

BLACK BEAR FARMS, LLC
APN: 211-283-007
CULTIVATION AND OPERATIONS MANUAL
HUMBOLDT COUNTY, CA

COMMERCIAL CANNABIS
CULTIVATION FACILITIES

PREPARED FOR:



NOVEMBER 2019
Updated in January 2020

Commercial Cannabis Cultivation Facilities

APN: 211-283-007

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November 2019
Updated in January 2020
Updated in May 2020

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1. PROJECT SUMMARY

1.1. PROJECT OBJECTIVE

Black Bear Farms, LLC is proposing to permit commercial cannabis cultivation activities in accordance with the County of Humboldt's (County) *Commercial Cannabis Land Use Ordinance* (CCLUO), aka "Ordinance 2.0" on APN 211-283-007 in McCann, California. The property is proposing to receive eight (8) Retirement, Remediation, and Relocation (RRR) sites for a total of 183,560 square feet of outdoor commercial cannabis cultivation ("Proposed Project"). Of the 183,560 sq. ft., 163,560 sq. ft. is proposed to be cultivated using full-sun outdoor techniques and 20,000 sq. ft. is proposed to be cultivated using light deprivation techniques in temporary hoop houses. 10,000 sq. ft. of outdoor cultivation in temporary hoop houses currently exists onsite under Zoning Clearance Certificate Apps #10676, which was approved through the County's *Commercial Medical Marijuana Land Use Ordinance* (CMMLUO), Ordinance No. 2544, aka "Ordinance 1.0". See Table 1 for RRR application numbers, square footage, and cultivation techniques.

Table 1. Retirement, Remediation, and Relocation (RRR) Application Numbers, Square Footage, and Description			
<i>Description and Permit Type</i>	<i>Apps #</i>	<i>Square Feet</i>	<i>Cultivation Method (Proposed)</i>
Nearly approved RRR (ZCC)	12915	20,000	Outdoor (light-dep in temp greenhouses)
RRR (ZCC)	12719	20,000	Full-sun outdoor
RRR (ZCC)	12713	20,000	Full-sun outdoor
RRR (ZCC)	12418	20,000	Full-sun outdoor
RRR (ZCC)	12742	20,000	Full-sun outdoor
RRR (SP)	12083	43,560 (2.0)	Full-sun outdoor
RRR (ZCC)	12080	20,000	Full-sun outdoor
RRR (ZCC)	15294	20,000	Full-sun outdoor
Proposed Project Square Footage		183,560 sq. ft.	
Approved ZCC	10676	10,000	Outdoor (light-dep in temp greenhouses)
Already-Approved (Existing) Square Footage on Site		10,000 sq. ft.	
Total Square Footage on Site (Approved and Proposed)		193,560 sq. ft.	

The project includes the permitting of proposed and existing facilities appurtenant to the cultivation, including temporary hoop houses, onsite immature plant propagation, water storage, water diversion infrastructure, and a building for drying of commercial cannabis. The applicant aims to become fully compliant with state and local cultivation regulations.

1.2. SITE DESCRIPTION

The subject parcel (APN 211-283-007) is located in McCann, California in the Cameron Creek – Eel River watershed (HUC-12 #180101050502). The middle main stem of the Eel River runs northwesterly through the parcel, and several Class II and III drainages run southwesterly to drain into the Eel River. Most of the parcel is hilly and forested with redwood and Douglas' fir trees, with slopes ranging from upwards of 35% to 15%. Cultivation is proposed to be located on an approximately 5-acre agricultural grazing field (historically known as "Thompson Field") with slopes between 5 and 15% (where existing cultivation is

located). This agricultural flat is adjacent to the river in the southwest area of the property and has historically been home to decades of ranching, tilling, cattle grazing, and livestock operations. A wetland feature has been delineated in the southeast corner of this field; all cultivation-related activities will be set back at least 100 feet from this feature. Elevation on the parcel ranges from approximately 1,700 feet in the northeastern corner of the property to approximately 150 feet above sea level at the Eel River in the southwestern area of the property. The parcel contains approximately 37 acres of prime agricultural soils, of which the proposed projects are proposed to impact less than five acres (approximately 13.5%). Additionally, cultivation is proposed to be located out of the 100-year FEMA flood zone.

Existing onsite infrastructure includes a residence, 10,000 sq. ft. of existing cultivation in hoop houses, an 8' x 15' storage shed, a 36' x 20' drying facility/garage, two (2) 12' x 48' storage structures, a 60,000-gallon steel-bolted metal water storage tank, numerous smaller hard plastic storage tanks, and water diversion infrastructure. The property is powered by Pacific Gas & Electric (PG&E).

