

# Operational Plan

Emerald Mines Corp

PLN-11756-SP

Last Updated April 27, 2023

## **DESCRIPTION OF CULTIVATION ACTIVITIES**

### Cultivation

The project is for 9,453 square feet of outdoor commercial cannabis cultivation. Cultivation occurs in six light deprivation greenhouses and one full sun area. Greenhouse six is proposed to have up to two harvest cycles annually.

Greenhouse 1	16x88	1,408
Greenhouse 2	16x88	1,408
Greenhouse 3	16x60	960
Greenhouse 4	12x60	720
Greenhouse 5	12x60	720
Greenhouse 6	28x90	2,520
Full Sun Area		1,717
<b>TOTAL SF</b>		<b>9,453</b>

Applicant will plant directly into raised beds located in each greenhouse, and in smart pots in the full Sun area. Applicant will amend soils using local and native materials and apply a mulch layer to re-amend native soils after each use.

### Ancillary Nursery

No ancillary nursery is proposed for this project. Clone stock is obtained offsite from a permitted and licensed facility.

### Cultivation Setbacks

No known schools, school bus stops, public parks, religious places of worship, or tribal communities/ resources within 2000' of cultivation areas. All cannabis structures meet the minimum 30 foot SRA setback.

### **Processing**

All processing will be handled off site at a permitted and licensed facility. Approximately one half the total yearly harvest from Emerald Mines would be frozen fresh and transported offsite to permitted processing or manufacturing facility for processing.

Harvest may include manicure harvest techniques which consists of cutting the tops of plants first and transported to a licensed processor. The remaining flower material will be harvested 5-7 days later and shipped for processing. Harvested flower is transported wet on freezer trucks and up to two truck loads/trips by a single truck would be necessary to handle the annual harvest.

**SCHEDULE OF ACTIVITIES**

<b>Dates</b>	<b>Greenhouse #6</b>	<b>Hoophouses #1 thru #5</b>	<b>Full Sun Area #7</b>	<b>Water Usage</b>	<b>Employees</b>
May 1 - 5	Plant	Soil preparation	Soil preparation	750g	1-3
May 6 - July 1	Cultivate	Plant and Cultivate	Plant and Cultivate	16,800g	1-3
July 2 - 15	Manicure and Harvest	Cultivation	Cultivation	6,300g	1-3
July 16 - 25	Harvest and Replant	Cultivation Trellis plants	Cultivation	4,500g	1-3
July 25 - Sept 15	Cultivate	Cultivation	Cultivation	33,800g	1-3
Sept 16 - Sept 21	Cultivate	Cultivation	Cultivation	3,600g	1-3
Sept 22 - October 15	Manicure and Harvest	Manicure/ Harvest	Manicure/ harvest	9,600g	1-3
October 15 - November 1	Harvest	Harvest	Harvest	3,000g	1-3
November 2 - May 1	Clean up Winterization	Clean up Winterization	Clean up Winterization	None	1-3
<b>TOTAL</b>				<b>78,350</b>	

**DESCRIPTION OF WATER SOURCE AND STORAGE**

Source

Irrigation water is sourced exclusively from rainwater catchment. Please see separate rainwater catchment analysis conducted by Randy Klein, Hydrologist.

Irrigation Plan

Operation will be using a drip system to irrigate crops. The system will use three (3) gallon per hour emitters for every plant. Applicant intends to hand water one day each month of the growing season in lieu of drip irrigation in order to apply compost tea or liquid fertilizer that could damage the drip system. Applicant will apply mulch over bare soils to minimize evaporative loss. Applicant will water early in the mornings or late afternoon/evenings when temperatures are cooler to further minimize evaporative loss.

Projected Water Usage

Annual water usage is estimated to be approximately 78,350 gallons per year which is approximately 8.29 gallons per square foot.

Water Storage

Cannabis Irrigation Storage:

14x 5,000-gallon tanks for a total of 70,000 gallons (6 existing, 8 proposed)

4x 3,500-gallon tanks for a total of 14,000 gallons. (3 existing, 1 proposed)

4x 2,500-gallon tanks for a total of 10,000 gallons (3 existing, 1 proposed)

1x 1,500-gallon tank for a total of 1500 gallons (existing)

1x 1,000 gallon tank for a total of 1,000 gallons (existing)

**96,500 gallons total irrigation storage**

Fertigation Tanks:

1x 1500 gallon tank. (existing)

1x 500 gallon tank. (existing)

Fire Suppression Storage:

1x 2,500-gallon tank dedicated for fire suppression (existing).

Domestic Storage:

1x 1,500-gallon tank.

**DRAINAGE, RUNOFF AND EROSION CONTROL**

A site management plan prepared by Margo Advisors has been provided (WDID: 1B161376CHUM).

Safety valves will be implemented, and on-site owner/operators will monitor irrigation lines to prevent leaks and maintain drip irrigation systems. Flow/Water meters will be installed at critical points to monitor water usage for reporting purposes. All water tanks will have float valves to prevent any water from overflowing.

