChex or Wurk which provides cannabis companies compliance support from the interview to paycheck and taxes. We will use this system to track prospective employees, pay salaries; and save relevant information including background check results.

6.5 FACILITY OPERATION HOURS

Monday-Saturday 5am-4pm. Facility will be open to authorized staff, deliveries, and pickups. Facility will be closed to the public.

6.6 TRANSPORTATION DATA

This project proposes having up to 16 employees year round. The grow season for employees will range from March till November for mixed light cultivation and May till November for outdoor cultivation. The projects estimates having up to 8 work trucks for employees making a round trip to the site daily. Any deliveries to the project site will be scheduled in advance to minimize daily trips as much as possible. The project has fourteen regular parking spaces and two handicap parking space per Article 46.11. Transportation data will be documented and reviewed annually for performance standards and possible methods to reduce daily trips.

6.7 FACILITY CARBON FOOTPRINT

Liu Farm recognizes that the most sustainable source of power is the sun, and is committed to growing 100% sun grown cannabis, with as little supplemental lighting as possible. Efforts will be made to minimize the use of fossil fuels through adaptation of green technologies, and equipment used that produce emissions will be regularly maintained and adhere to all applicable emissions standards. For indoor cultivation, Liu Farm will gradually be switching from grid power to solar power to minimize carbon footprint.

6.8 CHEMICAL STORAGE AND EFFLUENT

Liu Farm uses Organic farming practices by only amending the soil. Organic farming means that no chemical products are allowed for use in the cannabis facility, and no such chemicals will be stored on site. Nontoxic alternatives to conventional cleaning products and building materials will be sourced and used whenever possible. The facility may use small volumes of chemical sanitation products to maintain a sterile work environment inside the facility. These chemicals will be stored in the manner and location described in the Hazardous Waste Plan. No effluent is expected to be produced at the facility.

6.9 SITE MAINTENANCE PROTOCOL

When not in use, all Liu Farm equipment, will be stored in the proper designated area upon completion of the task required. Employees will conduct a daily scan of the site to ensure all materials used during the workday have been return to designated storage area in an organized fashion. Any refuse created during the workday will be placed in the proper waste disposal receptacle at the end of each shift, or at a minimum at the completion of the assigned task. Any refuse which poses a risk for contamination or personal injury shall be disposed of immediately. While Liu Farm allows grasses and cover crops to grow tall during the rainy season as a soil building technique, when spring seasonal work begins, site will be mowed and trimmed to ensure safe and sanitary working conditions.

Roads, parking areas, and yards shall be maintained at all times to prevent particulate generation and potential illicit

discharges of storm water. Adequate drainage features will be installed at the time of construction and dirt surface will be maintained as needed. Rolling dips, out sloping and vegetated swales will be used as potential drainage features if the cultivate site shows signs of poor drainage. If swales are used, infiltration basins will be added to avoid storm water discharge.

The gradual slope of the proposed cultivation site makes it unlikely that the site will require specialized drainage features. Vegetated ground cover will be established over the entire site as soon as possible, and the site will be surrounded on all sides by a densely vegetated buffer strip capable of absorbing any sheet flow or runoff from the site. If the site exhibits poor drainage, techniques mentioned above will be developed. If the site requires a wastewater treatment facility, the facility will be designed, constructed, and maintained to ensure sanitary working conditions, eliminate the possibility of contamination, and protect working and consumer safety.

6.10 PLANTING/CULTIVATION PLAN

The cannabis cultivation plan will include planting for seven acres of outdoor cultivation. Upon approval of the major use permit, raised planter beds will continue to be utilized. Outdoor cultivation planting will begin in June and harvesting will commence in November. Upon approval of Use Permit, outdoor cultivation will occur on 7 acres with a total canopy of 304,640 square feet.

6.11 EVALUATING PERFORMANCE AND REPORTING OF THE OPERATIONS MANUAL REVIEW

Liu Farm Director of Cultivation, Meili Liu, will perform a weekly inspection of the cultivation site to ensure the guidelines of the Operations Manual are being carried out successfully, and the notes shall be logged in the Operations Manual, which is to be kept on site. Any poorly performing elements of the system or improper employee conduct will be corrected. If construction of drainage features or construction is required, all necessary permits and approvals will be acquired from the appropriate agency.

Section 7 Pest Management

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California. Liu Farm will implement the following Pest Management Plan.

7.1 PURPOSE

The Pest Management Plan (PMP) is designed to ensure that in the use of pesticides, they are used only after monitoring indicates they are needed and used with the goal of removing only the target organism, safely.

Liu Farm Pest Management Plan includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported to Lake County and the proper local agencies.

7.2 SCOPE

The Liu Farm Pest Management Plan focuses on the following:

- Pest prevention, deterrence and organic techniques;
- Employee training and safety;
- Storage of pesticides;
- Monitoring the effectiveness of the plan as well as reporting data to Lake County officials and the appropriate local agencies All employees are required to follow the procedures outlined in this plan.

7.3 OVERVIEW

Liu Farm will be a pesticide-free farm. We use an integrated ecosystem focused strategy that focuses on long-term prevention of pests and damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Instead of utilizing chemical pesticides, Liu Farm will implement proactive systems using beneficial insects to target specifically selected species as well as daily pest scouting to ensure production of the cleanest, purest, high-quality cannabis.

7.4 PEST DETERRENCE

Liu Farm practices the following techniques to minimize pest infestations:

- Minimizing dust
- Releasing predatory mites
- Hanging yellow sticky cards
- Removing any infested plant material
- The use of companion plants and other trap crops
- Using reflective mulches if necessary

Liu Farm will use organic pesticides including but not limited to:

- Neem oil
- Horticultural oil
- Sulfur
- Insecticidal soaps

PESTICIDE USAGE (BMPs) In the case, all preferred methods of pesticide prevention and eradication have proven unsuccessful, the following are best management practices for pesticide use at Liu Farm:

- Pesticides shall be applied only when pollinators are not present;
- Follow all labels and directions before, during and after the use of pesticides;
- Do not over apply pesticides;
- Pesticides are prepared and loaded on an impermeable pad at least 100 feet away from surface water bodies;
- Do not apply pesticides when pollinators are present;
- Do not spray directly into surface water and only spray when wind is blowing away from surface water bodies;
- When possible, use naturally insecticidal plants around or throughout a grow to repel a variety of flying insects and pests;
- The use of pesticides shall not be located within 100 feet of any spring, top of bank of any creek or seasonal stream, edge of lake, delineated wetland or vernal pool.
- If there is a spill or accidental discharge in or on any waters of the site, immediately notify the Office of Emergency Services so that the local health officer can decide what actions, if any, may need to be taken to protect public safety - HAZMAT SPILL NOTIFICATIONS 1 (800) 852-7550 or (916) 845-8911

7.5 WORKER PROTECTION (BMPS)

In the case of pesticide use, Liu Farm shall follow the EPA's Agricultural Workers Protection Standard by:

- Providing protections to workers and handlers from potential pesticide exposure;
- Providing training on the safe use of pesticides;
- Providing training on how to avoid exposures to pesticides;
- Training to identify pesticides exposure symptoms and how to respond and manage exposures to pesticides if they occur

Section 8 Security

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California. Upon receiving receipt of this permit Liu Farm will implement the following Security Management Plan.

8.1 PURPOSE

The purpose of the Security Management Plan (SMP) is to minimize criminal activity, provide for safe and secure working environments, protect private property, and prevent damage to the environment.

Liu Farm's Security Management Plan includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported to Lake County and the proper local agencies.

8.2 SCOPE

Liu Farm Security Management Plan focuses on the following: A description of security measures to prevent access to unauthorized personnel and protect employees including fences, sign-in/sign-out procedures, locks and alarms. A description of security measures to prevent theft or loss of cannabis and cannabis products.

All employees are required to follow the procedures outlined in this plan.

8.3 OVERVIEW

Liu Farm's Security Management Plan includes best management practices that have been established in the cannabis industry and that pertain specifically to the safe and secure operation of a cultivation site, as well as the secure storage of all cannabis and cannabis products.

The Security Management Plan is also compliant with the Emergency Regulations for Cannabis Cultivation, authored by CalCannabis, as well as the regulations established by the California Department of Public Health for state-licensed cannabis businesses.

Liu Farm will have security to minimize criminal activity, provide for safe and secure working environments, protect private property, and to prevent damage to the environment. The applicant shall provide adequate security on the premises, as approved by the Sheriff and pursuant to this section, including lighting and alarms, to ensure the safety of persons and to protect the premises from theft.

8.4 SECURITY (BMPS)

The driveway to the property has a locked gate at the entrance and there are other lockable gates at the site.

There will be no signage with the business name or signage that could otherwise be discerned by the public to indicate cannabis cultivation activities. The security camera system will record activities within the cultivation site

and immediately outside of the site 24 hours per day, 7 days per week.

The security camera system will allow for remote monitoring and maintains records for 30 days minimum. All cultivation operations are performed within an enclosed site, secured with commercial grade locks. The site is located on a property with permanent residence and will be occupied by a designated employee daily and nightly.

8.5 ONSITE SECURITY

The Cultivation Site will be protected by an 6' wire perimeter fence, with metal posts at 6' intervals. The site will be screened from public view by 90% sunblock mesh. The entrance to the site will be secured by a metal gate and remained locked by a commercial lock, at all times when no staff is present.

The site will also feature a video monitoring system with full view of the cultivation area, infrared capability, motion sensors to alert management of intruders, and the ability to address potential intruders via loud speakers built into the video monitoring equipment.

8.6 SUSPICIONS ACTIVITY PROTOCOL

All suspicious activity will be recorded via security cameras. In the event that law enforcement is required, the designated Liu Farm employee will notify the Lake County Sheriff's Department, and other agencies as appropriate and quickly as possible. The designated employee will then file a suspicious activity report, noting the time and date of the activity and keep record in a secured room on site.

If suspicious activity could result in injury or death of employee or employees, all employees will be evacuated from the premise until activity is controlled or intruder is captured.

If the suspicious activity is believed to be from an employee of Liu Farm, Meili Liu will review all security tapes which record areas where suspicious activity may have occurred. If tapes show suspicious activity was perpetrated by an employee, the employee will be asked to leave the premise and relinquish badge and access to the property. If security personnel are necessary on site for the removal of the employee, they will be notified.

If suspicious activity is believed to be conducted by a visitor, designated employee(s) will review the tapes and notify the visitor of our findings. Depending on the severity of the activity, law enforcement will be notified, and charges will be filed against the individual or party. The person or party will no longer be allowed on property.

Breach Procedures (BMPs): Property Breach: if an unauthorized individual gains access to the property, local law enforcement will be notified immediately. Meili Liu or the designated employee will determine if it is necessary to cease operations; and if necessary, notifications will be sent to all employees whom will enter nearest operational room and will lock doors and turn off lights; when determined safe, Meili Liu or the designated employee will notify

all employees.

Digital Breach: Meili Liu will immediately assess any damages and losses incurred from the event and will determine an operational recovery timeline; and will investigate all digital records, data and systems to ensure that no cyber-theft or damage has occurred and investigate all cloud-based backups to ensure that no damage has occurred.

8.7 VISITOR LOG REQUIREMENTS

Liu Farm will maintain an employee and visitor arrival and departure log, which contains, the name of the visitor, date and time of arrival and departure, and the purpose of the visit. All logs will be kept in a secured office only accessible by Liu Farm management team, in particular Meili Liu.

8.8 THEFT AND LOSS PREVENTION (BMPS)

Liu Farm employees and visitors will be under video surveillance at all times. All cannabis will be stored in a locked, secure room, accessible only to farm management. Other anti-diversion methods include:

Supervising tasks or processes with high potential for diversion (including the loading and unloading of cannabis transportation vehicles). Providing designated areas in which personnel may store and access personal items. No visitors will be allowed to the facility, with the exception of local and state agency representatives authorized to act on their behalf. Only employees with scheduled shifts may enter the property; and each employee will be required to check-in properly.