1.3. LAND USE

The property is zoned Agriculture Exclusive (AE), Timberland Production (TPZ), and Unclassified (U), and the property has land use designations of Timber (T) and Residential Agriculture (RA20-160). Land uses surrounding the parcel are comprised of agriculture, timber, and scattered rural residences.

1.4. STATE AND LOCAL COMPLIANCE

1.4.1. CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE – CALCANNABIS

Black Bear Farms, LLC has applied for a Small Mixed-Light Tier 1 Annual Cannabis Cultivation License through the California Department of Food and Agriculture (CDFA) CalCannabis Licensing Division. Prior to operating the proposed cultivation square footage, Black Bear Farms, LLC will obtain additional licenses through CDFA. Once annual or provisional licenses are approved, Black Bear Farms, LLC will enroll in and comply with California Cannabis Track and Trace (CCTT) METRC.

1.4.2. STATE WATER RESOURCES CONTROL BOARD – WATER RIGHTS

Water for the proposed project will be sourced primarily from rainwater catchment and supplemented by groundwater from an existing onsite well. Black Bear Farms, LLC has obtained a certified Small Irrigation Use Registration from the State Water Resources Control Board to irrigate the approved 10,000 sq. ft. (SIUR #H506556).

1.4.3. STATE WATER RESOURCES CONTROL BOARD AND NORTH COAST REGIONAL WATER QUALITY CONTROL BOARD – WATER QUALITY

Black Bear Farms, LLC applied for coverage as a Tier 1, Low Risk under the State Water Resources Control Board (SWRCB) General Order WQ 2017-0023-DWQ *General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Dischargers of Waste Associated with Cannabis Cultivation Activities* ("Order") on June 7, 2019 (Application Number 416207). A statewide WDID number has yet to be assigned. The purpose of the SWRCB Order is to implement the requirements for waste discharges associated with cannabis cultivation as described in SWRCB's *Cannabis Cultivation Policy – Principles and Guidelines for Cannabis Cultivation* ("Policy"). A Site Management Plan has been developed for the property to describe how the discharger is complying with the applicable Best Practicable Treatment or Control (BPTC) Measures listed in Attachment A of the Order/Policy.

The current Tier 1, Low Risk discharger status reflects current operations that disturb less than one acre. Once proposed cultivation has been built-out, Black Bear Farms, LLC will enroll as a Tier 2, Low Risk

discharger. The applicant intends to keep all cultivation activities out of riparian setbacks to maintain Low Risk status with SWRCB.

Historically, the property was enrolled with the North Coast Regional Water Quality Control Board (NCRWQCB) for coverage under Tier 2 of Order No. 2015-0023 *Waiver of Waste Discharge Requirements and General Water Quality Certification for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects in the North Coast Region* ("NCRWQCB Order") and was assigned WDID Number 1B16610CHUM.

1.4.4. HUMBOLDT COUNTY BUILDING DEPARTMENT

All necessary building permits will be obtained from the Humboldt County Building Department for all existing and proposed structures and supporting infrastructure upon approval of project. An existing permit for a 40' x 60' drying barn is on file with the Humboldt County Building Department (Apps #49390) and is proposed to be approved as part of this project.

1.4.5. CAL FIRE

The subject property is located within a State Responsibility Area (SRA) for fire protection. Several improvements are proposed in order to meet SRA requirements, including designating a fire turn-around and pull-out area for emergency vehicles, and management of trees and vegetation around existing structures to maintain the required 100-foot defensible space. All structures on the property meet the 30-foot SRA setback requirement from property lines. If required by Cal Fire, a 2,500-gallon water tank with a riser to SRA specifications will be installed for firefighting purposes.

1.4.6. CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

A Lake and Streambed Alteration (1600 permit) has been executed for the shallow well and two points of diversion (Agreement No. 1600-2016-0279). Onsite stream crossings have been approved and upgraded through the Non-industrial Timber Management Plan (1-14NTMP-008HUM).

1.4.7. CULTURAL RESOURCES

A Cultural Resources Survey has been prepared by Mark Arsenault, M.A., RPA. The report did not locate historic or tribal cultural resources within the proposed cultivation area. If buried archaeological or historical resources are encountered during construction or cultivation activities, the applicant or contractor shall call all work in the immediate area to halt temporarily, and a qualified archaeologist is to be contacted to evaluate the materials. Prehistoric materials may include obsidian or chert flakes, tools, locally darkened midden soils, groundstone artifacts, dietary bone, and human burials. If human burial is found during construction, state law requires that the County Coroner be contacted immediately. If the remains are found to be those of a Native American, the California Native American Heritage Commission will then be contacted by the Coroner to determine appropriate treatment of the remains. The applicant is ultimately responsible for ensuring compliance with this condition.