Water flow is metered and will be regularly recorded and reported with the end of the year monitoring report. Tanks lines and all connections will be checked periodically for wear, damage, and leaks. All repairs are done immediately or mitigated until replacement parts are obtained.

BPTC measures being implemented to ensure erosion prevention include applying straw mulch or replanting native vegetation or exposed soil to minimize erosion. Plants are grown in raised beds on covered greenhouse /hoop houses. When exposed surfaces or bare slopes appear, topsoil is covered with straw for temporary worrisome control to minimize sediment and stabilize the surface in the event of heavy rainfall. In addition, there is no driving or operating of vehicles or equipment within the riparian setbacks or within waters of state unless authorized.

BPTC measures being implemented to capture sediment that has been eroded include usage of vegetative ground cover. Soil will be topped with straw and mulch., grass seed, or cover crop for sediment control to prevent erosion and transportation of sediment. Placement of additional gravel, straw wattles, and slit screen will be implemented if deemed necessary.

Stream Crossings

As mentioned in the site management plan there are no stream crossings on parcel.

**WATERSHED AND HABITAT PROTECTION**

The road has been rocked and hay and grass seed is used to contain erosion. Used soil will be reclaimed. Soil is kept on tarps and covered in plastic. Soil beds are covered in plastic during the winter. Watering is carefully controlled to avoid overwatering and runoff. Applicant will obtain after the fact grading permits for historic grading done in association with cannabis cultivation. A deer fence surrounds the entire property and other natural wildlife deterrents are used. Trash bins shall be secured from wildlife. No anticoagulant pesticides or rodenticides will be used.

**FERTILIZERS, PESTICIDES, AND OTHER REGULATED PRODUCTS**

The pest management practices to be used are as follows: clones and seed are started with healthy pest free stock, this helps to start with clean pest free starts. Diatomaceous earth will be used in the early season and throughout the growing season. Predator nematodes will be applied periodically to the soil starting in the preseason to kill any larva and adult pests that live in the soil. Predator mites (amblyseius fallacis, amblyseius californicus, amblyseius swirskii) will be used for mite control. Steinernema feltiae (beneficial nematodes) will be used on mothers and in the nurseries.

Pesticides

Applicant may use the following pesticides: Green Clean, Plant Therapy, Neem, Grandevo, Regalia. All pesticides or herbicides on the property will be all natural, OMRI certified organic ingredients and will be used according to the product labeling. Pesticides will be stored in locked cabinets in the processing buildings. These buildings will have impermeable floors. Applicant will maintain a spill kit in the Ag Barn, Pesticide Storage, Admin Hold area. Applicant will maintain and keep personal protective equipment required by the pesticide label in good working order. Coveralls will be washed after all use when required.

<b>Pest management Items</b>	<b>Annual usage</b>	<b>Active ingredients</b>
Green cleaner	10 oz	Soybean oil, sodium lauryl, Sulfate, Cotric Acid, Isopropanol, alcohol.
Plant therapy	24 oz	Soy oil, peppermint essential oil, citric acid, soap, alcohol, sodium citrate, water
Neem oil	20 oz	Azadirachtin
Grandevo	80 tbsp	Chromobacterium praa4-1
Sulfur	40 tbs	Sulfur

All required warning signs will be posted and material safety data sheets (MSDS) will be kept in the area where pesticides are stored. Emergency contact information in the event of pesticide poisoning shall also be posted at the work site including the name, address and telephone number of emergency medical care facilities. Change areas and decontamination rooms will be available in the processing buildings.

Before making a pesticide application, operators will evaluate equipment, weather conditions, and the property to be treated and surrounding areas to determine the likelihood of substantial drift or harm to non-target crops, contamination, or the creation of a health hazard.

### Fertilizers

Applicant uses the following fertilizers: Green sand, alfalfa pellets, worm castings, compost, blood meal, bone meal, kelp, fish hydrolysate, feather meal, crab meal, and oyster shell. All fertilizers on the property will be all natural, OMRI certified organic ingredients and will be used according to the product labeling. Fertilizers will be stored in the processing buildings or locked sheds located at the Lower Field. Applicant will maintain spill kits in each processing building.

Before making a fertilizer application, operators will evaluate equipment, weather conditions, and the property to be treated and surrounding areas to determine the likelihood of substantial drift or harm to non-target crops, contamination, or the creation of a health hazard.

### Soil Amendments

Applicant will utilize best practices to minimize carbon footprint. In the short-term, Applicant will take soil samples and purchase amendments and organic inputs from a local wholesaler. Long-term, Applicant will make their own compost, worm casting, and biochar, using animal byproducts and biomass grown on the ranch. Applicant will also make their own fertilizers using lactobacillus fermentation techniques. Applicant will make their own compost tea. These techniques will help close the loop creating a self-sustaining farm. Two compost areas have been planned, one located at the Lower Field the other at the Ridge site. Compost tea will be brewed within the compost areas .