Additional surveillance cameras will be installed in areas used for employee parking in or around the cultivation site. All employees will be trained to identify suspicious activity and suspect individuals loitering around the property.

Only Liu Farm management team will be allowed to access the vault or storage for any harvested cannabis. Surveillance cameras will be installed throughout the secure storage areas, including each point of ingress/egress as to capture facial details, and allow for facial recognition as well as in all rooms where cannabis is handled.

All cannabis will be weighed, documented and logged at each stage of the processing phase, which includes drying, trimming and curing. Each plant and batch of cannabis cultivated will be properly tagged and assigned a unique identification number (UID). In addition to Track-and-Trace, an inventory tracking system will be established to prevent diversion. At the end of each day, Director of Cultivation, Meili Liu will inspect secured rooms and record inventory on a log. All in/outs of inventory will be recorded on a log, as well. These logs will be kept in secured room with extremely limited access.

EMPLOYEE VETTING – LOSS PREVENTION

Liu Farm will conduct extensive background checks of all employees hired on a full- time or seasonal basis to ensure they are in good standing with the law and do not have a previous history of theft, violence or major offenses. All employees and managers are provided a badge or ID issued by Liu Farm with required information to be worn when in restricted on areas on the farm. Information includes Liu Farm's name and license numbers, employees first and last name, and a color 2 inch by 2-inch photograph that shows the employees face.

All employees must wear their approved Employee Photo ID Badge at all times while at the cultivation site. No access to operational areas of the facility will be allowed to any employee not in possession of or wearing their ID Badge. The badge must be worn above the waist and be visible at all times.

Any employee who forgets his/her badge should immediately notify a manager to have the shift rescheduled. Only Liu Farm management team will be granted access to the secure storage rooms and secure storage vaults located on-site.

RESTRICTED AREAS – LOSS PREVENTION

The restricted areas include the cultivation site, the processing facilities, on-site office and any area with company records, access to security cameras or information related to Liu Farm. All restricted areas and point of entry and exit on the premises are securely locked using commercial-grade locks.

Liu Farm prevents the unauthorized entrance into restricted areas within the farm by controlling access to those areas by:

Limiting access to only certain personnel and for the sole purpose of executing their specific job function and duties.

Any person on the premises, except for employees and contractors of the licensee, are escorted at all times by the licensee or at least one employee of the licensee when in the limited-access areas of the premises.

CHAIN OF CUSTODY (BMPs) – LOSS PREVENTION

While in transit, raw materials and cannabis products are the most vulnerable. In particular, shipping, receiving and finalizing cannabis transactions present a security threat to Liu Farm cultivation facility.

The following practices, therefore, shall be employed:

- All shipments—incoming and/or outgoing—will occur on a scheduled basis. No unscheduled shipments

will be received or sent out for delivery.

- Liu Farm management team will verify the vendor's identity by requesting government-issued ID and checking information against a manifest of vendor drivers. Liu Farm management team will inform site supervisor that a vendor is present and escort the vendor into the facility. All shipments will take place in areas that are covered by video surveillance.
- All outgoing products will be tracked and documented using the Track-And- Trace system.
- All shipments will be verified against the shipping manifest to ensure the accuracy of the items received/being distributed - any discrepancy will result in a cancelled transaction.
- All discrepancies will be reported immediately to a member of Liu Farm management team.
- All discrepancies are to be reported to the appropriate law enforcement, local and state agencies.
- In the case of any theft, Liu Farm will notify the local law enforcement and/or the state bureau.

8.9 VIDEO SURVEILLANCE

The facility will be protected by a Lorex 4K DVR system that will monitor the entire perimeter and inside of the cultivation site, inside processing facility, the security fence, and all gates and rights-of-way in order to capture all activity in areas where cannabis is handled, tested, cured, processed or stored.

Surveillance will be conducted 24 hours a day, 365 days a year, without interruption. All video surveillance recordings will include a date and time stamp for every recorded frame and are designed to record images in high quality and high resolution to clearly capture revealing facial detail.

Video Surveillance: The site will have a complete digital video surveillance system capable at a minimum of 4K pixel resolution. The surveillance-system storage device or the cameras are transmission control protocol/ TCP/capable of being accessed through the internet for remote access 24/7. All areas recorded by the video surveillance system have adequate lighting to allow the surveillance cameras to effectively record images.

Cameras are immobile and will be installed in a manner to prevent tampering Cameras are placed in a location that allows the camera to clearly record activity occurring within 20 or more feet of all points of entry and exit on the licensed premises and allows for the clear and certain identification of any person and activities in all areas required to be filmed under subsection.

The following areas are recorded:

- Areas where cannabis goods are weighed, packed, stored, quarantined, loaded and unloaded for transportation, prepared, or moved within the premises;

- Areas where cannabis is destroyed;
- Security rooms;
- Areas storing a surveillance-system storage device with at least one camera recording the access points to the secured surveillance recording area;
- Interiors and exteriors of all entry points of the site and buildings. Cameras record continuously 24 hours per day at 30 frames per second. All interior cameras (if any) will be moisture proof and all exterior cameras will be water- proof. Cameras with infrared capabilities will be used for the perimeter fencing;
- All cameras will include motion activated sensors. All cameras will have color capability, record digitally and be capable of integrating with door alarms.

In areas with inadequate lighting for the cameras being used, sufficient lighting shall be provided to illuminate the camera's field of vision or night or infrared cameras will be utilized. The physical media or storage device on which surveillance recordings is stored and is secured in a manner to protect the recording from tampering or theft. Surveillance recordings are kept for a minimum of 30 days and recordings will be kept in a secured room in a controlled environment, separate from the rooms where the computers and monitor system are located.

Videos will be available for inspection by local law enforcement or state bureau employee(s) and can be copied and sent or transferred upon request.

8.10 INFORMATION TECHNOLOGY SECURITY (BMPS)

Liu Farm has developed the following contingency measures to ensure the security of digital records and systems that are vital to the operation of the facility. In the event of flood, fire or theft, these contingencies will allow us to resume operations as soon as operationally possible. All digital records and systems that are vital to Liu Farm will be backed-up on a weekly basis. The data backup will be stored off-site, on a cloud-based server accessible only to management level employees.

Access to digital records and systems will be highly regulated. No visitors will be allowed in the secure storage areas, operational areas, or any area where digital recordkeeping takes place. Employees will be trained on the importance of maintaining the security of all digital records and systems and will be required to sign a form of acknowledgment testifying that they have been trained, understand and are aware of all digital security measures and all access control policies.

8.11 SECURITY PERSONNEL

If Meili Liu and management deem that outside security personnel are necessary, Liu Farm will engage a local security company for security personnel to provide security services on the premises when an emergency response is necessary. All security personnel hired or contracted by Liu Farm comply with Chapters 11.4 and 11.5 of Division 3 of the Business and Professions Code.

8.12 REVIEW

Liu Farm will commission an independent annual inspection to evaluate whether the installed equipment should be updated and to review maintenance routines.

Emergency Contact Personnel: *Meili Liu (510) 468-7657; email meililiu369@gmail.com*

Section 9 Stormwater Management

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California, and accordingly is implementing the following Storm Water Management Plan.

9.1 PURPOSE

The purpose of the Storm Water Management Plan is to protect the water quality of the Lower Sacramento River Watershed and the storm water management systems managed by Lake County Department of Water Resources.

Liu Farm Storm Water Management Plan includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported to Lake County and the proper local agencies.

9.2 SCOPE

The Liu Farm Storm Water Management Plan focuses on the following: Protecting its water bodies (Class II & III water courses) from water quality degradation from activities and uses associated with cannabis cultivation such as use of topsoil, fertilizer, etc.

Liu Farm Storm Water will not discharge to adjacent water bodies or properties. Liu Farm will be in compliance with the Lake County Storm Water Management Ordinance; and Grading Ordinance. Liu Farm shall utilize best management practices for construction and post-construction activities.

All employees are required to follow the procedures outlined in this plan.

9.3 OVERVIEW

Liu Farm prepared an outdoor cultivation site in the least possible impact area for stormwater runoff. All diffused stormwater is dispersed with a large enough vegetated buffer to treat runoff. Each site and area of disturbed surface will be seeded, strawed, and have straw wattles in place. The seed protects and stabilizes the soil, the straw slows the water and the wattles filter out any unwanted contaminants. All diffused surface water shall be slowed by the mulch from the hydroseed and the straw and wattles protecting any receiving water bodies. To protect the diffused surface water in compliance with section 122.26 the stormwater system of Lake County.

Liu Farm recognizes that the protection of surface waters is paramount to the operation of an environmentally friendly cannabis farm. Surface contamination from roads is a problem in Lake County, and other rural communities.

The Liu Farm property contains existing roads for the purpose of ingress and egress to the cultivation site. The storm

water management plan will address some of the remaining smaller issues that may, under extreme precipitation events, result in distribution of sediment to waterways, to further address chronic issues associated with the existence of roads through best management practices; and to ensure that there is no risk of contamination via fertilizer or chemicals. Liu Farm has already eliminated direct storm water impacts from the road system we will continue to reduce potential risk of impacts to surface waters.

9.4 PROTECTING DOWNSTREAM WATER BODIES FROM WATER QUALITY DEGRADATION

Liu Farm will manage storm water by continuing to upgrade the road system, implement measures to prevent potential of contamination from fertilizers and chemicals, implement best management practices, and train personnel about best management practices and emergency waste discharge response.

9.5 TOPSOIL, FERTILIZERS, AND PESTICIDE RISKS

The cultivation site will include agricultural BMPs, as well as storm water BMPs that help create a healthy, and clean agricultural system. The implementation of an Integrated Pest Management creates an environment where pesticides, herbicides, and fungicides can usually be avoided and so these chemicals are not used on the farm. Not having them present is the first step in ensuring that they cannot contaminate any waterways. Well maintained biologically alive soils aid in plant nutrient uptake. All fertilizers applied are biologically based and organic in nature. Liquid fertilizer, the kind that is most likely to contaminate waterways, will not be used on site. With regard to top soil, the agricultural BMPs that insure it remains on site include, cover crops, 100% ground cover and mulches, and avoidance of mechanical compaction of the soil.

9.6 ILLIXIT NON-POINT SOURCE DISCHARGE WILL BE ELIMINATED

Liu Farm recognizes that the greatest risk of storm water discharge and potential sediment delivery to receiving waters is often from the dirt surfaced interior road system. The property road system will be maintained to reduce this risk. Liu Farm will ensure that drainage features on the existing roads are designed to avoid possible connection to receiving waters, and instead to discharge to wooded areas for infiltration. If necessary, water bars and rolling dips were installed at appropriate locations to slow the surface flow of storm water runoff and reduce flow to any culverts located on the road system. Liu Farm will consider installing 4-6 inches of 1.25 diameter rock to the surface of the road system to further slow road runoff, and capture sediment contained in the runoff.

For activities related to the cultivation of cannabis, Liu Farm intends to cultivate on areas of the property with gradual slope <30%. A year-round groundcover of native and pasture grasses will be maintained over the entire site. Disturbance activities will not be conducted during the wet season, Oct 15 to April 15, and cover crops will be used in the canopy area during the winter.

9.7 PUBLIC ROADS

High Valley Road is a county dedicated public road. The use of this public road to and from the Liu Farm property will not result in an impact to downstream hydrologic structures nor the geomorphological features of waters of the state. This is due to the fact that discharge will not increase and the turbidity of waters that are turbid will decrease do to monitoring, maintenance and systematic implementation of BMPs. This will result in a net positive impact on downstream hydrologic features, both natural and manmade.

