

Cultivation and Operations Plan

1 DESCRIPTION OF CULTIVATION

The site is adjacent to State Highway 299 and the Berry Summit Vista Point. Old Highway 299, the original historic highway route runs through the parcel. I am requesting a project merger, consolidating the cultivation areas of three adjacent parcels based on environmental justifications. The proposed project would relocate the cultivation area of Humboldt County CCMLUO 1.0 application 12290 (APN 316-086-011) and Humboldt County CCMLUO 1.0 application 11217 (316-086-023) to Humboldt County CCMLUO 1.0 12269 (316-086-017). With the cultivation consolidated onto APN 316-086-017. Once the cultivation areas of APN 316-086-011 and APN 316-086-023 have been relocated to APN 316-086-017, I would like to include APN 316-086-011 and APN 316-086-023 in a 541 acre Natural Conservation Area with adjacent parcels. The goal of this Natural Conservation Easement is to do environmental restoration, and soil regeneration through highly rotational grazing. This Conservation Easement would also preserve the natural view shed of the Berry Summit Vista Point for generations to come.

2 TOTAL CULTIVATION

The project merger would consolidate the square footage to already existing cultivation sites, planting in the ground to dramatically reduce water needs. Gardens will utilize natural farming and permaculture methods, and companion planting for beneficial insects.

Permit Number	Outdoor Square Footage	Mixed Light Square Footage
12269	22,766	1,450
12290	14,493	2,870
11217	5,040	2,052
TOTAL Proposed Square Footage to APN 316-086-017	42,299	6,372

I would like to request transitioning 1,251 square footage of Mixed Light into full sun outdoor. This would make the totals for the project merger consolidated cultivation areas 43,550 square feet of full sun outdoor, and 5,121 square feet of mixed light cultivation.

3 LOCATION AND CAPACITY OF WATER STORAGE FACILITIES

Projected Water Use: Proposed water usage is 480,000 gallons, but this will decrease significantly after the installation in ground planting. Exact amounts vary year to year depending on the weather and the health and genetics of the plants. Water usage will be recorded monthly and reported annually to the Water Board pursuant to NCRWCQB Order No. R-12015-0023 and as part of SWRCB

reporting program. All records will be kept on-site and will be made available for inspectors to view if requested.

Table 1: Projected Water Use by month

Projected Water Use in gallons of Existing and Proposed Cultivation												
J	F	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	D	Total
0	0	500	6,200	9,000	60,000	95,000	145,000	120,000	36,000	8,300	0	480,000

Water Source:

Irrigation water is currently procured from four sources, 2 points-of-diversion, a groundwater well, and a rainwater catchment pond. I will be eliminating 4 points-of-diversions on the 2 parcels I will be retiring, and am requesting 1 new point of diversion, further upstream from my current POD #1. This will allow me to use gravity to fill many of my water tanks, minimizing the use of gas powered water pumps. This new requested point of diversion is currently on my adjacent property, 316-086-025. I will be requesting a lot line adjustment to include this new point of diversion on my homestead property, 316-086-017.

One existing point of diversion is a horizontal well in an unnamed spring, that was established in 1987 for residential and irrigation use. The other existing point of diversion is a stream diversion established in 1990 to supplement the rainwater catchment pond. A Small Irrigation Use Registration (H504169) was approved on 1/16/19 for these two diversions.

The well is a 200 feet deep permitted well which yields an estimated 5 gallons per minute. David Linberg, a geologic consultant, has inspected the well and has completing a geologic report which has been submitted.

The rainwater catchment pond holds approximately 500,000 gallons. The catchment surface area is approximately 5,491 sq ft, which can catch approximately 248,522 in average rainfall. I am proposing an expansion of the pond, to allow for more rainwater catchment, and in the case of need for fire suppression.

Water Storage: There is approximately 79,800 gallons of water storage in hard tanks, and approximately 500,000 gallons of water storage in the pond, for a total of 579,800 gallons of water storage. I would like to request a pond expansion to have an abundance of water storage in case of the need of fire suppression.