Soil amendment components will be bought in quantities needed for immediate use. Generally they will be purchased a short time prior to use and will not need to be stored. Any left over amendments will be stored in containment in buildings or sheds. Applicant will maintain a spill kit on site.

Before making a soil amendment application, operators will evaluate equipment, weather conditions, and the property to be treated and surrounding areas to determine the likelihood of substantial drift or harm to non-target crops, contamination, or the creation of a health hazard.

### Petroleum Products and Storage

Gasoline would be needed onsite to run some power tools (weedwhacker, mower etc.) Applicant intends to store gasoline and/or diesel fuel in quantities of less than 50 gallons.

Gasoline will be stored inside of separate locked storage container, in approved fuel storage containers. These containers will be located next to the processing building.

Applicant will maintain a spill kit on site and secondary containment will be used to prevent leaching. All local, state, and federal regulations will be followed regarding petroleum storage on site.

#### Cultivation Related Waste Protocols

Applicant's cultivation related green waste will be composted on site. All other waste will be taken offsite to an appropriate transfer facility to be recycled or landfilled.

Inputs for soil amendments are bought in bulk. Generally they will be purchased a short time prior to use and will not need to be stored. Any left over amendments will be stored in containment in buildings or sheds. Pots for nursery are washed and reused and stored inside the sheds or processing buildings when not in use. Applicant will re-amend soils using cover crops, thereby eliminating soil waste. Soils will remain in place during off-season.

#### Green Waste

There will be a composting area maintained by cultivation staff. The composting areas will have a concrete pad and will be enclosed with three walls and a roof to keep storm water out.

#### Refuse Disposal

Operation will have on-site trash cans with lids located near all cultivation sites and bear proof dumpsters located near the main house. Non-compostable waste will be hauled off site at least twice per month by project staff and disposed of at either the Redway or Fortuna Transfer Stations.

### **WASTEWATER**

We will ensure the bathroom facilities meet all accessibility requirements. We will use additional ADA compliant portable toilets to service cultivation areas during harvest. Portable toilets will be regularly serviced, and service records will be kept on site for inspection.

### **EMPLOYEES**

Per the monthly schedule of activities, up to 3 employees may be onsite during peak operations.

The Project would operate seasonally, with peak activity during the late summer and fall months. From May 1 to November, cannabis would be grown, cultivated, and harvested. From November to December clean up of property and winterization.

The Project would typically operate seven days per week, between the hours of 7:00 a.m. and 7:00 p.m. For daily operations, between May 1 and November 30, the Project would employ approximately 1 to 3 employees. The Project has been designed to require fewer employees than

other similarly-sized projects through use of automated systems. Generally, employees' daily duties would be to ensure automated systems function properly. Additional employees would sometimes be required periodically to complete cultivation activities, including to plant the first round of light deprivation and second round of light deprivation, to trellis the outdoor cultivation sites, and during the first harvest, the second harvest, and processing activities. During these times the Project would employ additional temporary staff for a total employee count of between 2 -3 daily employees.

During peak harvest periods, or when the daily employee count is 3, the Project would utilize ram 2500 truck to transport workers from Fortuna to the Project Site. In general, both full time and temporary employees would be sourced from the already existing pool of cannabis workers in southern Humboldt County.

Drinking water for employees will be provided with bottled water.

Because employees will carpool, one parking space will be available to support cannabis operations. Additionally, a separate loading zone will be designated to accommodate one freezer truck during harvest.

### **SECURITY PLAN**

Applicant will implement various security measures to ensure safety, protection of crop, and non-diversion of cannabis. Currently, a fence exists along the perimeter of the property. All cultivation sites will be fenced in. Gates lock the main entrances along the roads. Cameras will be used to monitor gates, cultivation sites, and drying facilities. A locking keypad entry system will also limit access to processing facilities, preventing unauthorized access.

Applicant will contract with licensed distributors for distribution of its products. Applicant operates an "on-demand" product shipment system whereby licensed distributor is on-site to select crop to distribute before harvest takes place.

Scheduled staggered harvest, based off a 3-7 day window and truck availability from licensed transportation. Staggered harvest is needed to maintain continual shipping to reduce the amount of wet cannabis kept on site. Applicant will implement a track and trace system in compliance with all state and local laws and regulations.

Security lighting will be placed around all buildings. Lighting, in conformance with the International Dark Sky standards, will have a warm color rating (approx. 2500K) and be shielded to avoid uplighting and glare; lighting will only illuminate downward to provide safe access and security.

### **ENERGY SOURCE**

Power is provided by four, 200 watt solar panels augmented by a 5.6 kw gas generator. The generator is a Honda EU 7000. Noise rating 60 dB(A) at rated load, 52 dB(A) at ¼ load. Generator is housed in sound insulated enclosure, in plastic spill containment pool.