There is no risk of increase in stream discharge from the property because soil infiltration capacity is not being decreased, storm water drainage systems such as ditches release water onto hill slopes where it infiltrates, rather than directly into streams, and there are no stream diversions.

9.8 COMPLIANCE WITH THE REQUIREMENTS OF CHAPTER 29, STORMWATER MANAGEMENT ORDINANCE OF THE LAKE COUNTY ORDINANCE

Liu Farm has reviewed the Lake County Storm Water Management Ordinance and finds the project to be in compliance with the ordinance. This project minimizes development, meets Regional Water Quality Control Board requirements, and has been enrolled in the general discharge waiver program since April 2018.

9.9 PROPOSED GRADING

Any proposed grading at the cultivation site will be done on an area with an average slope of less than 10%. This location is more than 100 feet from surface waters and has a native vegetative buffer strip intact for over 100 feet surrounding the entire garden. Any project grading will utilize all available and required BMP's and commence only once all applicable permits have been acquired.

9.10 STORMWATER (BMPS)

Liu Farm will implement a storm water management plan to protect waterways and water bodies from runoff and erosion. The property uses the following design measures and operational tactics to minimize harmful run off from reaching any water ways or water bodies.

Site Design Measures (BPMs): Locate cultivation site more than 100 feet from any spring or top bank. Locate covered storage areas more than 100 feet from any spring or top bank

Minimize compaction of highly permeable soil and use of impervious surfaces. Limit clearing and grading of native vegetation at the site to the minimum area needed to build the project, allow access and provide fire protection. Minimize use of impervious surfaces by concentrating development on the least- sensitive portions of the site, while leaving the remaining land in a natural, undisturbed state.

Erosion and Sentiment Prevention Methods (BMPs) Hire an experienced, reputable, and licensed operator to conduct operations if heavy equipment is required to develop roads and the grow site. Minimize grading and soil

disturbance during grow site development. Native grass seed will be applied outside of the cultivation area to disturbed areas before installation of mats/blankets and wattles. Storm water drainage structures should not discharge onto unstable slopes, earthen fills, or directly to a watercourse. Drainage structures should discharge onto stable areas with straw bales, slash, vegetation, and/or rock riprap. Liu Farm will check and maintain erosion control/drainage structures and keep culverts clear of debris. Remove excess soil and other debris and place used material in safe and dry environment. All necessary control structures should be in place and functioning, and all areas of exposed soil because of grading should be stabilized as soon as possible after grading is complete and before any precipitation event that could cause erosion and/or deliver storm water runoff to a water body. Riparian zones will be avoided, and vegetation will be maintained to protect water courses from growing operations.

9.11 CONSTRUCTION STORM WATER MANAGEMENT PLAN

Liu Farm does not anticipate any new construction at the cultivation site or on property other than the construction and use of prefabricated storage facilities; fencing the and installation of water tanks. However, Liu Farm will implement a Low Impact Development (LID) strategy when possible.

Liu Farm will implement construction (BMPs)by scheduling construction activities during dry weather and keep grading operations to a minimum during the rainy season.

Protect and establish vegetation to prevent dislodging and transporting of soil. Train and educate construction crews and personnel to better understand the effects of storm water pollution from construction projects and learn ways to prevent or minimize pollution on the job.

Stabilize construction entrances and exits to prevent tracking onto roadways. Protect exposed slopes from erosion through preventative measures such as covering the slopes to avoid contact with storm water by hydroseeding, applying mulch and/or using plastic sheeting. Use brooms and shovels whenever possible to maintain a clean site instead of a hose.

Establish a vehicle storage, maintenance and refueling area to minimize the spread of oil, gas and engine fluids. The use of oil pans under stationary vehicles will take place. Liu Farm will protect drainage inlets from receiving polluted storm water using filters such as fabrics, gravel bags or straw wattles, and so doing check on a regular basis the weather forecast and be prepared for rain by having necessary materials onsite before the rainy season.

9.12 PARAMETERS AND METHODS OF MONITORING

Liu Farm will report annually to either the Central Valley Regional Water Quality Control Board or the California State Water Resources Control Board as required, and reporting forms will be made available to the Lake County Community Development Department (CDD).

Storm water Management plan and notes will be kept on areas needing improvement. Any failing elements within the system that could result in the illicit discharge of storm water will be addressed immediately. Ongoing storm water reporting logs will be made available to the County and/or other regulatory agencies.

9.13 REVIEW

Liu Farm will review the Storm Water Management Plan on an annual basis, in conjunction with the review of the Water Uses Management Plan.

Section 10 Waste Management

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California. Accordingly, Liu Farms will implement the following Waste Management Plan.

10.1 PURPOSE

The Waste Management Plan (WMP) provides guidelines to minimize the generation of waste and for the proper disposal of waste produced during the cultivation and processing of cannabis at Liu Farm. The primary objective is to prevent the release of hazardous waste into the environment, minimize the generation of cannabis vegetative waste and dispose of cannabis vegetative waste properly, and manage growing medium and dispose of growing medium properly.

Liu Farm's WMP includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported to Lake County and the proper local agencies.

10.2 SOLID WASTE

OVERVIEW

Liu Farm's Solid Waste Management Plan (SWMP) is implemented from seed to storage to sale. In each stage of the business cycle Liu Farm will carefully consider the lifecycle and environmental impact of all materials brought on property and used in cultivation and packaging. Reusable, compostable or recycled materials are preferred and Liu Farm will seek to continuously improve efficiencies and reduce volume each year in business.

SCOPE

The Liu Farm Solid Waste Management Plan focuses on the following: The reduction of solid waste in accordance with the County of Lake and the State of California's conservational goals, in particular bearing in mind the demand that has been placed on the County's local landfill due to the event of recent catastrophic wild fires and residential and commercial structure losses.

The operations of a sustainable solid waste management system to ensure the protection of the environment, streams, riverbeds, wetlands and all habitats surrounding the cultivation premises. Mitigating the amount of solid waste diverted to a landfill. Properly monitoring, evaluating of effectiveness of the plan, and reporting of data to Lake County and the appropriate local agencies

All employees are required to follow the procedures outlined in this plan.

SOURCES OF SOLID WASTE

We have identified the following items as sources of potential solid waste generated at our facility:

WASTE TYPE	ANNUAL ESTIMATE	PEAK - DAILY ESTIMATE
Paper	183 LBS	1/2 LBS
Glass	183 LBS	1/2 LBS
Metal	40 LBS	0.11 LBS
Electronics	37 LBS	0.10 LBS
Plastic	365 LBS	1 LBS
Organics	0 LBS	0 LBS
Inerts	183 LBS	0.5 LBS
Household hazardous waste	73 LBS	0.20 LBS
Special waste	37 LBS	0.10 LBS
Mixed residue	NONE	NONE

SOLID WASTE REDUCTION PLAN

Liu Farm intends to decrease waste by 25% over the first three years of operations and will continue to make efforts to reduce waste a priority. Total volumes are recorded and logged each month as benchmarks for next year's goals.

SOLID WASTE REDUCTION PLAN (BMPs)

Liu Farm will: Achieve annual rate of waste diversion with a target goal of 90%. Assign and train staff on waste reduction and discuss waste and recycling strategies once per quarter and at the beginning of each phase of the cultivation process with subcontractors and vendors with the goal of reducing solid waste generation. Designate multiple spaces on the property to collect recyclable materials and sort materials into biodegradable, recyclable and non-recyclable receptacles Reuse and recycle materials to divert waste from landfill; and promote conscientious purchasing with the following:

- Consider lifespan of the purchase, utilize warranties and servicing options
- Consider purchases with replaceable parts so they are easy to repair

- Look for products that can easily be reused or recycled or are made from recycled materials
- Check that the products do not contains toxic materials
- Consider products with minimal packaging

Liu Farm will purchase farm inputs and materials in bulk using reusable totes and containers and looks for companies that use reusable, compostable; or recyclable packaging while working with logistics vendors to maximize transportation and logistics efficiencies.

Work with packaging vendors who share our waste reduction goals and offer recyclable materials; Design packaging with eco-friendly, reusable and/or recyclable materials; and budget financial resources to waste reduction.

Evaluate waste reduction programs with professionals, annually, and modify as needed to achieve our goal. Manage, track and analyze information for actionable insights and cost savings.

SOLID WASTE COLLECTION

Liu Farm will maintain separate trash enclosures and storage areas for organics, recyclable waste and non-recyclable waste in compliance with Lake County Ordinances. All compostable waste will be composted on site. All non-compostable solid waste will be hauled to a solid waste facility, obtaining record from solid waste facility showing the acceptance of all solid waste, address of facility, the date, the volume or weight.

For onsite collection of waste, Liu Farm will place portable waste bins designated for green waste, recyclables and non-recyclables in the most convenient and highly trafficked areas for easy disposal. At the end of each day, all solid waste will be brought to the respective solid waste collection area and stored in a secured bin to prevent wildlife from entering.

Two to four times per month, designated employees will gather all non-compostable solid waste and haul to the Clearlake Landfill and Quakenbush Facilities in Clearlake, CA., using a company truck. Recycling waste will be placed into reusable bins for transport. Non-recyclable waste will be placed in bags. All solid waste will be secured under tarps in transit.

MONITORING AND DOCUMENTING THE GENERATION AND REDUCTION OF SOLID WASTE

Liu Farm will track and calculate, in tons, total waste leaving the property and waste diversion rate monthly. Meili Liu, Director of Cultivation is responsible for recording total weight of recyclable and non-recyclable solid waste removed from the property and records are be kept for inspection and review in a locked office.

We will benchmark annual ratio of retail-ready flower products to solid waste generated.

DATA REPORTING

Liu Farm will share all data pertaining to the cost of implementation, success/failure rates of the solid waste plan and any effort taken to mitigate the generation of solid waste to Lake County on a quarterly basis or as requested.

REVIEW

Meili Liu, Director of Cultivation, will review all procedures in the Solid Waste Management Plan once a year and will take action to ensure full compliance with local, state and federal regulations that pertain to solid waste management.

10.3 HAZARDOUS WASTE MANAGEMENT PLAN

OVERVIEW

Liu Farm's Hazardous Waste Management Plan (HWMP) is designed to identify and evaluate hazards associate with cannabis cultivation at Liu Farm. This includes analysis of cultivation, processing, storing and packaging as well as all other activities associated with the production of cannabis on site. The goal of the plan is to determine whether there are existing hazards which require preventative control. Hazards include biological, chemical or physical.

Liu Farm does not intend to use or produce any hazardous waste on site.

SCOPE

The Liu Farm Hazardous Waste Management Plan focuses on the following: The identification of any and all hazards associated with cannabis cultivation, processing and packaging on site. The management, storage and recordkeeping of hazardous materials. Proper clean up and disposal and emergency spill response procedures.

All employees are required to follow the procedures outlined in this plan. Any deviations from this plan must be immediately brought to the attention of Meili Liu, Director of Cultivation at Liu Farm.

HAZARD ANALYSIS

The analysis includes the following: Biological hazards, including microbiological hazards; chemical hazards, including radiological hazards, pesticide(s) contamination, solvent or other residue, natural toxins, decomposition, unapproved additives, or food allergens. Physical hazards, such as stone, glass, metal fragments, hair or insects.

In the case the preventative controls are recommended, Liu Farm will implement those measures before each season.

IDENTIFICATION OF POTENTIAL HAZARDS

Biological Hazards:

Cultivation activities may require the use biologically active fertilizers. Application of these products will follow all rules for safe pesticide and fertilizer storage and application. All Liu Farm employees will be trained in the safe handling of potential biological hazards.

Chemical Hazards:

While Liu Farm utilizes organic farming, and prioritizes the use of non-hazardous products and materials, there may be a potential for chemical hazards with the use of cleaning products, fuels, and various construction materials. Should Liu Farm employees use these products, all will be trained in safe handling and application procedures. All potentially hazardous materials will be stored in a manner to minimize the risk of spillage and contamination, in a secure and clearly marked area.