Irrigation Plan: I am currently growing mostly in raised beds, with some cloth pots. I water with drip irrigation to conserve water, and use mulch to preserve soil microbiology and limit evaporation. I manage irrigation rate with the aim of watering the plants about every 4 days. If my consolidation request is approved I would like to plant in the ground, which will require far less watering.

Water Management: Drip irrigation is distributed by gravity. Compost teas are applied with gravity and electric pumps.

4 SITE CHARACTERISTICS

The main access through the property is a paved section of decommissioned State Highway 299. There are four class III streams and one class II stream located on the property. There are six stream crossings and three ditch relief culverts on the property. The biggest culvert on the old State Highway has been replaced and upgraded. PG&E, who shares access through the property on the Old State Highway is working to replace the culvert for the 2nd largest crossing. I am working on securing funding to replace the remaining Old State Highway culverts.

As part of my dedication to being a good steward of my home, and doing my best to help with the environmental restoration of this land, I have been working for years with local forestry firm BBW to do Oakland restoration by thinning the encroaching firs on the property. As a part of this work both gravel driveways off the Old Highway have been upgraded and water bars maintained.

5 WATERSHED + HABITAT PROTECTION

All cultivation activities are outside of riparian buffers, and slope away from waterways preventing any runoff threatening water quality. I am implementing measures outlined in the LSAA for the protection of wildlife and habitat, which include but are not limited to, screening intakes on diversion structures, and observing forbearance periods for surface water diversions. I am enrolled with North Coast Regional Water Board's Cannabis Discharge Waiver Program to ensure riparian watershed and habitat protection.

6 SWRCB/RWQCB

I have maintained continuous enrollment in Regional and State Water Board Cannabis discharge programs since 2016. #100415 & H504169. My LSAA issued by CDFW is #1600-2019-0096-R1

7 STORMWATER MANAGEMENT PLAN

Drainage: The site has well-draining soils and natural vegetation is maintained around all cultivation areas.

Roads: The main road access is an old decommissioned section of Highway 299. I secured grant funding from CalFire to replace the culvert stream crossing #3 in 2017. PG&E is working on replacing the culvert on stream crossing #1 in 2024 (and the 2 biggest culverts on 316-086-011). I am working on securing funding to replace the remaining Old State Highway 299 culverts.

The two rocked roads coming off the highway are in good condition. They have been maintained through my work with BBW to thin the encroaching firs on the property for Oakland restoration and fuels reduction, because as a part of this work the rocked roads were upgraded to allow for logging trucks. The rocked roads are designed to shed surface water by outsloping the surface. There are also dips located at the base of inclines to shed water.

Runoff and Erosion Control Measures: Water is used appropriately always and is applied at no more than agronomic rates. Perimeters of cultivation areas are undisturbed and have well established, naturally occurring vegetative buffers.

Cleared/developed areas at the site were generally compacted and covered with established cover. In disturbed area without cover straw mulch will be applied for winterization.

8 INVASIVE SPECIES CONTROL PLAN

I will maintain a regular monitoring program for invasive species within the property particularly areas that have previously been disturbed. Any areas that have been disturbed will be monitored to ensure revegetation efforts are successful. Twice a year I survey the property for invasive species. If these plants are found on the property, they will be removed using hand tools. Areas that are showing signs of substantial root networks of invasive species shall be smothered with cardboard and mulch. The pond is drained at the end of every dry season to ensure no invasive species are established.

9 MATERIALS MANAGEMENT PLAN

I maintain two self-haul waste areas and three compost areas on site. Refuse and garbage is stored in a location and manner that prevents its discharge to receiving water and discourages wildlife from interacting with waste materials. Non-compostable solid waste and recyclables derived from the operations shall be placed in the self-haul waste area and periodically transported to a local transfer station. Solid waste may include, but is not limited to household trash, product packaging and containers, irrigation tubing, pots and similar containers used for propagation and cultivation, fencing. All waste plant material will be composted on site.

Storage Area: Trash and recycling is at the homestead and the other is at cultivation area #2. These areas are guarded by 4 dogs, and we have never had any issues.