2. CULTIVATION AND PROCESSING

2.1. PROPAGATION AND INITIAL TRANSPLANT

For current operations, juvenile plants are sourced from offsite. For the full site build-out, Black Bear Farms proposes to propagate juvenile plants on site from seeds and mother plants within two (2) 24' x 125' greenhouses (See Appendix A – Site Plan). The total immature plant area is proposed to be 6,000 sq. ft., less than 5% of the proposed cultivation areas. In addition to onsite propagation of nursery plants, clones will likely also need to be purchased from offsite.

Mother plants will remain in the vegetative stage solely for propagation. Cuttings will be sampled from the mother plants and rooted into a growing medium, typically oasis cubes or similar, to produce clones. The clones will then be transferred to the vegetative nursery area, and after approximately 2-3 weeks will be transplanted into one-gallon pots or similar. The juvenile plants will then be irrigated using hand watering or drip irrigation methods, and after three weeks will be transplanted into their final location where they will continue their vegetative cycle and eventually flower. See the Cultivation Activities Schedule in Appendix B. This schedule is subject to change based on resource availability, weather, staffing, and specific cannabis strains.

Onsite propagation of nursery plants involves maintaining mother plants throughout the off-season. The McCann Bridge is not accessible during times of high flows during the off season, thus limiting the ease of access to the site. In order to maintain site winterization measures (including the monitoring required by the SWRCB General Order, unplugging culverts, etc.) and ensure the continued health of the mother plants, the applicant is proposing to send 2 staff personnel every few days or once/week to the site utilizing the County-operated McCann Ferry. It is also possible that the owner/operator may live onsite during the off season to oversee the immature plant propagation.

2.2. OUTDOOR (FULL-SUN AND LIGHT-DEPRIVATION) CULTIVATION PLAN AND SCHEDULE

The 163,560 sq. ft. of full-sun outdoor cultivation will be planted directly in-ground, as required by the CCLUO (Ordinance 2.0). The 30,000 sq. ft. of light-deprived cultivation (including the existing approved 10,000 sq. ft. and the proposed 20,000 sq. ft. of RRR cultivation – See Table 1, above) will be planted in-ground within twelve (12) 24' x 100' greenhouses and one (1) 24' x 54 greenhouse, which will require reorganizing the current square footage of the existing 10,000 sq. ft. The hoop houses will consist of heavy gauge steel tubing with concrete footings and will be covered with a woven poly translucent tarp. These hoop houses will be constructed so that they are temporary and could be removed, if necessary, in the future. No improved floor or foundation is proposed, thus not precluding the prime agricultural soils, and allowing the greenhouses to be removed in the future if necessary. The greenhouses utilize light deprivation techniques to produce two (2) flowering cycles per year, dependent on weather. The hoop house covers will be removed and stored prior to the rainy season, and the beds will be mulched and cover cropped to ensure runoff does not occur during the winter. No supplemental lighting is proposed to be used to flower plants. See the Cultivation Activities Schedule in Appendix B.

2.3. IRRIGATION PLAN AND SCHEDULE

Irrigation and fertigation of plants will occur using drip irrigation and some top-feed hand watering methods as appropriate. While most irrigation needs will be on automatic drip, some irrigation and fertigation may more efficiently managed via hand watering, allowing for daily inspection of each plant by the cultivator and tailored irrigation and nutrient application depending on the needs of each individual plant. See the Cultivation Activities Schedule in Appendix B.

2.4. PROCESSING PLAN (HARVESTING AND DRYING)

Plants that are ready for harvest will have their flowering branches removed and suspended in the proposed drying barn. The drying process takes approximately one week. The dried flowers will be bucked into manageable buds and transported to an off-site processing facility for trimming, packaging, and distribution. See the Cultivation Activities Schedule in Appendix B.

2.5. EMPLOYEE/ACCESS PLAN

Black Bear Farms, LLC is an “agricultural employer” as defined in the Alatorre-Zenovich-Dunlap-Berman Agricultural Labor Relations Act of 1975 (Part 3.5 (commencing with Section 1140) of Division 2 of the

Labor Code), and complies with all applicable federal, state and local laws and regulations governing California Agricultural Employers. Black Bear Farms, LLC will comply with all OSHA standards.

2.5.1. STAFFING REQUIREMENTS

During the cultivation season, the proposed project is expected to employ up to fourteen (14) full-time workers and approximately nine (9) additional part-time employees for peak seasonal operations such as planting or harvesting. At any given time, there may be up to 23 people located on the project site.

2.5.2. EMPLOYEE TRAINING AND SAFETY

On site cultivation, harvesting and drying will be performed by employees trained on each aspect of the procedure including cultivation and harvesting techniques and use of pruning tools; proper application and storage of pesticides and fertilizers. All cultivation staff will be provided with proper hand, eye, body and respiratory Personal Protective Equipment (PPE). Access to the onsite cultivation and drying facilities will be limited to authorized and trained staff. All employees will be trained on proper safety procedure including fire safety; use of rubber gloves and respirators; proper hand washing guidelines; and protocol in the event of an emergency. Contact information for the local fire department, CAL FIRE, Humboldt County Sheriff and Poison Control as well as the Agent in Charge will be posted at the employee restroom. Each employee is provided with a written copy of emergency procedures and contact information. The material safety data sheets are kept on site and accessible to employees. Black Bear Farms, LLC will follow all OSHA requirements.

2.5.3. TOILET AND HANDWASHING FACILITIES

The proposed drying facility will include one (1) ADA-compliant restroom, including a working flush toilet and a sink with hot and cold running water. Anti-bacterial liquid soap and hand towels will be available. The existing single-family residence includes one restroom, which employees can access while working until the proposed drying facility is constructed. Employees will work at a distance typically no greater than 900 feet from the restroom facility.

2.5.4. SITE ACCESS PLAN

The subject parcel is accessed off of McCann Road. McCann Road is impassible during certain times of year due to the low-water bridge, which gets covered by the heightened Eel River during the rainy season. The exact closing date of the bridge varies from year to year depending on weather conditions, but typically, the bridge becomes inaccessible anywhere from late October to December and reopens in March or April. The start of the season for this project (See Appendix B for Cultivation Activities Schedule) will be dictated by the opening of McCann Road.

As discussed above, fourteen (14) full-time employees will help operate the site and an additional nine (9) part-time workers may be required for peak seasonal events (See Section 2.5.1). To reduce the impact of employee traffic on the McCann Bridge and the Eel River bar, the applicant proposes that employees will carpool to and from the site each day, leaving their cars in the public parking lot located near Exit 663 off of the 101 or another suitable location. Prioritizing carpooling amongst employees will help reduce the number of vehicle trips to and from the site daily from approximately 14-23 (without carpooling) to 3-5 (with carpooling). Additionally, as described in Section 2.1 above, two (2) of the fourteen full-time employees will work year-round to ensure the site is maintained and properly winterized. If the site is inaccessible via vehicle, they will utilize the County-maintained McCann Ferry.

2.5.5. PARKING PLAN

Employees will live off site and commute daily to the cultivation site. Employees will carpool when viable to reduce the number of daily vehicle trips to and from the site. Fourteen (14) parking spaces will be

located near the proposed drying facility, including one (1) ADA-compliant space. Additional parking spaces will be provided if required.

2.6. SECURITY PLAN AND HOURS OF OPERATION

2.6.1. FACILITY SECURITY

The property is accessed through an entry gate which locks. Cultivation facilities, including greenhouses, outdoor cultivation, storage sheds, and the drying facility, will be enclosed in the existing fence and will only be accessible through the locked gate. Access to the area is limited to employees and approved personnel including agency staff, consultants, and distributors. Retail is not a proposed aspect of this project, and the general public will not be allowed to access the site.

2.6.2. HOURS OF OPERATION

Activities associated with cultivation in the greenhouses (watering, transplanting, and harvesting) generally occur during daylight hours. All other activities such as harvesting and drying typically occur no earlier than 8 AM and extend no later than 8 PM.

3. ENVIRONMENT

3.1. IRRIGATION PLAN

3.1.1. WATER SOURCE

Water for the 183,560 sq. ft. of proposed cultivation will be sourced primarily from rainwater and supplemented by the groundwater. A groundwater well exists onsite. The applicant may also pursue drilling a second groundwater well, which, if deemed hydrologically disconnected from surface waters, may be used to offset proposed storage (See Section 3.1.3). No diversionary water sources are proposed as irrigation sources for the proposed project.

Two springs and a shallow well are located on the subject property and are permitted to serve the already-approved 10,000 sq. ft. of cultivation (Apps #10676, SWRCB SIUR #H506556), though the springs are currently only used for domestic purposes. The approved 10,000 sq. ft. also utilizes rainwater captured in an existing 60,000-gallon rainwater catchment tank. The existing 60,000-gallon rainwater catchment tank has been engineered to accommodate 280,000 gallons of storage by attaching permitted extensions. In the approval for the Apps #10676, the proposed cultivation will require 128,000 gallons of storage for irrigation outside of the diversion period. Therefore, to accommodate the approved storage demand, a 130,000-gallon tank is proposed to be installed for use during future seasons (2021 and beyond). The 130,000-gallon tank will separate water stored for the approved 10,000 sq. ft. of cultivation from the proposed 183,560 sq. ft. of cultivation.

3.1.2. PROJECTED WATER USE

Water usage for the 183,560 sq. ft. of proposed cannabis cultivation is projected to be approximately 815,000 gallons. Variables such as weather conditions and cannabis strains will have an impact on water use. See Table 2 for a detailed breakdown of water demand.

The irrigation demand for the cultivation activities is anticipated to be less than typical cultivation operations because plants are proposed to be directly in the fertile prime agricultural soils. The site soils are primarily Parkland-Garberville complex soils on 2 to 9% slopes with clay/gravelly loam soil compositions. These types of soils have a high available water storage (NRCS Web Soil Survey, 2019),

retaining moisture and allowing the plants to uptake water from the roots and reduce the demand for additional irrigation. The elevation of the site and the location of the cultivation next to the Eel River is also expected to reduce irrigation demand, as the site receives morning fog during the drying season.

Table 2: Estimated Annual Irrigation Water Usage for the Proposed Project (Gallons) – Exact amounts subject to change													
	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>April</i>	<i>May</i>	<i>June</i>	<i>July</i>	<i>Aug</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Total</i>
Nursery	0	0	0	4,000	6,000	3,000	2,000	0	0	0	0	0	15,000
Full-sun Outdoor	0	0	0	0	90,000	100,000	120,000	140,000	140,000	60,000	0	0	650,000
Light-Dep	0	0	0	5,000	10,000	15,000	50,000	30,000	25,000	15,000	0	0	150,000
Total	0	0	0	9,000	106,000	118,000	172,000	170,000	165,000	75,000	0	0	815,000

Additionally, automated drip-emitters with moisture sensors will be installed to ensure each plant is efficiently watered and to prohibit irrigation runoff. These drip emitters will also help prohibit irrigation runoff.

3.1.3. WATER SOURCE, STORAGE, AND USE COMPLIANCE PLAN

Black Bear Farms is committed to complying with all forbearance periods and restrictions on water source and use recommended by agencies. To achieve this, the applicant is proposing a Water Source, Storage, and Use Compliance Plan detailed in Table 3. All water sources will be metered and water usage and application from each source will be tracked and reported to applicable agencies.

The total proposed storage for the 183,560 sq. ft. is 640,000 gallons, which includes the existing 280,000-gallon tank and proposed 72 x 5,000-gallon tanks. As discussed in the Rainwater Catchment Analysis (Section 3.1.4, below), all of the proposed storage is anticipated to fill with rainwater during a typical precipitation year. Rainwater for irrigation will be supplemented by the existing groundwater well. A second groundwater well may also be drilled which, if deemed hydrologically disconnected from surface waters, may be utilized as an irrigation source and would reduce the number of required storage tanks. The exact amount of storage the proposed well would offset would depend on the production rate.

Until such a time that the applicant can obtain and fill the required water storage, the applicant is proposing to dry-farm cultivation. During the 2020 season, approximately 163,560 sq. ft. will be cultivated using dry-farming techniques supplemented by existing onsite storage and the existing groundwater well. Information about which specific permit applications will be dry farmed during 2020 is shown in Table 3.

Table 3. Water Source, Storage, and Use Compliance Plan						
<i>Permit</i>	<i>Apps#</i>	<i>Description and Sq. Ft.</i>	<i>Proposed Water Source and Storage</i>		<i>Justification</i>	
			<i>2020 Cultivation Season</i>	<i>Future Seasons</i>	<i>Estimated Demand (Gallons)</i>	<i>Future Seasons Explanation</i>
Nearly approved RRR (ZCC)	12915	20,000 Light-Deprivation Outdoor	Rainwater Catchment - Existing 280,000-gallon tank to be filled before April 1st	Rainwater Catchment - Existing 280,000-gallon Tank	150,000	To irrigate the 20,000 sq. ft. of light-deprived cultivation, 150,000 gallons will be sourced from the existing 280,000-rainwater catchment tank. In a typical rainfall year, the 280,000-gallon tank will fill up with rainwater collected by its own surface area and the roof area of the existing

						facilities onsite (See Section 3.1.4 Rainwater Catchment Analysis).
RRR (SP)	12083	43,560 Full-sun outdoor	Dry-farming Techniques Supplemente d by Existing Groundwater Well	Rainwater Catchment Tanks Supplemented by Existing Groundwater Well or Future Groundwater Well	170,000	To irrigate the acre RRR, rainwater catchment and storage is proposed. 130,000 gallons of the projected demand will be sourced from the 280,000-gallon tank and the additional 40,000 gallons of demand will either be sourced from 5,000-gallon rainwater catchment tanks or will be sourced from a future groundwater well.
6 x RRRs (ZCCs)	12719, 12713, 12418, 12742, 12080, 15294	20,000 Full-sun outdoor Each	Dry-farming Techniques Supplemente d by Existing Groundwater Well	Rainwater Catchment Tanks Supplemented by Existing Groundwater Well or Future Groundwater Well	6 x 80,000 (480,000)	To irrigate these 6 RRRs and the nursery, the applicant will add up to 360,000 gallons of 5,000-gallon rainwater catchment tanks, which partially fill themselves during a typical precipitation year (See Section 3.1.4 Rainwater Catchment Analysis). Irrigation will be supplemented by the existing groundwater well, which is expected to produce approximately 240,000 gallons (1 GPM) during the growing season. Irrigation may also be supplemented by a proposed second groundwater well which, if deemed hydrologically disconnected from surface waters, will be used to offset the number of proposed rainwater catchment tanks.
Nursery	n/a	6,000 n/a	Dry-farming Techniques Supplemente d by Existing Groundwater Well	Rainwater Catchment Tanks Supplemented by Existing Groundwater Well or Future Groundwater Well	15,000	

3.1.4. RAINWATER CATCHMENT ANALYSIS

As discussed above, the water source for the proposed project is primarily rainwater supplemented by an existing and potential future groundwater well. This section details how much rainwater can be captured and stored on APN 211-283-007 for the proposed project build-out.

In the final proposed build-out for future seasons, the applicant is proposing to source water from the existing 280,000-gallon rainwater catchment tank and up to 72 x 5,000-gallon rainwater catchment plastic tanks (640,000 gallons total). The proposed tanks will be filled with rainwater caught by their own surface area and from additional catchment surfaces including the existing residence, the proposed drying building, the existing storage building, and the proposed nursery greenhouses (Table 4). The capture efficiency of the tanks is estimated to be 100%. The capture efficiency of the rooftops is estimated to be approximately 95% due to potential breaks in the guttering or other unforeseen complications.

Based on rainfall data provided by PRISM Climate Group, which provides site-specific average annual rainfall data based on topography and historic precipitation values from 1895-2018, the average rainfall for the project area is 53 inches.

In total, the 640,000 gallons of rainwater catchment tanks can collect approximately 284,338 gallons of rainwater from their own surface areas. The additional catchment surfaces can collect approximately 356,656 gallons of rainwater, which will be piped to the storage tanks. Combined, the tanks and additional catchment areas have the potential to collect approximately 640,994 gallons of rainwater, enough to fill

the 640,000-gallons of storage tanks. All calculations were based off of an annual precipitation amount of 53 inches, though precipitation is likely to vary widely between years. If precipitation is than 53 inches in a given year, storage will be filled using the existing groundwater well or a potential second well, depending on production.

Table 4. Detail of Rainwater Catchment Surfaces						
<i>Catchment Surface</i>	<i>Dimensions (ft)</i>	<i>Catchment Area (sf)</i>	<i>Average Annual Rainfall (in)</i>	<i>Collection Potential (gal)</i>	<i>Actual Amount Captured (gal)</i>	<i>Totals (gal)</i>
<E> 280,000-gallon tank	42 (diameter)	1,385	53	45,730	45,730	Total Water Captured by Rainwater Catchment Tanks Alone: 284,338 gallons
<P> 72 x 5,000-gallon tanks	11 (diameter)	95	53	3,314	238,608	
<P> Drying Facility	40' x 60'	2,400	53	79,245	75,283	Total Water Captured by Catchment Surfaces: 356,656 gallons
<E> Residence	n/a	2,250	53	74,295	70,580	
<E> Storage Building	36' x 20'	720	53	23,774	22,585	
<P> Nursery	(2) 30' x 100'	6,000	53	198,114	188,208	
Total Proposed Water Storage Demand						640,000 gal.
Total Rainwater Collection Potential (Combined Tanks and Catchment Areas)						640,994 gal.

3.2. SITE DRAINAGE, RUNOFF, AND EROSION CONTROL

Black Bear Farms, LLC has enrolled with the State Water Resources Control Board (SWRCB) for coverage under the General Order. A Site Management Plan for existing site conditions has been developed. The Site Management Plan details erosion control and sediment capture mechanisms, as well as road maintenance and runoff activities.

3.2.1. STORMWATER MANAGEMENT PLAN

The proposed cultivation activities will take place on an approximately 5-acre historic agricultural field. As described above, the field is mostly flat, with slopes less than 15% and contains prime agricultural soils with a high drainage capacity. The full-sun outdoor cultivation is proposed to be planted in ground and is not expected to impact the drainage characteristics of site soils. The outdoor cultivation in greenhouses, which will also be planted in ground, are not expected to increase stormwater runoff because greenhouse skins will be removed prior to the rainy season.

Stormwater Management for the remainder of the property, including recommendations to maintain the road network, is addressed in the accompanying Site Management Plan.

Existing and proposed structures will be located over 150 feet from the Mainstem of the Eel River, providing a sufficient buffer to prevent potential sediment or nutrient delivery. To further prevent runoff to riparian areas, water conservation and containment measures will be implemented including the use

of drip irrigation to prevent excessive water use, and the maintenance of a stable, vegetated buffer between the cultivation area and riparian zone.

3.2.2. EROSION CONTROL

The Site Management Plan prepared for this site includes erosion and sediment control BPTCs designed to prevent, contain, and reduce sources of sediment. The Site Management Plan includes corrective actions to reduce sediment delivery from the timber roads on the property, including rocking roads, replacing culverts, installing rolling dips and water bars, and unplugging ditch relief culverts.

3.3. WATERSHED AND HABITAT PROTECTION

The mainstem of the Eel River runs northwesterly through the subject property. This segment of the Eel River has been designated as a Wild & Scenic River and is an important resource for sensitive and endangered wildlife species, including anadromous salmonids. All existing and proposed cultivation activities will be set back at least 150 feet from the Eel River (Class I), 100 feet from the Class II stream, and at least 50 feet from any Class III drainages on site. All proposed cultivation will also be set back 100 feet from the onsite delineated wetland (Regan, 2019). These setbacks should provide a suitable buffer between the cultivation operation and habitat. Adherence to the Site Management Plan will ensure that erosion control and sediment capture BPTC measures are in place to prohibit water quality degradation of the nearby river. Any grading and earthwork activities will be conducted by a licensed contractor in accordance with approved grading permits.

3.4. INVASIVE SPECIES CONTROL PLAN

As described above, the agricultural field proposed for cultivation has historically been utilized for ranching, agriculture, and livestock activities. Once proposed cultivation activities commence, the cultivation area will be monitored for invasive species. If invasive species are located, mechanical will be implemented. Hand tools, such as shovels, weed wrenches, trowels, or hand saws, may be used to remove invasive species. The exact rate and method of invasive species will be determined by the species identified, which may include Scotch broom (*Cytisus scoparius*) and yellow starthistle (*Centaurea solstitialis*). The areas of disturbance shall be surveyed and maintained bi-annually, at a minimum, as part of the invasive species control plan.

The following is a partial list of websites to be used for proper identification and treatment:

1. <https://calflora.org/>
2. <https://plants.usda.gov/java/>
3. <https://www.cal-ipc.org/>
4. <https://www.cal-ipc.org/solutions/>
5. <http://www.rareplants.cnps.org/>
6. <https://www.wildlife.ca.gov/Conservation/Plants#22064102-california-native-plant-information>
7. <http://ucjeps.berkeley.edu/>
8. http://wetland-plants.usace.army.mil/nwpl_static/v33/home/home.html
9. <https://www.fws.gov/invasives/partnerships.html>

3.5. MATERIALS MANAGEMENT PLAN

Materials kept on site include fertilizers, pesticides petroleum products for equipment, propane, cleaning fluids, and soil amendments. See the accompanying Site Management Plan for details regarding current operating procedures and processes, associated equipment, fertilizer mixing and application, fertilizer and

pesticide storage, waste volumes and storage areas, petroleum products storage and usage, and emergency equipment related to the use of hazardous materials.

3.6. SOILS MANAGEMENT PLAN

Black Bear Farms, LLC is proposing to plant all cultivation in the prime agricultural soils located onsite. Native soils will be the majority of soils used to cultivate cannabis, although some additional soil or amendments may need to be integrated into the growing medium to ensure cultivation. Bear Farms, LLC will account for and keep records of annual and seasonal volumes of soil imported and exported on and off site. Any purchased soils will be reamended for use the following year. During the wet season, any soil piles will be located in a flat area outside of riparian setbacks and winterized, likely with a tarp underneath the pile and straw wattles located around the pile to prevent leachate from entering surface waters. Potential spent soils will be properly disposed of off-site at an appropriate facility.

3.7. ENERGY PLAN

The subject parcel is powered by Pacific Gas & Electric Company. To meet the County's Renewable Energy Performance Standard as outlined in Section 55.4.12.5 in Ordinance 2.0, the applicant will upgrade to the RE Power+ Plan through PG&E. The RE Power+ Plan supplies 100% renewable energy through the Redwood Coast Energy Authority. A generator is kept onsite for use during an emergency.

3.8. WASTE MANAGEMENT

3.8.1. CULTIVATION

Waste generated from domestic activities is stored in garbage cans inside the house and will be transported to an appropriate facility weekly or as needed. Organic cultivation-related waste, including root balls, branches, and leaves, are composted near the existing cultivation area. Trash and recycling from cannabis operations, including empty soil or fertilizer bags, liquid fertilizer bottles, cultivation supplies, etc., will be taken to the nearest Waste Management Authority as needed.

3.8.2. SEWAGE DISPOSAL PLAN

The proposed drying facility will include one (1) ADA-compliant restroom, including a working flush toilet and a sink with hot and cold running water. Upon approval from the Planning Department, Black Bear Farms, LLC will secure all applicable permits for the processing facility through the Building Department and the Department of Public Works. The proposed septic system will be designed by an engineer and all necessary permits will be obtained. The existing single-family residence includes one restroom, which employees can access while working until the proposed drying facility is constructed.

4. PRODUCT MANAGEMENT

4.1. PRODUCT TESTING AND LABELING

Samples are selected from individual harvested cannabis strains and are tested by a licensed third-party lab in accordance with State and local standards. The finished product is labeled and will include tracking ID's provided by the California Cannabis Track-and-Trace (CCTT) METRC system.

4.2. PRODUCT INVENTORY AND TRACKING

Black Bear Farms, LLC will follow all regulations and requirements set by the CCTT-METRC system. After approval of state licenses related to the proposed cultivation, Black Bear Farms, LLC will request credentials and order unique identifiers (UIDs) which will be assigned to each immature lot, flowering plant, and distinct cannabis product.

4.3. TRANSPORTATION AND DISTRIBUTION

Transportation will be handled by a licensed transporter/distributor in accordance with State and Local regulations. All merchantable product will be distributed through licensed commercial cannabis dispensaries. The CCTT-METRC system will be used for all transactions with distributors or transporters.

APPENDIX A: SITE PLAN

APPENDIX B: CULTIVATION ACTIVITIES SCHEDULE

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APPENDIX C: REFERENCES

1. Bass, Ronald E., Kenneth M. Bogdan, and Terry Rivasplata. 2013. CEQA Desktop. Point Arena, CA; Solano Book Press. Page 44.
 2. California Natural Diversity Database (CNDDDB) Maps and Data. (2018). California Department of Fish and Wildlife. Retrieved from <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data#43018408-cnddb-in-bios>
 3. Humboldt County Web GIS. (2018, May). Humboldt County Planning and Building Department. Retrieved from <http://webgis.co.humboldt.ca.us/HCEGIS2.0/>
 4. California Code of Regulations. Health and Safety Code Section 11357-11362.9. <<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=11001-12000&file=11357-11362.9>>
 5. California Natural Diversity Database (CNDDDB) Maps and Data. (2018). California Department of Fish and Wildlife. Retrieved from <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data#43018408-cnddb-in-bios>
 6. Humboldt County Web GIS. (2018, May). Humboldt County Planning and Building Department. Retrieved from <http://webgis.co.humboldt.ca.us/HCEGIS2.0/>
 7. County of Humboldt. *Medical Marijuana Land Use Ordinance (MMLUO) – Phase IV, Commercial Cultivation, Processing, Manufacturing and Distribution of Cannabis for Medical Use* (Staff Report to the Board of Supervisors). January 26, 2016. <<https://humboldt.legistar.com/Calendar.aspx>>
 8. County of Humboldt. *Commercial Cannabis Land Use Ordinance (CCLUO)*.
 9. Natural Resources Conservation Service. *Web Soil Survey*. 2019.
 10. North Coast Regional Water Quality Control Board. 2016. *Cannabis Cultivation Waste Discharge Regulatory Program*. http://www.waterboards.ca.gov/northcoast/water_issues/programs/cannabis/.
 11. State of California, Department of Forestry and Fire Protection. (2018, January). *California Forest Practice Rules: Title 14, California code of regulations, chapters 4, 4.5 and 10 with the Z'Berg Nejedley Forest Practice Act, the Professional Foresters law, and the Registration of Professional Foresters Rules*. Sacramento, CA: The California Department of Forestry and Fire Protection.
 12. State of California, North Coast Regional Water Quality Control Board. (2015, August). *Order No. R1-2015-0023: Waiver of Waste Discharge Requirements and General Water Quality*
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Certification. Retrieved from

https://www.waterboards.ca.gov/northcoast/board_decisions/adopted_orders/pdf/2015/15_0023_Cannabis_Order.pdf

13. State of California, State Water Resources Control Board. (2017, October). *Cannabis Cultivation Policy: Principles and Guidelines for Cannabis Cultivation*. Retrieved from https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/final_cannabis_policy_with_att_a.pdf
 14. State of California, State Water Resources Control Board. (2017, October). *Order No. WQ 2017-0023-DWQ: General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities*. Retrieved from https://www.waterboards.ca.gov/water_issues/programs/cannabis/docs/finaladoptedcango101717.pdf
 15. State of California, California Department of Transportation, Division of Environmental Analysis, Stormwater Program. (2017, May). CTSW-RT-17-314.18.1: *Construction Site Best Management Practices (BMP) Manual*. Retrieved from <http://www.dot.ca.gov/hq/construc/stormwater/CSBMP-May-2017-Final.pdf>
 16. Weaver, W.E., Weppner, E.M. and Hagans, D.K. (2015, April). *Handbook for Forest, Ranch and Rural Roads: A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining and Closing Wildland Roads*. Ukiah, California: Mendocino County Conservation Resource District.
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