Physical Hazards:

An analysis of the cultivation site produced no evidence of physical hazards. To limit potential future risk, the site will be kept free of rubbish and debris, and employees will wear appropriate protective clothing while working on site.

Evaluation:

The most effective strategy to reduce the potential for illness and injury from hazardous wastes is to reduce their use and presence onsite. In the case that hazardous material is stored and used, the following best management practices are followed to reduce risk:

All hazardous materials will be clearly labeled as hazardous and stored in a manner which reduces the risk of spillage and contamination. All employees will be trained in the safe handling and storage protocols for hazardous materials.

All employees will be briefed on the emergency response plan for possible spillage of, or exposure, to hazardous waste, and the location of emergency contacts and response procedures. All hazardous waste will be disposed of properly.

In regard to the end product and the cannabis consumer, we will evaluate the following:

- The sanitation conditions of the processing site;
- The operation's transportation and transfer practices;
- Processing procedures;
- Packaging and labelling activities;
- The storage of packaging and/or the finished cannabis;
- Any other relevant factors product

Liu Farm intends to only produce pure cannabis flower products for the medical and adult use (commercial) consumer market. No additional ingredients or additives will be used in the processing or packaging process. Licensed distribution companies involved in the transport of Liu Farm products will be assessed for the safe and sanitary conditions of their company vehicles used for transport. Products, at the time of transfer and transport will be placed in compliant packaging, and completely sealed from the outside environment in airtight containers.

Liu Farm's storage, processing, and packing facility will follow the guidelines set for the in the USDA's Sanitation Performance Standards Compliance Guide, in order to ensure the highest standards for employee and consumer safety.

MANAGEMENT OF HAZARDOUS WASTE

Currently there are no RCRA or Non-RCRA hazardous waste located on the premises. Clear plastic totes will be used for the storage of potentially hazardous waste and clearly labeled to display the volume and type of material stored. Containers will be stored in a locked storage area and will only be accessible to authorized staff.

The type of material, date, and time will be entered into a hazardous waste manifest located within the secure storage area and will be stored for five years. When returning material into storage, the type of material, volume used, name of employee, date and time will be entered into the manifest. Storage areas containing hazardous waste will be inspected weekly by Liu Farm staff to ensure accurate record keeping and safe storage conditions.

EMERGECY PROTOCOL – FOR SPILL OR CLEAN UP

In the case of a spill, the employee shall:

Perform an initial risk assessment from a safe distance, first considering the type of material spilled, volume of spill, potential for fire or airborne vapor; and then immediately make contact with Meili Liu and give an initial risk assessment. In the risk of fire, call 911 or the Lower Lake Fire Department, and locate the nearest posted fire extinguisher. If no immediate fire risk is present, employee shall change into appropriate safety gear/equipment and clean up spill immediately. After spill has been cleaned, place material in a secure storage bin to be taken to a

hazardous waste recovery facility along with all clothing worn during clean up. If an immediate risk is perceived, all staff will evacuate the premises, contact the appropriate response authorities, and log as the nature of the spill for reporting to emergency response authorities.

EMPLOYEE TRAINING

All Liu Farm staff will be responsible for the safe handling, storage, and disposal of hazardous materials. An introductory training on company procedures will be conducted before any employees can begin working. Training will include:

- Procedures for the safe disposal of hazardous materials. Storage locations containing hazardous materials and the labeling system for materials.
- How to appropriately log and track the movement and use of hazardous materials onsite; and required safety gear and appropriate clothing to wear while handling hazardous materials;
- Use of hazard grade Personal Protection Equipment according to the specific requirements of the hazardous material including: rubber gloves, rubber boots, glasses or eye protectant, ear protectant, apron or skin protector, air filter face mask, chemical spill UL grade filter, proper wash and storage are of PPE materials;
- Chemical bins and storage will be separate from all other material and handled accordingly;
- Emergency spill response procedure, the location of emergency response contact information, locations first aid stations and the location of fire extinguishers on the premises

RECORD KEEPING AND STORAGE

Liu Farm does not intend to utilize or generate hazardous waste as part of the cannabis cultivation program. However, data will be logged into the hazardous waste manifest located in storage where hazardous materials are stored, in the case of use or incidental generation.

The storage room shall be maintained with the materials safety data sheets (MSDS) appropriate to the contents of the room. All employees shall be trained for competency on how to read and understand these documents:

- Name of chemical;
- Manufacturer's information;
- Hazardous ingredients/identity information;
- Physical/chemical characteristics;
- Fire and explosion hazard data;
- Reactivity data;

- Health hazard data;
- Precautions for safe handling and use
- Control measures: Duplicate copies of the MSDS shall be maintained in a separate location on-site, along with records of the locations of volatile or restricted substances.

10.4 CANNABIS VEGETATIVE MATERIAL WASTE MANAGEMENT PLAN OVERVIEW

Liu Farm's Cannabis Vegetative Material Waste Management Plan (CVMWMP) provides compliant guidelines for on-site composting and removal of all cannabis waste, organics and green waste.

Liu Farm's CVMWMP includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported to Lake County and the proper local and/or state agencies.

SCOPE

The Liu Farm Cannabis Vegetative Material Waste Management Plan focuses on the following:

The recording and benchmarking of the amount of cannabis vegetative waste generated on site on an annual basis. The reduction of cannabis vegetative waste generation; and the processing, storage and disposal of cannabis vegetative waste

All employees are required to follow the procedures outlined in this plan.

ESTIMATES FOR CANNABIS VEGETATIVE WASTE

We estimate that the seven A-Type 3 licenses cannabis crops could produce 1,900 lbs of cannabis vegetative waste which will consist of stems, branches, trunks, roots and other organic materials from the plant rendered useless in the harvesting process. Cannabis vegetative waste will be disposed of using an onsite composter.

CANNABIS VEGETATIVE WASTE REDUCTION PLAN

Liu Farm's reduction plan hinges on healthy plants and the composting of all clean unusable cannabis vegetative waste on site.

PROCESSING, STORAGE AND DISPOSAL (BMPs)

Liu Farms shall recycle all vegetative wastes and store the waste properly in the designated storage waste shed. The stored waste will be disposed of properly by a professional disposal company at the owner Meili Liu's discretion. All green waste is held in designated holding area for 72-hour period with affixed batch information and weight

before beginning the composting process to render unusable, cannabis vegetative waste will be shredded and made unrecognizable and added to a ground mixture of at least 50% non-cannabis material, tracking each batch from disposal to compost through track and trace once the system is live at the State level.

Green waste that is unable to be composted for any reason will disposed of in a secure receptacle and brought to a solid waste facility, obtaining record from solid waste facility showing the acceptance of the green waste material, address of facility, the date, the volume or weight of cannabis accepted.

Detailed records of cannabis vegetative waste will be logged and benchmarked for the Clearlake Landfill and/or Quakenbush Facilities.

STORAGE

The facility will feature a secure cannabis waste area for cannabis plants that have been marked for disposal. At the close of each day, cannabis plant waste from the property will be removed and placed in the secured cannabis waste area and held for a minimum of 72 hours. The secure waste area will remain locked and only authorized personnel will have access. At the end of each week, all cannabis products that have been marked for disposal shall be rendered unusable by grinding and incorporating them with other ground organic materials (e.g., food, coffee grounds, shredded paper), yielding a mixture that is at minimum 51 percent non-cannabis waste by volume. The mixture will then be transferred to the composting site. Once a month, on a regular basis, the compost will be turned to encourage proper rates of decomposition.

MONITORING AND DOCUMENTING

Liu Farm is committed to monitoring and documenting the amount of cannabis vegetative waste that is generated by the facility on a monthly basis. These processes will include:

Weighing and logging the total amount of organics and cannabis waste generated. Weighing and documenting the total amount of retail-ready cannabis flower products against cannabis vegetative waste generated.

DATA REPORTING

Liu Farm will share with the County of Lake, Department of Public Services on a quarterly basis or as requested, all data pertaining to the cost of implementation and success/failure rates of the reduction plan, and any effort taken to mitigate the generation of organic waste.

COMPLIANCE

Liu Farm's Cannabis Vegetative Material Waste Management Plan has been developed in compliance with the appropriate local, county and state laws that pertain to the composting and recycling of organic and green waste produced by our cultivation process, including:

Cannabis, Non DAA qualified, AB 2490; State Reduction Goals, AB 341 (organics out of landfills goal); State Reduction Goals, California 70-percent reduction plan; Cannabis Cultivation Policy, California State Water Resources Board; California Code of Regulations, Title 3 Food and Agriculture, Division 8 Medical Cannabis Cultivation, Section 8108 Cannabis Waste Management.

REVIEW

Director of cultivation, Meili Liu, will review all procedures in the Cannabis Vegetative Waste Management Plan once a year and will take action to ensure full compliance with local, state and federal regulations that pertain to the usage of organic soils, mediums, amendments, and inputs.

All employees are required to follow the procedures outlined in this plan. Any deviations from this plan must be immediately brought to the attention of Meili Liu, Director of Cultivation of Liu Farm.

10.5 ESTIMATED MEDIUM USAGE

Projected 2025 Growing Medium: 5 Yards Projected 2026 Growing Medium: 5 Yards Projected 2027 Growing Medium: 5 Yards.

Type of Growing Medium: Compost-based organic potting soil. Our soils are mixed with compost at a 2:1 ratio respectively and mixed into the natural beds. We prefer to grow in planters as it reduces waste and the need to replenish soils annually. This technique drastically reduces our growing medium waste. Unless the soil is compromised, the soil will never be removed from the property or disposed of.

WASTE REDUCTION (BMPs)

The following are best management practices used to reduce growing medium waste and disposal:

Plant cover crop to boost soil fertility and protect from storm events Implement Integrated Pest Management practices to avoid the need for pest control, contamination and new grow medium No agrochemicals, Genetic Modified Organisms (GMO), or synthetic additives will be used during the cultivation of cannabis.

CULTIVATION (BMPs)

Liu Farm only uses organic potting soil with coco fiber and mycorrhizae to combat pests and grow healthy plants.

The Soil Composition:

8 large bags of a high-quality organic potting soil with coco fiber and mycorrhizae
25 to 50 lbs of organic worm castings
5 lbs steamed bone meal
5 lbs Bloom bat guano
5 lbs blood meal
3 lbs rock phosphate
¾ cup Epson salts
½ cup sweet lime (dolomite)
½ cup azomite (trace elements)
2 tbsp powdered humic acid

PESTS (BMPs)

We also reduce growing medium waste through pest control, applying an integrated ecosystem-based strategy that focuses on long-term prevention of pests through a combination of techniques such including:

Biological control habitat manipulation modification of cultural practice uses of resistant varieties.

MONITORING PERFORMANCE OF GMP AND WASTE GENERATION

In monitoring Growing Medium waste, Liu Farm will measure waste in tons. As referenced above, we reuse and recycle all growing medium that is brought onto our site. The only time we remove growing medium is if the soils are compromised. We will measure growing medium waste in tons when deposited at the Clearlake Landfill or Quakenbush facilities.

SOIL REMOVAL GUIDELINES

In the case that soil is compromised and needs to be removed from the property, the following guidelines are followed:

Excavated soil will be loaded directly onto trucks for off-hauling to the appropriate waste disposal facility. After the soil is loaded into the transport truck, the soil will be covered with secured tarps according to all applicable CA. Department of Transportation regulations to prevent soil from spilling during transport to the disposal facility.

If excavated impacted soil is stockpiled on-site prior to off-hauling, it will be placed on a paved surface and covered with plastic tarp and held down by weights. Stockpiled soil, if any, will be covered with plastic sheeting, or other similar material, at the end of each workday. A stockpile that is not being actively worked on for more than 60 minutes will be covered with plastic sheeting to prevent dust from leaving the site.

REPORTING TO LAKE COUNTY

All testing result will be recorded in logs managed by our Director of Cultivation, Meili Liu. Data collected during the cultivation of cannabis will be shared and reported to County of Lake, and the following agencies upon request:

The CA. Department of Food and Agriculture; and the Department of Health.

REVIEW

Director of Cultivation, Meili Liu, will review all procedures in the Growing Medium Management Plan once a year and will take action to ensure full compliance with local, state and federal regulations that pertain to the usage of organic soils, mediums, amendments, and inputs.

Section 11 Water Resources

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California. Upon receiving this permit, Liu Farm will implement the following Water Resources Management Plan.

11.1 PURPOSE

Liu Farm's Water Resources Management Plan (WRMP) has been designed to minimize adverse impacts on surface and groundwater resources and to ensure that on site water resources and management is in full compliance with applicable local, county and state regulations.

The WRMP, in conjunction with the Water Use Plan, identifies best management practices and evaluates these strategies to reduce water demand, increase water supply, reduce potential sediment delivery to waterways, improve water quality, and enhance environmental and resource stewardship.

Liu Farm's Water Resources Management Plan includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported to County of Lake and the proper local agencies.

11.2 SCOPE

The Liu Farm's WRMP focuses on:

- Identifying property water resources and provide description of watershed on lot of record;
- Best management practices to limit adverse impacts to water resources;
- Monitoring and reporting methodology of water resources;

All employees are required to follow the procedures outlined in this plan. Any deviations from this plan must be immediately brought to the attention of Meili Liu, Director of Cultivation.

11.3 OVERVIEW

Liu Farm is proposing to use one wells for cultivation. The primary well was completed April 23rd, 1922. The well will supply all the water for cultivation and purchasing water trucks will be used as backup or in any unforeseen emergency.

The main water source will be a groundwater well located on the subject parcel at 38.8680984393, -122.561131828. This well has an estimated yield of 75 GPM. The water will be pumped and stored in water tanks located near the cultivation site. From the well, water is delivered approximately 650 feet to a water tank collection system. Water is then pumped from the water tanks to the cultivation areas. When all proposed tanks are full a mechanical float switch shuts off the system.

Water is delivered to irrigation system via a jet pump pressure tank system. Liu Farms shall use a drip irrigation system to water plants. Our projected monthly water usage is 167,000 gallons – 250,000 for cultivation. In addition to cultivation we shall use 100 gallons of water for livestock located on the parcel.

The well is sealed to the outside environment and is contained within a well house annotated on the site exhibit shown in Appendix D.

11.4 WATERSHED DESCRIPTION

Liu Farm is located in the Lower Sacramento River Watershed. The parcel is approximately 158.22 acres of forested land dominated by ponderosa pine with California blue oak also prominent. Numerous additional tree species were observed sharing the canopy including Douglas-fir, knobcone pine, sugar pine, canyon live oak, interior live oak, and California bay.

11.5 WATER CONSERVATION (BMPS)

Liu Farm will draw our best management practices from Central Valley Regional Water Quality Control Board BMP for Cannabis Cultivation. All employees and managers will practice the following:

- Do not obstruct, alter, dam or divert all or a portion of a natural watercourse without notification and approval from CDFW under the Lake and Streambed Alteration Program;
- Regularly inspect the entire water delivery system for leaks and repair leaky faucets and connectors;
- Line water conveyance ditches/canals to reduce waste and the unreasonable use of water;
- Use rainwater catchment systems to collect and store storm water during the rainy season in tanks, bladders, or engineered ponds to reduce the need for water diversions and/or pumping of groundwater during low flow periods (late summer to fall);
- Install float valves on all water storage systems to keep them from overflowing onto the ground;
- Hand water or use drip/trickle Irrigation systems, and limit watering;
- Use mulch to conserve soil moisture in cultivated areas, pots and bins;
- Water pump intakes should be screened to prevent the entrainment of threatened or endangered aquatic species - consult Fish and Game Code sections 6020-6028;
- Base layout and site development on a qualified expert's recommendations with respect to any listed species protected under California or federal law - avoid any action that constitutes a "taking" under the Federal Endangered Species Act or California Endangered Species Act, unless accompanied by an Incidental Take Statement or Incidental Take Permit issued by the appropriate agency.

11.6 EROSION, SEDIMENT, ROADS, AND STORMWATER (BMPS)

We draw our best management practices for erosion, sediment, roads and storm water from Central Valley Regional

Water Quality Control Board BMP for Cannabis Cultivation. All employees and managers will practice the following:

- A licensed timber operator (LTO) must be utilized if any commercial tree species are to be removed from the site;
- Grow site development and road construction will be conducted in a manner that minimizes grading and soil disturbance;
- Avoid cultivating on steep slopes (greater than 30% grade) and disturbing any areas with landslides, gullies, and slips;
- Avoid construction and soil disturbance in the winter and/or during periods of wet weather;
- Seed, mulch, and/or rock areas that have been disturbed by grading, excavation, and/or road construction activities;
- Erosion control mats/blankets and wattles should be used to protect disturbed areas on steep slopes. Native grass seed will be applied to disturbed areas before installation of mats/blankets and wattles. Wattles will be installed on contour to prevent concentrating runoff and mats/blankets will be installed per manufacturer's guidelines if necessary;
- Storm water drainage structures will not discharge onto unstable slopes, earthen fills, or directly to a watercourse. Drainage structures will discharge onto stable areas with straw bales, slash, vegetation, and/or rock riprap;
- All drainage and storm water infiltrations features will be assessed for their ability to withstand a 2-year storm event;
- Regularly check and maintain erosion control/drainage structures and keep culverts clear of debris;
- Haul away excess soil and other debris and locate any stockpiled materials in areas where they can be protected from erosion and will not discharge to a watercourse or lake;
- Compact and contour stored soil/spoils to mimic natural slope contours and drainage patterns to reduce the potential for fill saturation and failure, or erosion;
- Rip compacted soils prior to placing stored soil/spoils to prevent the potential for ponding which could lead to stored soil/spoil site failure and subsequent sedimentation;
- All necessary drainage/erosion control structures will be in place and functioning, and all areas of exposed soil as a result of grading will be stabilized as soon as possible after grading is complete and before any precipitation event that could cause erosion and/or deliver storm water runoff to a water body;
- Riparian zones will be avoided and vegetation should be maintained to protect watercourses from growing operations;
- Do not service, fuel, or store equipment within 100 feet of surface water bodies;

- Store petroleum products in a covered building with secondary containment at least 200 feet away from surface water bodies;
- New roads will be planned and designed to stay as far away from watercourses as possible and to minimize the number of watercourse crossings;
- Decommission or relocate existing roads away from riparian zones whenever possible;
- Blade existing roads in dry weather, but while moisture is still present in soil to minimize dust and maximize compaction to prevent fine sediments from discharging from the road surface;
- Do not side cast bladed material to areas where it can enter a water body directly or be delivered to a water body during a storm event;
- Out-slope roads wherever possible to prevent the concentration of storm water flow within an inboard/inside ditch, to promote even drainage of the road surface, and to minimize disruption of the natural sheet flow pattern off a hill slope to a stream;
- If unable to eliminate inboard/inside ditches, line them with geotextile fabric and/or rock and ensure adequate ditch relief culverts to prevent down-cutting of the ditch and to reduce water runoff concentration and velocity;
- Neither in-sloped nor out-sloped roads will be allowed to develop or show evidence of surface rutting or gullying. Use water bars and rolling dips to break- up slope length, diverting water to well-vegetated or armored areas. The distance between water bars and/or rolling dips should not exceed 150 feet, and that distance should be shortened for roads with steep grades (greater than 15%) or with an easily erodible surface;
- Use gravel to “weatherproof” roads used during the winter or wet weather periods;
- All road watercourse crossing structures will allow for the unrestricted passage of water and should be designed to accommodate the 100-year flood flow - consult CAL FIRE 100-year Watercourse Crossings document for examples and calculations (minimum of 18” diameter for all culverts);
- Road watercourse crossing structures on watercourses that support fish will be constructed for the unrestricted passage of fish at all life stages, and require permitting from CDFW;
- Culverts used at watercourse crossings will be of sufficient length to extend beyond fill/sidecast material, and will be installed at the same level and gradient of the stream bed in which they are being placed;
- Culverts used at watercourse crossings will be designed to direct flow and debris toward the inlet using wing-walls, beveling of the pipe, rock armoring, etc.;
- Low-water or ford style watercourse crossings will be armored along the bed and banks with clean durable rock of a sufficient size as not to move downstream during high flow periods, yet without creating a damming effect on the flow - rock will be placed on either side to the break in slope to prevent water from diverting around the material;

- Stream crossing structures should be designed, constructed, and maintained to prevent stream diversion in the event that the crossing becomes plugged.

11.7 WETLAND/RIPARIAN PROTECTION AND MANAGEMENT

- Liu Farm shall not disturb aquatic or riparian habitat, such as vernal pools, spawning sites, large wood, or shading vegetation unless authorized under a CWA section 404 permit, CWA section 401 certification, Regional Water Board WDRs (when applicable), or a CDFW LSA Agreement.

- Liu Farm will maintain existing, naturally occurring, riparian vegetative cover (e.g., trees, shrubs, and grasses) in aquatic habitat areas to the maximum extent possible to maintain riparian areas for stream bank stabilization, erosion control, stream shading and temperature control, sediment and chemical filtration, aquatic life support, wildlife support, and to minimize waste discharge.

11.8 WASTEWATER AND SEWAGE MANAGEMENT

The subject property will utilize an existing conventional septic system that has been approved by Lake County Environmental Health and meets current state standards. Liu Farm ensures:

- All human or animal waste is disposed of properly
- Onsite wastewater treatment systems (e.g., septic system) are permitted by the local agency;
- We will not use a cesspool for domestic or industrial wastewater disposal;
- We will not install or continue use of an outhouse, pit-privy, pit-toilet, or similar device without approval from the County of Lake;
- Liu Farm will not dispose of domestic wastewater unless it meets applicable local agency requirements.

11.9 MONITORING PERFORMANCE AND MANAGEMENT

Liu Farm will conduct biannual monitoring inspections of the cultivation site, all associated facilities, all roadways associated with cannabis cultivation, and any water bodies potentially impacted by cultivation related activities. The first monitoring will occur annually by November 1st of each calendar, and will ensure the following criteria are met:

- All stockpiles, soil amendments, pesticides, and fertilizers have been properly stored and/or protected;
- Erosion and sediment controls have been properly installed and are functioning, and all areas of exposed soil have been stabilized in preparation for the winter wet weather period;
- Drainage structures (water bars/rolling dips) have been installed and are functioning on all access roads, and all access roads intended for use during the winter wet weather period have been weatherproofed;
- All trash/refuse has been cleaned up where it cannot pass into or be transported into any water body and empty/used containers have been properly disposed of per manufacturer's instructions;
- All water containment/storage ponds/dams have been inspected and appear to be in good, and stable

condition;

The second monitoring inspection will occur annually after April 1st and before June 15th of each calendar year, and will ensure the following criteria are met:

- All stockpiles, soil amendments, pesticides, and fertilizers have remained properly stored and/or contained;
- Erosion/sediment controls implemented on bare soils have remained effective in preventing discharge of earthen materials and sediments off site;
- All access roads appear in good condition and erosion/sediment control has been effective in preventing discharge of earthen materials and sediment off- site;
- All permitted water containment structure/ponds/dams have remained effective and in good condition;

11.10 WRMP EVALUATION AND PERFORMANCE REPORTS

Based on the findings of the biannual monitoring inspections, Liu Farm will assess the efficacy of the WRMP. If monitoring shows that measures implemented have proven effective, we will report the findings continue to inspect the site biannually. If the measures implemented on site have proven ineffective, we will submit a remediation plan to the CVRWQCB as well as a timeline for work to be accomplished. The remediation plan will include proof that any permits required to complete the intended work will be obtained in a timely fashion to the appropriate regulatory agency. All data collected by site inspection will be shared with all concerned Lake County agencies.

11.11 REVIEW

Liu Farm will review the Water Resources Management Plan on an annual basis, in conjunction with the review of the Water Uses Management Plan.

11.12 COMPLIANCE

Liu Farm applied to the Regional State Water Board in 2018. Liu Farm was granted a notice of applicability on June 4th, 2018. The WDID number is 5S17CC402153.

A copy of the Central Valley Regional Water Quality Control Board BMP for Cannabis Cultivation will be kept on site at all times.

As of the date of this application, we hold the following permits:

- No permits at this time.

Section 12 Water Use

Liu Farm is applying for one Commercial Cannabis Cultivation Major Use Permit for seven A-Type 3 licenses in Lake County, California. Accordingly, Liu Farm proposes to implement the following Water Use Management Plan.

12.1 PURPOSE

The Water Use Management Plan (WUMP) has been designed to conserve the County's water resources and establish best management practices to ensure the plan is followed at all times, as well as is in full compliance with applicable local, county; and state regulations.

Liu Farm's Water Use Management Plan includes measures to monitor and evaluate the performance of the plan, as well as ensure that all data and information is reported to the County of Lake and appropriate local agencies.

12.2 SCOPE

The Liu Farm Water Use Management Plan focuses on the following:

- Developing and maintaining a safe, clean, and reliable water supply;
- Meeting all legal requirements for the use of water resource located on the property and providing documentation of legal compliance;
- Monitoring the quantity of water used for the cultivation of cannabis;
- Designing a water efficient delivery system and irrigation system for cannabis cultivation. All employees are required to follow the procedures outlined in this plan;

12.3 OVERVIEW

Liu Farm's well permit application number is WE-5326. Historically, this area has yielded between 20 to 100 GPM. The well yield is 75 GPM.

The well is sealed to the outside environment. Liu Farm's well is located towards the southwesterly corner of the parcel east of a natural spring. The storage tanks are located adjacent to each cultivation site.

From the well, water will be pumped to 12 separate tanks, stored directly adjacent to each cultivation. When all 12 tanks are full, a mechanical float switch shuts off system.

Water is delivered to an irrigation system via a jet pump pressure tank system. Liu Farms shall use a drip irrigation system to water plants. The projected monthly water usage is 167,000-250,000 gallons for cultivation.

Applicant will not engage in any unlawful drawing of surface water. Applicant will not use water provided by a public water supply, unlawful water diversions, bottled water, a water vending machine or a retail water facility. The

subject property is outside any County Water District "Exclusion Areas." The project will use water transportation trucks if needed or in an extreme emergency.

12.4 WATER STORAGE (BMPS)

Liu Farm will install vertical storage tanks according to manufacturer's specifications and place the tanks on properly compacted soil that is free of rocks and sharp objects and capable of bearing the weight of the tank and its maximum contents with minimal settlement. Water will be stored polyethylene water tanks with a total of 30,000 gallons of water stored close to the cultivation site.

New storage tanks will be located in areas with great slope stability and at the cultivation site. To prevent rupture or overflow and runoff, Liu Farm will only use water storage tanks and bladders equipped with a float valve, or equivalent device, to shut off diversion when storage systems are full. All vents and other openings on water storage tanks will be designed to prevent the entry and/or entrapment of wildlife. We will also monitor the meter on a regular basis to ensure excess water is not being used.

12.5 IRRIGATION SYSTEM

Daily watering of cannabis will be achieved via a drip irrigation system gravity feed from a water storage tank. The watering will be administered by a timed irrigation controller, set to irrigate during the nighttime when the evaporation rates will be the lowest. Drip lines will be sized to irrigate large areas slowly, to maximize absorption, and will be placed under a layer of straw mulch. Hose bibs will be stationed throughout the cultivation area for spot watering.

IRRIGATION & SPRINKLERS (BMPs)

The following are irrigation best management practices implemented by Liu Farm:

- The site will utilize a drip irrigation system with a schedule that requires use of as little water as possible;
- Regularly inspect our entire water delivery system for leaks and immediately repair any leaky faucets, pipes, connectors, or other leaks;
- Replace worn, outdated, or inefficient irrigation system components and equipment to ensure a properly functioning, leak-free irrigation system at all times;
- Install according to the irrigation design specifications, locally applied codes and standards, and manufacturers' product requirements;
- Actively manage the system and adherence to all applicable watering limitations;
- Ensure sprinkler heads and nozzles will apply water uniformly to the target area;
- Match the precipitation/application rate of the sprinklers for each zone (+/– 5 percent);

- Designed to reduce overspray of impervious surfaces or adjacent planting areas, and prevent runoff of water
- Avoid low head drainage;
- Drip irrigation will be utilized instead of spray sprinklers in narrow or complex shaped areas;

12.6 MONITORING PERFORMANCE OF WATER

Liu Farm will maintain records of diversion with separate records that document the amount of water used for cannabis cultivation separated out from the amount of water used for other irrigation purposes and other beneficial uses of water (e.g., domestic, fire protection, etc.). These records will be available upon request from the Water Boards or any other authorized representatives of the state.

Liu Farm will share data relating to the cost of implementing the water management plan with the County as requested.

12.7 EVALUATING PERFORMANCE OF THE WATER USE MANAGEMENT PLAN

Annually, Liu Farm will review the Water Use Management Plan and recorded logs in conjunction with the reviews of all management plans. Upon review, Liu Farm will address any outstanding issues immediately. Additionally, a professional evaluation of the water plan will occur annually with the goal of improving water management practices.

12.8 CALIFORNIA DROUGHT DECLARATIONS

Liu Farm recognizes that on occasion, the Governor of California and the Lake County Board of Supervisors has and likely will continue to periodically issue a proclamation of a local or state emergency based on drought conditions on any given year. In the event of such a Declaration, Liu Farm will abide by all emergency regulations adopted in response to drought conditions.

12.9 EMERGENCY USE PLAN

In the case of an emergency that a retail water is needed, Liu Farm will work with a licensed retail water supplier as defined by Section 13575 of the Water Code and provide the following information to the Department in 7 days:

- A description of the emergency;
- Identification of the retail water supplier including license number;
- Volume of water supplied;
- Actions taken to prevent the emergency in the future

12.10 WATER AVAILABILITY ANALYSIS

The Water Use Plan has been developed in compliance with the appropriate local, county, and state laws that pertain to the Water Use. These include:

- Cannabis Cultivation Policy & California State Water Resources Board;
- California Code of Regulations, Title 3 Food and Agriculture, Division 8 Medical Cannabis Cultivation, Section 8107;
- County of Lake Ordinance 3703;
- Division of Water Rights, Principles and Guidelines for Cannabis Cultivation.

Water Usage Calculation

Description	Use	Amount of water needed
Well Production	Proposed	
Existing Usage (Agriculture / Live stock)	Vacant	
Proposed Usage (Cannabis Cultivation)	7 acres of outdoor	15.94 GPM

12.11 REVIEW

Director of Cultivation, Meili Liu will review the Water Use Plan on an annual basis and will share data relating to the cost of implementing this plan with the County as requested. The well will be monitored during recharge or storage tanks and Lui Farm will meter and measure the amount of water pumped over cultivation season.

Appendix A: Fertilizer Information

AMERICAN SOIL & STONE

Soil Blends

The Soil Composition:

8 large bags of a high-quality organic potting soil with coco fiber and mycorrhizae

25 to 50 lbs of organic worm castings (2% Nitrogen, 0% Phosphorus, 0% Potassium)

5 lbs steamed bone meal (3% Nitrogen, 15% Phosphorus, 0% Potassium)

5 lbs Bloom bat guano (10% Nitrogen, 3% Phosphorus, 1% Potassium)

5 lbs blood meal (12% Nitrogen, 0% Phosphorus, 0% Potassium)

3 lbs rock phosphate (0% Nitrogen, 30% Phosphorus, 0% Potassium)

¾ cup Epsom salts (0% Nitrogen, 0% Phosphorus, 0% Potassium)

½ cup sweet lime (dolomite) (0% Nitrogen, 0% Phosphorus, 0% Potassium)

½ cup azomite (trace elements) (0% Nitrogen, 0% Phosphorus, 0% Potassium)

2 tbsp powdered humic acid (0% Nitrogen, 0% Phosphorus, 0% Potassium)

Appendix B: Security Camera Information

Click to Zoom





Lorex 16CH 4K DVR 4TB 10 UHD 4K Bullet Camera Security System

4.0 (54)

Item 1220974 | Model LHV516410B

Your Price $1,299.99

Shipping & Handling Included*

Features:

- 10 UHD 4K Bullet Cameras with Color Night Vision™
- 16-channel 4K DVR
- RG-59 Cabling
- Remote Viewing Available Via Free App

Qty 1 Add to Cart

Arrives approximately 3 - 5 business days from time of order.

Compare Product

Share

Add to Registry

Add to List





Product Details

Product details have been supplied by the Manufacturer, and are hosted by a third party.

System Overview

Introducing the evolution of High Definition analog security with the advanced Lorex Ultra HD 4K (8MP) solution. Experience professional grade quality, outstanding video and reliable recording. This expandable 16 channel 4K (8MP) Ultra HD DVR comes with 10 weatherproof 4K (8MP) Ultra HD bullet security cameras featuring 4× the detail of 1080p. See more with Color Night Vision™ for low light conditions and up to 135ft (41m) with long-range IR night vision so important events are captured in exceptionally high definition day or night.

View live in clear high definition and watch recorded video later with the pre-installed 4TB security-grade 100% duty cycle hard drive, allowing you to digitally zoom in on fine details. Secure more video data with up to 30 days of continuous recording, and up to 2 months of motion recording. Connecting to your system with your smartphone or tablet has never been easier than with the Lorex Cloud app – connect in 3 simple steps so you never miss a moment from anywhere life takes you.

For more information, call Lorex toll-free at 1-888-425-6739 (Pre-Sales & Sales Support from 8:30am - 7:00pm EST Monday - Friday, and Customer Service from 9:00am - 5:00pm EST. Support available in English & Spanish)

System Specifications

- **Channels**: 16
- **Included Cameras:** 10× 4K (8MP) Ultra HD Security Cameras
- **Hard Drive:** 4TB security-grade 100% duty cycle hard drive
- **Resolution:** 4K (8MP - 3840×2160) Ultra High Definition (HD)

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Appendix C: Additional Documents

2 March 2020

WDID: 5S17CC423622

DISCHARGER
Meili Liu
Intangible Paradise
8531 High Valley Road
Clearlake Oaks, CA 95423

LANDOWNER
Meili Liu
2014 Central Avenue
Alameda, CA 94501

NOTICE OF APPLICABILITY, WATER QUALITY ORDER WQ-2019-0001-DWQ, MEILI LIU, APN 006-003-340-000, 006-005-200-000, 006-032-370-000, 006-033-040-000, LAKE COUNTY

Meili Liu for Intangible Paradise (hereafter "Discharger and Landowner") submitted information through the State Water Resources Control Board's (State Water Board's) online portal on 25 January 2020, for discharges of waste associated with cannabis cultivation related activities. Based on the information provided, the Discharger self-certifies the cannabis cultivation activities are consistent with the requirements of the State Water Board *Cannabis Cultivation Policy- Principles and Guidelines for Cannabis Cultivation* (Policy), and the *General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities*, Order No. WQ-2019-0001-DWQ (General Order). This letter provides notice that the Policy and General Order are applicable to the site as described below. You are hereby assigned waste discharge identification (WDID) number **5S17CC423622**.

The Discharger is responsible for all applicable requirements in the Policy, General Order, and this Notice of Applicability (NOA), including submittal of all required reports. The Discharger is the sole person with legal authority to, among other things, change information submitted to obtain regulatory coverage under the General Order; request changes to enrollment status, including risk designation; and terminate regulatory coverage. The Central Valley Regional Water Quality Control Board (Central Valley Water Board) will hold the Discharger liable for any noncompliance with the Policy, General Order, and this NOA, including non-payment of annual fees.

Pursuant to the General Order and Policy, Meili Lu (hereafter "Landowner") is ultimately responsible for any water quality degradation that occurs on or emanates from the property and for unauthorized water diversions. Accordingly, the Landowner, in addition to the Discharger, may be held responsible for correcting non-compliance.

1. FACILITY AND DISCHARGE DESCRIPTION

The information submitted by the Discharger states the disturbed area is equal to or greater than 1 acre (43,560 square feet), no portion of the disturbed area is within the setback requirements, no portion of the disturbed area is located on a slope greater than 30 percent, and the cannabis cultivation area is greater than 1 acre.

Based on the information submitted by the Discharger, the cannabis cultivation activities are classified as Tier 2, low risk.

2. SITE-SPECIFIC REQUIREMENTS

The Policy and General Order are available on the Internet at http://www.waterboards.ca.gov/cannabis. The Discharger shall ensure that all site operating personnel know, understand, and comply with the requirements contained in the Policy, General Order, this NOA, and the Monitoring and Reporting Program (MRP, Attachment B of the General Order). Note that the General Order contains standard provisions, general requirements, and prohibitions that apply to all cannabis cultivation activities.

The application requires the Discharger to self-certify that all applicable Best Practicable Treatment or Control (BPTC) measures are being implemented, or will be implemented by the onset of the winter period (November 15 - April 1), following the enrollment date.

3. TECHNICAL REPORT REQUIREMENTS

The following technical report(s) shall be submitted by the Discharger as described below:

1. A *Site Management Plan* must be submitted by **24 April 2020.** For more information on the requirements to submit a *Site Management Plan*, see General Order Provision C.1.a, and Attachment A, Section 5. Attachment D of the General Order provides guidance on the contents of a *Site Management Plan*. Dischargers that cannot implement all applicable BPTC measures by the onset of the winter period, following their enrollment date, shall submit to the appropriate Central Valley Water Board a *Site Management Plan* that includes a time schedule and scope of work for use by the Central Valley Water Board in developing a compliance schedule as described in Attachment A of the General Order. You are not required to use a Qualified Professional for developing the Site Management Plan. However, you are required to submit the Site Management Plan to Central Valley Water Board staff for approval prior to any site development.
2. A *Nitrogen Management Plan* must be submitted by **24 April 2020,** consistent with the requirements of General Order Provision C.1.d., and Attachment A, Section 5. Attachment D of the General Order provides guidance on the contents of the *Nitrogen Management Plan.*
3. *A Site Closure Report* must be submitted 90 days prior to permanently ending

cannabis cultivation activities and seeking to rescind coverage under the Conditional Waiver. The *Site Closure Report* must be consistent with the requirements of General Order Provision C.1.e., and Attachment A, Section 5. Attachment D of the General Order provides guidance on the contents of the *Site Closure Report.*

4. MONITORING AND REPORTING PROGRAM

The Discharger shall comply with the Monitoring and Reporting Program (MRP). Attachment B of the General Order provides guidance on the contents for the annual reporting requirement. Annual reports shall be submitted to the Central Valley Water Board by March 1 following the year being monitored. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Central Valley Water Board's Executive Officer or the State Water Board's Chief Deputy Director, or Deputy Director.

5. ANNUAL FEE

According to the information submitted, the discharge is classified as Tier 2, low risk with the current annual fee assessed at $1,000. The fee is due and payable on an annual basis until coverage under this General Order is formally rescinded. To rescind coverage, the Discharger must submit a Notice of Termination, including a *Site Closure Report* at least 90 days prior to termination of activities and include a final MRP report.

6. TERMINATION OF COVERAGE UNDER THE GENERAL ORDER & REGIONAL WATER BOARD CONTACT INFORMATION

Cannabis cultivators that propose to terminate coverage under the Conditional Waiver or General Order must submit a Notice of Termination (NOT). The NOT must include a *Site Closure Report* (see Technical Report Requirements above), and Dischargers enrolled under the General Order must also submit a final monitoring report. The Central Valley Water Board reserves the right to inspect the site before approving a NOT. Attachment C includes the NOT form and Attachment D of the General Order provides guidance on the contents of the *Site Closure Report.*

If the Discharger cannot comply with the General Order, or will be unable to implement an applicable BPTC measure contained in Attachment A by the onset of the winter period each year, the Discharger shall notify Central Valley Water Board staff by telephone at 530-224-4845 so that a site-specific compliance schedule can be developed.

All monitoring reports, submittals, discharge notifications, and questions regarding compliance and enforcement should be directed to centralvalleyredding@waterboards.ca.gov or 530-224-4845.

(for) Patrick Pulupa
Executive Officer

JF: ch

cc via email: Kevin Porzio, State Water Resources Control Board, Sacramento
Mark Roberts, Lake County Planning Department, Lakeport

LAKE COUNTY HEALTH SERVICES DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
922 BEVINS COURT, LAKEPORT, CA 95453
PHONE: (707) 263-1164 FAX: (707) 263-1681

WELL PERMIT APPLICATION

SEE LAKE COUNTY ORDINANCE NO. 1823 FOR WELL CONSTRUCTION, DESTRUCTION & REPAIR REQUIREMENTS

JOB LOCATION ADDRESS: 8531 High Valley Rd. Clearlake Oaks, CA
Assessor's Parcel Number: 006-003-34 Phone: (510) 468-7657
Property Owner: Meili Liu City: Alameda
Mailing Address: 2014 Central Ave. State/Zip: CA 94501

WELL DRILLER: Will Peterson Well Drilling
Mailing Address: P.O. Box 695 City/State/Zip: Kelseyville CA 95451
CA C-57 License Number: 1009053 Phone: (707) 277-0103
Well Driller Print Name: Will Peterson I HEREBY AFFIRM UNDER PENALTY OF PERJURY that I am licensed under the provisions of Chapter 9 of Division 3 of the Business and Professions Code, and my license is in full force and effect.
WELL DRILLER'S SIGNATURE: Will Pet Date: 3-10-20

TYPE OF WORK: ☒ New Well ☐ Reconstruction ☐ Destruction ☐ Test Well ☐ Soil Boring/Hydropunch ☐ Other:

PROPOSED USE: ☒ Domestic ☐ Public ☐ Monitoring ☐ Agriculture ☐ Test Well ☐ Other:

CONSTRUCTION: ☐ Cable Tool ☐ Mud Rotary ☒ Air Rotary ☐ Other:
Casing Type & Standard: F480 PVC Wall Thickness: 1/4" Diameter: 4 1/2"
Proposed Depth of Seal: 20' Bore Hole Diameter: 9" Variance:

SEAL MATERIAL: ☒ Concrete ☒ Bentonite Clay ☐ Sand-Cement Grout ☐ Neat Cement ☐ Other:

PLEASE COMPLETE ALL ATTACHMENTS
THIS PERMIT IS VALID FOR ONE YEAR FROM DATE OF ISSUANCE
Drillers please provide a minimum of 12-hour notice prior to sealing the annular space.

FOR OFFICE USE ONLY

Date Received: 3-11-2020 Fee Paid: 305.00 Receipt Number: RP0012162
☑ Well Driller License # Verified By: CSLB
100 Year Flood Plain? ☑ No ☐ Yes Zone: D/X Elevation:
Water Resources: Flood r Database Minimum Casing Height: ≥ One foot above the elevation of the 100-year flood plain elevation or above any known condition of flooding by drainage or runoff from the surrounding land.
Issued By: Rhealdey Preciado Date: 03/16/2020

Site #1 Seal Depth: ____ -- ____ Feet Total Feet Below Ground Surface: ____ ☐ Well ☐ Boring
Site #2 Seal Depth: ____ -- ____ Feet Total Feet Below Ground Surface: ____ ☐ Destruct ☐ Boring
Site #3 Seal Depth: ____ -- ____ Feet Total Feet Below Ground Surface: ____ ☐ Destruct ☐ Boring
Annular Seal Verified By: ____ Date: ____
Destruction Verified By: ____ Date: ____
Well Completion Report (Well Log) Date Received: ____ Initials: ____

WELL PERMIT NUMBER: WE-5326
WP0003460

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

Page 1 of 1

Owner's Well Number 1

Date Work Began 4-22-20 Date Work Ended 4-29-20

Local Permit Agency LAKE County Environmental Health

Permit Number WE-5326 Permit Date 3-16-20

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. xxxxxxx

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ● Vertical ○ Horizontal ○ Angle Specify

Drilling Method Air / Mud Rotary Drilling Fluid Bentonite

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	20	Brown clay
20	80	Brown clay w/ gravels
80	120	Black shale and sandstone
120	200	Brown shale sandstone black shale
200	270	Brown shale black shale + sandstone
270	305	sandstone and calcite

Total Depth of Boring 310 Feet

Total Depth of Completed Well 305 Feet

Well Owner

Name Meili Liu

Mailing Address 2014 Central Ave

City Alameda State CA Zip 94501

Well Location

Address 8531 High Valley Rd.

City Clearlake Oaks County LAKE

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

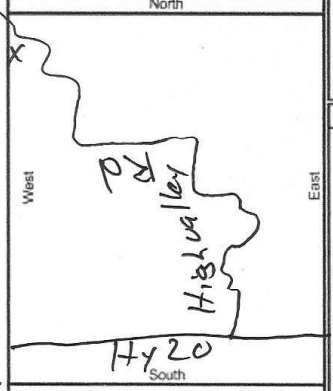
Datum Dec. Lat. Dec. Long.

APN Book 006 Page 003 Parcel 34

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

● New Well

○ Modification/Repair
- ○ Deepen
- ○ Other

○ Destroy

Describe procedures and materials under "DESTRUCTION"

Planned Uses

● Water Supply
- ■ Domestic ☐ Public
- ■ Irrigation ☐ Industrial

○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 90' (Feet below surface)

Depth to Static Water Level 90' (Feet) Date Measured 4-29-20

Estimated Yield * 80 (GPM) Test Type Air lift

Test Length 1 HR (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	180	9"	F480	PVC	1/4"	4 1/2	Blank	—
180	305	9"	F480	PVC	1/4"	4 1/2	Perf	.032

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	1	Concrete	SEAL
1	22	Bentonite	
22	305	#3 Pea	Gravel Pack

Attachments

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

Attach additional information, if it exists.

Certification Statement

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

Name Will Peterson Well Drilling

Person, Firm or Corporation

P.O. Box 6934 Kelseyville CA 95451

Address City State Zip

Signed [signature] 4-30-20 1009053

C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Pro Series DEEP

HEAD
GPM
COST

Online Reviews: ★★★★★

Pump Dims: Model Dependent		
Diameter:	3.9" OD	
Outlet Size:	1.25" FNPT	
Solar Panels		
Small	40x20x1.18"	15 lbs
Large	66x40x1.4"	40 lbs

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100% WATER ASSURANCE GUARANTEE*

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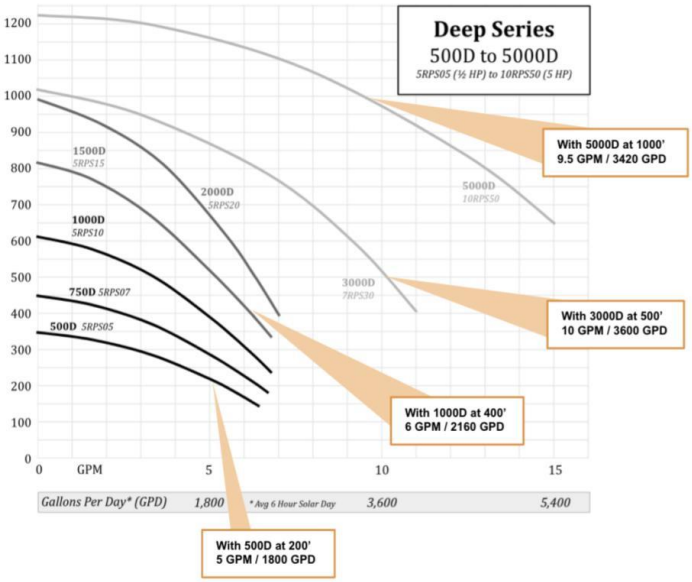
Our Pro Series D (ProD) pumps are designed for **high head, lower volume applications** of extremely deep wells. Systems use hearty 3-Phase Motors and 3.9" Multistage Centrifugal Pump Ends. Our controllers are the best in the world and allow customization and optimization based on sun and season, sensor input, 220v backup and more. The pump curves outlined here are our most popular sizes- 1/2HP (500D) to 5HP (5000D). Installing well pumps over 400 feet gets more challenging, so we generally recommend finding an experienced helper or a local installer who has the equipment to lower the pump/cable/pipe safely.

Systems Include:

- Solar Array of Monocrystalline Aluminum-framed Panels (number of panels varies with model)
- 2.2 kW Rated Solar Controller (takes DC Voltage from Solar Panel array +Auto-Switch to run with 220v Grid or Generator when not enough solar)
- Brushless Submersible Motor (3 Phase 220v, 3.9" Diameter)
- Stainless Steel High Head Centrifugal Pump End
- Large Float Switch for use as high water tank sensor
- All connector cables from solar panels to controller
- DC cut-off disconnect switch rated for your array, plug and play with MC4s
- Phone & Email support before and during installation

Call 888-637-4493 for help with sizing



Roll over image to zoom in

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Solar Security Camera Outdoor $39.99	WiFi Camera w/ 64GB SD Card $55.99	WiFi Solar Camera (2 Pack) $89.99

Recommended Uses For Product	Outdoor Security
Brand	HOSAFE.COM
Connectivity Technology	Wireless
Special Feature	Portable, Night Vision, Motion Sensor
Indoor/Outdoor Usage	Outdoor

About this item

- UNTETHERED MOBILE SECURITY CAMERA: Ideal for country houses, construction sites, farms, wild security/monitor, etc. With wire-free feature, this 4G Cellular security camera is portable and you can easily install it anywhere without WiFi coverage. Connect to the Solar Panel, it will get nonstop power supply and free you from charging the battery.
- 1080P COLOR NIGHT VISION & PTZ: Being able to pan 355°, tilt 90°, and 4x digital zoom, increase the flexibility of the LTE solar camera to get the perfect view. 6pcs 6500K spotlights provide high-quality color images in 2K HD at night, while the distance of its infrared night vision can be up to 100ft, see everything in vivid detail and get more clarity than ever before.
- SMART MOTION DETECTION & INSTANT ALERTS: The PIR sensor and advanced person shapes analysis technology offer accurate detection to the cellular security camera, thus greatly reducing the false alarms on trivial objects' movements. The active defense program offers instant alerts which will push notifications to your phone in time, which allows you to check the live picture, and talk with the visitor.
- 24X7 RECORDING AVAILABLE: As a security camera outdoor wireless solar battery powered, it does not only record motion events, but also supports a micro SD card (up to 128GB, not included) for 24x7 loop recording. Its super-capacity battery and big solar panel offer enough nonstop power supply, that you will not miss any picture if the motion sensor is not triggered. (All PIR sensor can only be triggered in 15~25ft)
- IP66 WATERPROOF & SECURE CLOUD STORAGE: Just insert a 4G LTE SIM card and an SD card into the solar powered camera and easily set it up, then you can put it outside anywhere you want. Optional cloud storage service can upload all events to the encryption cloud server, you can always playback the cloud recordings from the phone app easily even if the camera is damaged or stolen.

Norwesco Water Tank 2500 gal

3/5 1 reviews | **Product Code:** RMS-R01973357

Brand: Norwesco
Product Code: RMS-R01973357
Availability: In Stock

$817.00

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3/5 1 reviews

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Your Name

Your Review

Write Review

Description Reviews Custom

Store water in this Water Only Tank.

- 2500-gallon above-ground water only tank
- Black
- 95 in. dia. x 91 in. H polyethylene water only tank
- 2 in. bulkhead fitting
- 3 year limited warranty

SpecificationDescriptionMaterial:PolyethyleneProduct Type:Water Storage TanksFill Opening Diameter:16 in.Length:91 in.Tank Capacity:2,500 gal.Warranty:3 YearsBrand:Norwesco

50Hz 60Hz

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Output Range : (Single Phase) 5.5 - 8.0 kVA

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Lake County, California

March 27, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

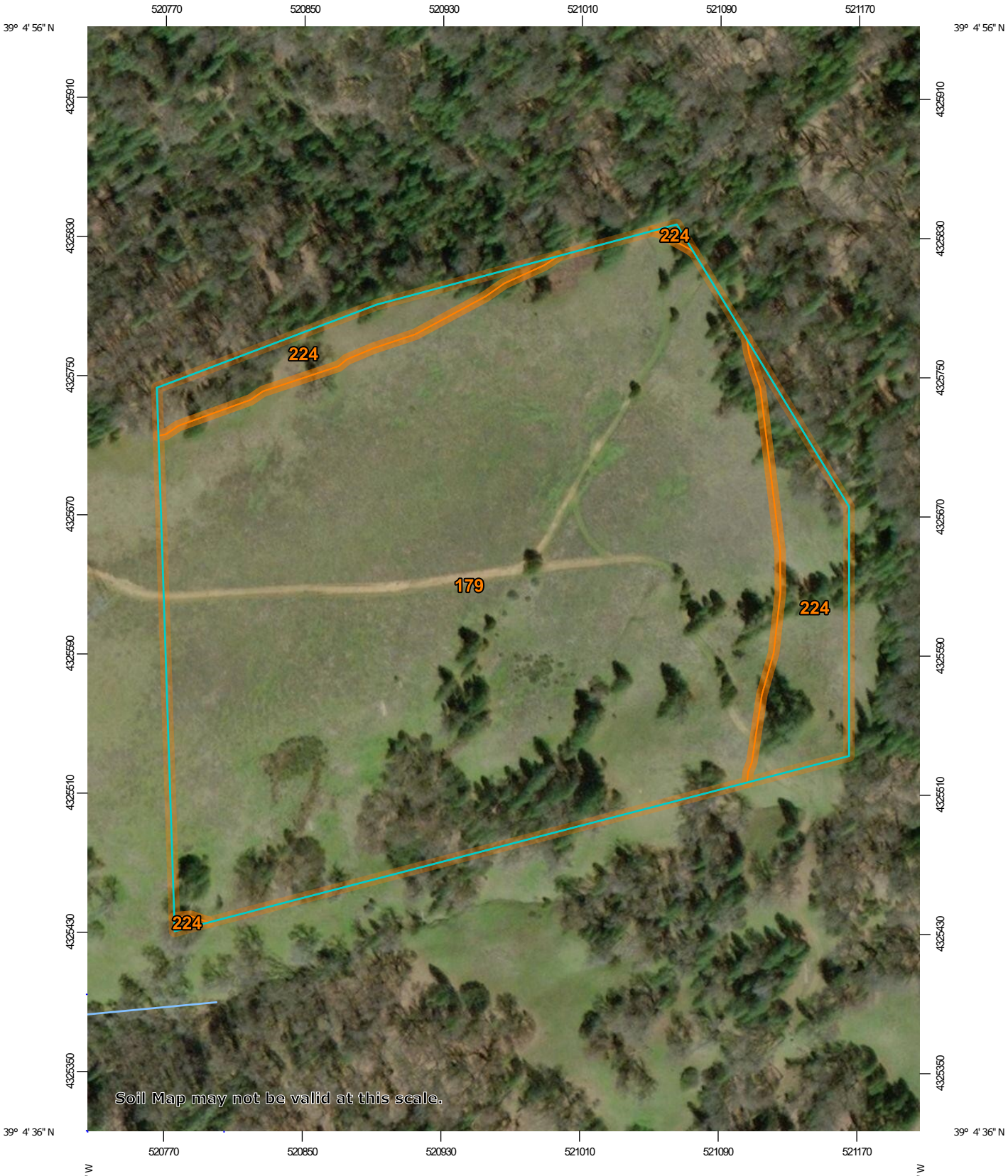
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,100 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County, California
Survey Area Data: Version 16, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 18, 2016—Nov 4, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
179	Millsholm-Squawrock-Pomo complex, 30 to 50 percent slopes	26.4	88.5%
224	Speaker-Marpa-Sanhedrin gravelly loams, 30 to 50 percent slopes	3.4	11.5%
Totals for Area of Interest		**29.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lake County, California

179—Millsholm-Squawrock-Pomo complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: hf77
Elevation: 300 to 4,000 feet
Mean annual precipitation: 12 to 60 inches
Mean annual air temperature: 54 to 63 degrees F
Frost-free period: 130 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Millsholm and similar soils: 30 percent
Squawrock and similar soils: 30 percent
Pomo and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Millsholm

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 3 inches: loam
H2 - 3 to 11 inches: clay loam
H3 - 11 to 21 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 11 to 15 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Squawrock

Setting

Landform: Hills, mountains

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: gravelly loam
H2 - 8 to 37 inches: very gravelly sandy clay loam
H3 - 37 to 47 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 37 to 41 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Pomo

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 11 inches: loam
H2 - 11 to 40 inches: gravelly clay loam
H3 - 40 to 58 inches: gravelly clay
H4 - 58 to 68 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 58 to 62 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Bressa

Percent of map unit: 3 percent
Hydric soil rating: No

Hopland

Percent of map unit: 3 percent
Hydric soil rating: No

Mayacama

Percent of map unit: 3 percent
Hydric soil rating: No

Maymen

Percent of map unit: 3 percent
Hydric soil rating: No

Skyhigh

Percent of map unit: 3 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 3 percent
Hydric soil rating: No

Yorkville

Percent of map unit: 2 percent
Hydric soil rating: No

224—Speaker-Marpa-Sanhedrin gravelly loams, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: hf8p
Elevation: 400 to 5,000 feet
Mean annual precipitation: 20 to 65 inches
Mean annual air temperature: 45 to 59 degrees F
Frost-free period: 100 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Speaker and similar soils: 30 percent
Marpa and similar soils: 25 percent

Sanhedrin and similar soils: 15 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Speaker

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 8 inches: gravelly loam
H2 - 8 to 27 inches: gravelly clay loam
H3 - 27 to 60 inches: weathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 27 to 31 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Marpa

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 15 inches: gravelly loam
H2 - 15 to 25 inches: very gravelly clay loam
H3 - 25 to 35 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 25 to 29 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Sanhedrin

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: gravelly loam
H2 - 8 to 57 inches: gravelly clay loam
H3 - 57 to 67 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 57 to 61 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Etsel

Percent of map unit: 5 percent
Hydric soil rating: No

Maymen

Percent of map unit: 5 percent
Hydric soil rating: No

Neuns

Percent of map unit: 5 percent

Hydric soil rating: No

Marpa

Percent of map unit: 5 percent
Hydric soil rating: No

Sanhedrin

Percent of map unit: 5 percent
Hydric soil rating: No

Speaker

Percent of map unit: 5 percent
Hydric soil rating: No

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