Removal Frequency: Trash is removed from site once a month or more as needed. I usually go to the McKinleyville dump, but sometimes I take things to Eureka.

Waste Soil/ Growth Media: All soil is amended, composted and reused on-site.

Amendments and Nutrients: A covercrop is grown over winter to fix nitrogen and support the soil microbiology. At the beginning of the season the covercrop is chopped and dropped, and the soil is tested at to determine my amendment needs. I apply organic compost, worm castings, and bulk dry amendments.

I do a soil test at the beginning of the season, and order bulk amendments to be applied before planting according to my needs. The soil is tested again mid-season, and if needed another top dressing is applied. I do little else for fertilization, unless a problem arises. To feed the soil microbiology I brew compost tea and extracts. All supplies are stored in the existing Ag Exempt barn from 2002, and the insulated sealed storage container. I am proposing a new ag exempt building near cultivation area #2 for future storage.

Pesticides and Herbicides: Companion planting to attract and support predator insects are the primary tool for pest management. If issues arise I the natural organic products such as Chester Boones, Plant Therapy, and Dr Zymes. All products used on-site are consistent with product labelling and are placed, used, and stored in a shed where no products are released into surface or groundwaters.

Fuel: Two 500 gallon propane tanks are on-site. One is for residential propane, and one is for the backup propane generator for the solar system. Most power needs are supplied by the very large solar system with a lithium ion battery bank. Less than 25 gal of gasoline stored onsite in 5-gal jerry cans with secondary containment. Spill kits are kept onsite. All fuels stored onsite are in compliance Site Management Plan.

10 SCHEDULE OF ACTIVITIES

Month	Activities
January	Buck dried flower, process through trim machine and/or send to processing.
February	Start propagation from seed and/or acquire clones. Continue processing.
March	Start seeds and/or acquire clones. Maintain immature plants in nursery greenhouse. Continue processing.
April	Up pot and maintain immature plants in nursery greenhouse. Finish processing from previous year's harvest.
May	Chop and drop cover crop and amend soil. Maintain immature plants in nursery greenhouse.
June	Plant into full season outdoor location.
July	Vegging, pruning, and trellising plants. Farm operation and maintenance.
August	Vegging, pruning, and trellising plants. Farm operation and maintenance.
September	Vegging and flowering plants. Farm operation and maintenance.
October	Begin harvest and drying.
November	Finish harvest and drying. Begin bucking dried flower off the stem to deleaf in trim machine, and/or start sending bins to processing facilities. Plant winter cover crop. Begin winterization of property.
December	Finish winterization of property. Continue bucking dried flower to deleaf with machine and/or send bins to processing facilities.

11 PROCESSING PLAN

Processing Practices: The crop is harvested and then dried in cured in 2 existing barns. If my consolidation is approved I would like to request 2 new barns at the consolidated garden site to minimize travel to and from drying barns. When the harvest and drying is complete I spend the winter months bucking the dried flower off the stem and putting it through my Green Brother's trim machine. Whatever I can't process myself over winter I send to licensed trim facilities to support me in the trimming process. All work surfaces and equipment are maintained in a clean and sanitary condition. I follow protocols to prevent contamination with mold and mildew. There are flush toilets located within the residence.

Days and Hours of Operation

The facility is not open to the public and will not accept visitors without a specific business purpose. Commercial activities such as shipping and receiving will be limited to 8 AM to 5 PM as the hours of operation.

Employee Safety Practices:

My farm is family owned and operated. I do not currently have employees. If the market improves and I can afford help in the future I will follow County and State regulations and guidance. Employee safety practices will be in compliance with standards set forth by the County and State which may include the following and additional elements:

Increased Road Use:

Anticipated trips on and off site are one trip per day. No significant noise or traffic impacts are anticipated on access roads or impacts to neighboring properties as the site is owner-operated.

On-site Housing: The site is owner-operated and the family lives in the onsite residence.

12 PARKING PLAN & FIRE SAFE TURNAROUNDS

Fire safe turnarounds that comply with current State SRA Regulations are located in two places on the property. An 80 ft diameter fire safe turnaround is also located on site and complies with the current State Fire Safe Turnaround regulations.

13 ENERGY PLAN

The majority of the power for operations is supplied by a large off grid solar powered system. The very large solar array almost always keeps the lithium ion batteries full, but the system is supplemented with a back up propane generator that turns on automatically the the batteries drop too low. During the growing season a Honda 2,000 generator is sometimes used to pump water, and/or brew compost tea. During drying in the fall the solar array can power the dehumidifiers needed during the day, but each barn has a Honda 7,000 that is used to supplement power for the dehumidifiers at night. I am proposing an additional solar system at the proposed facilities at cultivation area 2, with the goal of transitioning to a 100% solar powered farm.

14 SECURITY PLAN

The security measures located on the premises will include the following:

- (1) Lighting- Motion sensor lighting is installed around the facilities such that the site can be monitored efficiently.
- (2) Alarm- There is an informal community watch in place in the neighborhood, and I have 4 trained guard dogs living on the property.
- (3) Access Control- Entrance to the site is restricted by a locked gate and located at the end of the road.

- (4) All cultivation related items and products will be stored in locked locations. Strict inventory control measures will be utilized.

15 LIGHTING POLLUTION CONTROL PLAN

Artificial light may be used in the nursery area and 5,121 sq feet of mixed light cultivation. Light will never be allowed to escape preventing light pollution and insuring International Dark Sky Standards will be met. Security lighting will be motion activated and comply with the International Dark-Sky Association standards and Fixture Seal of Approval Program. Facility and vicinities shall be self-inspected twice annually at nighttime during artificial light use period to assure the continued effectiveness of light containment measures.

16 NOISE SOURCE ASSESSMENTS AND MITIGATION PLAN

One Honda EU2000, and two Honda EU7000 generators shall be kept for use. The Honda EU2000 generator shall be used for occasionally moving water and/or brewing compost tea. The 2 Honda EU7000 generators will only be used in the evenings during harvest at the drying barns to power dehumidifiers. The noise produced by the generators is approximately 49 dBA at proximity and is much quieter 100 feet from it. Noise shall be attenuated as necessary to prevent harassment of wildlife. Combined decibel level for all noise sources at the property line shall be no more than 60 decibels. Noise shall be monitored monthly to assure that noise dampening measures remain effective. The Noise Monitoring Form is included in the Appendix. If the consolidation is approved, there may be future generator use for the proposed 5,121 sq feet of mixed light cultivation, until the new commercial building and solar system are installed.

Appendix

1 APPLICABLE CALCULATIONS & METHODOLOGY

NA

2 REDTAIL RANCH DARK SKY MONITORING FORM

Self-inspection to be conducted after dark, twice annually when supplemental artificial lighting is in use.

Name: _____

Date: _____

Time: _____

Walk perimeter of greenhouses.

Is light visible? No Yes

If yes describe:

Observe cultivation area from road.

Location of observation:

Observation approximate distance from cultivation areas:

Is light visible? No Yes

If yes describe:

Other Notes/Observations:

3 REDTAIL RANCH NOISE MONITORING FORM

Self-inspection to be conducted monthly.

Name: _____

Date: _____

Time: _____

Combined decibel level for all noise sources, including generators, at the property line shall be no more than 60 decibels.

Is decibel reading at 60 decibels or under at property lines? No Yes

If no, describe mitigation measures to ensure noise management at property line:

(Fill If Applicable)

Location of generator shed:

Decibel reading at generator shed:

Decibel reading at 100 feet away (in clear sight; no obstruction):

Is decibel reading 50 decibels or under? No Yes

If no, how far away until 50 decibels or under (in clear sight; no obstruction)?

(Fill If Applicable)

Location of second generator shed:

Decibel reading at generator shed:

Decibel reading at 100 feet away (in clear sight; no obstruction):

Is decibel reading 50 decibels or under? No Yes

If no, how far away until 50 decibels or under (in clear sight; no obstruction)?

Other Notes/Observations: