

**Mike's Farm LLC**  
**February 13<sup>th</sup>, 2023**  
**Revised Operations/Cultivation Plan**

Location: 000 Lower Samuel's Ranch Loop Road (address pending) Miranda, CA 95553  
APN: 221-021-003

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## **Operations Plan**

### **Project Description**

This project consists of 19,026ft<sup>2</sup> of outdoor light deprivation cultivation contained within fifteen (15) greenhouses. Total flowering canopy is 19,026ft<sup>2</sup>. The applicant will also utilize a 34' x 55'=1870ft<sup>2</sup> propagation greenhouse in association with this project. Water for this project is sourced from an off-stream rainwater catchment pond with a capacity of 273,715-gallons and is stored in a series of HDPE water storage tanks. Water storage for this project includes 18,000-gallons of HDPE water storage that will be filled from the rainwater catchment pond. Domestic water is sourced from a permitted groundwater well. There is an additional pond on the parcel that will be used for aesthetic purposes and fire protection.

Power for this project is currently supplied by a 40kw generator and a 25kw generator, but the applicant is proposing to add a solar system to reduce the carbon footprint of this project. Solar system will consist of multiple solar panels and batteries to produce 13,000watts of renewable energy. Pesticides and nutrients will be stored in a locked 8' x 20', 160ft<sup>2</sup> Connex container. Drying, curing will take place in the existing 1,300ft<sup>2</sup> drying room. Applicant is proposing to build an additional 30' x 31' 930 ft<sup>2</sup> metal building for additional drying space. Secure harvest storage will take place in an 8' x 20' 160ft<sup>2</sup> Connex container. The applicant will process off site and utilize a Portable Toilet with a service contract until an ADA compliant restroom can be built in association with the project.

Irrigation water for this project is sourced from an off-stream rainwater catchment pond with 18,000-gallons in HDPE tank storage. Rainwater is collected from the rainwater catchment pond and fills the HDPE water storage tanks. The pond is 130' x 70'= 9,100ft<sup>2</sup> and 8' deep for a total capacity of 273,715-gallons.

### **Land Features**

Cultivation greenhouses are built on pre-existing flats on the property. No additional grading will be necessary to facilitate this operation.

### **Access to Property**

The site is located at 40.2362, -123.9553 off of Lower Samuel's Ranch Loop Road in the salmon creek area. Please see google maps for exact driving directions.

### **Proximity**

The nearest neighboring properties are 450 feet to the South, 434 feet to the east, 576 feet to the North, and 108 feet to the West from the cultivation sites. There are no schools, school bus stops, public parks, public lands, hiking trails or tribal resources within 600 ft of the property.

### **Equipment/ Power**

Power for this project is currently supplied by a 40kw generator and a 25kw generator, but the applicant is proposing to add a solar system to reduce the carbon footprint of this project. The solar system will consist of multiple solar panels and batteries to produce 13,000watts of renewable energy. This will power the entire project, and generator use will be on an as needed emergency basis. Energy use for this project is limited to small, supplemental lights in the propagation greenhouse, fans in the greenhouses, and dehumidifiers and fans in the drying room. The generators are rated at 65db at 23' from the unit and are enclosed in a shed to further dampen noise output. Decibel levels at 100' from the unit were recorded at 39.7db.

## **Petroleum Based/ Fuel Products**

Project site will not store any Hazardous Waste in threshold beyond domestic use. If any additional storage of hazardous waste becomes necessary, an appropriate application will be filed with DHHS.

Any above ground storage tanks and containers shall be provided with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. Onsite fuel storage tank is on a flat stable surface, within secondary containment and under a roof. All five-gallon gasoline cans are stored with secondary containment inside of shed or similar enclosure on flat, stable areas. The applicants will implement spill prevention, control, and countermeasures (SPCC). There are no underground storage tanks on the property. All petroleum products on property are stored with secondary containment inside of a shed or similar enclosure on flat, stable areas.

## **Solid Waste/ Recycling**

Solid waste and recycling shall be stored in a location and manner that prevents its discharge to receiving waters and prevents any leachate or contact water from entering or percolating to receiving waters. All solid waste and recycling are stored in cans with lids on a stable, flat area. The cans are secured to exclude wildlife. Solid waste and recycling shall be disposed of at an authorized municipal waste transfer station. It will be taken to by personal vehicle, i.e., truck, 1-3 times per month depending on garbage accumulation.

## **Solid Waste and Recyclables Disposal**

Redway Transfer Station

California Conservation Camp Rd.

Redway, CA 95560707-923-3944

<https://www.recology.com/recology-eel-river/redway-transfer-station/>

## Cultivation Plan

This project will consist of fifteen (15) outdoor light deprivation greenhouses with one 1,870ft<sup>2</sup> ancillary propagation greenhouse. All cannabis will be grown in greenhouses. Cannabis will be grown utilizing light deprivation cultivation techniques. All cannabis is harvested and dried on site.

### Cultivation Areas

Cultivation Area	Cultivation Type	Cultivation Area	Structure Sizing
Greenhouse 1	Outdoor light dep	1,400 ft <sup>2</sup>	28' x 50'
Greenhouse 2	Outdoor Light dep	2,700 ft <sup>2</sup>	30' x 90'
Greenhouse 3	Outdoor light dep	990ft <sup>2</sup>	11' x 90'
Greenhouse 4	Outdoor light dep	990ft <sup>2</sup>	11' x 90'
Greenhouse 5	Outdoor light dep	1,530ft <sup>2</sup>	15' x 102'
Greenhouse 6	Outdoor light dep	1,122ft <sup>2</sup>	11' x 102'
Greenhouse 7	Outdoor light dep	1,530ft <sup>2</sup>	15' x 102'
Greenhouse 8	Outdoor light dep	1,596ft <sup>2</sup>	21' x 76'
Greenhouse 9	Outdoor light dep	832ft <sup>2</sup>	16' x 52'
Greenhouse 10	Outdoor light dep	1,188ft <sup>2</sup>	11' x 108'
Greenhouse 11	Outdoor light dep	1,188ft <sup>2</sup>	11' x 108'
Greenhouse 12	Outdoor light dep	990ft <sup>2</sup>	11' x 90'
Greenhouse 13	Outdoor light dep	990ft <sup>2</sup>	11' x 90'
Greenhouse 14	Outdoor light dep	990ft <sup>2</sup>	11' x 90'
Greenhouse 15	Outdoor light dep	990ft <sup>2</sup>	11' x 90'
Propagation area	Ancillary Propagation	1,870ft <sup>2</sup>	34' x 55'

Greenhouse 1- This is a 28' x 50' (1,400ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 2- This is a 30' x 90' (2,700ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 3- This is a 11' x 90' (990ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 4- This is a 11' x 90' (990ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 5- This is a 15' x 102' (1,530ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 6- This is a 11' x 102' (1,122ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 7- This is a 15' x 102' (1,530ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 8- This is a 21' x 76' (1,596ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 9- This is a 16' x 52' (832ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 10- This is a 11' x 108' (1,188ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 11- This is a 11' x 108' (1,188ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 12- This is a 11' x 90' (990ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 13- This is a 11' x 90' (990ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 14- This is a 11' x 90' (990ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Greenhouse 15- This is a 11' x 90' (990ft<sup>2</sup>) greenhouse that will be utilized for outdoor light deprivation cultivation.  
Propagation Greenhouse- This is a 34' x 55' (1,870ft<sup>2</sup>) greenhouse that will be utilized for ancillary propagation. This greenhouse will contain supplemental lighting to aid the plants in early season vegetation.

## Ancillary Support Structures

Pesticide Nutrient Storage	8' x 20'	160ft <sup>2</sup>
Drying, Curing	26' x 50'	1,300ft <sup>2</sup>
Secure Harvest Storage	8' x 20'	160ft <sup>2</sup>
Proposed drying room	30' x 31'	930ft <sup>2</sup>
Generator/fuel shed	20' x 30'	600ft <sup>2</sup>

Pesticides and nutrients will be stored in a locked 8' x 20', 160ft<sup>2</sup> connex container. Drying, and curing will take place in the existing 26' x 50', 1,300ft<sup>2</sup> drying room. Applicant is proposing to add another 30' x 31' 930ft<sup>2</sup> drying room. Secured harvest storage will be located in a locked 8' x 20' 160ft<sup>2</sup> connex container. The applicant will process off site and utilize a Portable Toilet with a service contract until an ADA compliant restroom can be built in association with the project.

## Immature Plants

Each spring the Applicant takes cuttings or clones from mother plants and rears them in propagation greenhouse till plants are ready to be moved to flowering greenhouses. Immature plants will be cultivated in one (1) greenhouse. Artificial lights will facilitate plant growth and hinder plants from moving into flowering stages ahead of cultivation schedule. All lighting will be shielded with black out tarps and checked daily for light leaks.

## Cultivation Cycles

The Applicant cultivates in light deprivation greenhouses in two cycles from April to October. The first cycle is from April to July, the second cycle is from roughly July to October. The Applicant uses supplemental light inside the propagation greenhouse to start plants. The Applicant uses a blackout tarp over the outdoor light deprivation flowering greenhouses, at regular intervals to impede natural sunlight. All greenhouses will be equipped with fans.

There are companion plants, native grasses and indigenous plants that grow in the garden and around the area to also help control any type of run off. There are no signs of wastewater runoff or erosion in these gardens. Hay is also spread around the area and on the topsoil. The water line as well as manifolds and fittings will be checked on a regular basis for leak or cracks.

## Monthly Cultivation Site Activities

Month	Activities
January	Finish processing of fall harvest, trimming and storage. Plan new year. Mow cover crop. Check greenhouses for issues/fix. Check water lines, tanks and all equipment for repairs or damages. Make plan for repairs.
February	Work on trenches/and holes for plants layer more compost in beds. Treat compost if necessary. Finishing processing last year's crop if still necessary.
March	Get clones from licensed nursery. Transplant and move into greenhouse with seedlings. Amend beds, fix fences, service equipment, make plan for independent contractors i.e.; painting, fence building, greenhouse fixing, etc.
April	Amend and start turning beds, prep dirt and supplies for greenhouse plants Add nematodes compost for pest prevention. Mid- April move first round of plants to greenhouses. Weed whacking, mowing, and brush cleanup.
May	Spray with preventive sulfur. Treat with biodynamic preparations for pest control and

	mold control. Greenhouse plants switched into flower using a blackout cover mid-late May. Turn beds, fix/ replace and clean drip emitters, check timers. Double check all water systems for leaks and clogs. Put out sound sensors for rodents.
June	Regular feeding schedule of compost teas adhered to. Pests are dealt with as they arise with oils, nematodes and predator mites from compost. Procure next round of plants from licensed nursery.
July	Harvest greenhouse mid-month, replant with new clones from a licensed nursery. Treat plants with preventive measures. Harvested flowers to hang in drying area then to be cured and hand trimmed per processing plan.
August	Finish processing July's harvest. Monitor water supply, check lines and all areas for insect/ animal disturbance.
September	Prepare for Harvest. Clean and prepare lines and drying spaces in drying room. Clean all supplies and purchase new items needed. Harvest, cure and trim as outlined above in processing plan.
October	Harvest greenhouses. Process as outlined above. Pull all root-balls, pack hay and cover crop seeds on beds. Pull drip system. Check all equipment and tools for leaks and damages before storing for winter. Store all supplies possible, cleanup site.
November	Finish harvesting plants if necessary. Winterize water system, greenhouses, and sheds. Clean up drying rooms remove all lines and debris. Put away all supplies i.e. fans, dehumidifiers. Continue processing cannabis as outlined above.
December	Start amendments for winter. Prep all water and water storage system for shut down. Clean all garden implements. Put all left over supplies away. Driveway fixing, other farm/garden maintenance.

## Processing Plan

### Harvest

Cannabis will be harvested using gloves and clean tools. All cannabis will be hung to dry in the existing drying room and proposed drying room, once built. Dehumidifiers and fans will aid drying in the building. Cannabis will be dried for 10-14 days on lines in these areas depending on weather. The room will have proper ventilation, fans, and dehumidifiers to maintain proper environment. Moldy cannabis will be removed and destroyed using county and state approved procedures for holding and destroying unwanted product.

### Curing

Curing will take place after cannabis is dried on the lines. Cannabis will be visually checked for mold then placed into plastic totes for curing. During this time the bins will be checked for mold and moisture consistency. Curing cannabis will be stored in drying room/garage. Moldy or defective cannabis will be removed and destroyed using county and state approved procedures for holding and destroying unwanted product.

### Processing

Cannabis Trimming will occur as cannabis becomes ready from curing process. Trimming will physically take place off site until an ADA bathroom can be constructed in association with the project. Once the ADA bathroom is complete, the Applicant plans to process the cannabis himself with the aid of trim machines. If needed, he will hire 1-3

### **Processing Cont.**

employees or contractors to help. Processed cannabis will be bagged into turkey bags or sealed bags to be held until a distributor is ready. The trim or remaining leaves from processed cannabis, will be bagged into contractor bags to be stored until needed, sold, or destroyed in the legal manner.

### **Processing- Employees and Contractors**

Employees will not be anticipated until ADA bathroom is completed. Employees will be seasonal and subcontracted as possible. Employees and contractors will have access to parking, spacious work zone, clean supplies for task, hand washing areas with soap, bathroom with sink and flushing toilet and break area. Fresh spring water is available, but workers are encouraged to bring their own drinking water. All areas are kept clean and in good condition All employees and/ or contractors will have access to personal safety equipment to meet the needs of the job for example, face mask, gloves, Tyvek suits, safety glasses, rubber boot covers etc. There are no worker sleeping quarters on site. Workers are encouraged to carpool to work daily, and applicant intends to mitigate any additional traffic on Upper Samuels Ranch Loop Rd., by reducing his own travel during times he has workers.

### **Worker Safety Practices**

Safety protocols will be implemented to protect the health and safety of employees. All employees shall be provided with adequate safety training relevant to their specific job functions, which may include:

- Employee accident reporting

- Security breach

- Fire prevention

- Emergency Numbers

### **Materials handling policies**

Use of protective clothing such as long sleeve shirts, brimmed hats, and sunglasses. Each garden site and or processing area have the following emergency equipment:

Personal protective equipment including gloves and respiratory protection are provided where necessary

- Fire extinguisher

- First Aid Kit

- Snake Bite/Bee Sting Kit

- Eye Washing Kit

Comply with all applicable federal, state, and local laws and regulations governing California Agricultural Employers, which may include federal and state wage and hour laws, CAL/OSHA, OSHA, California Agricultural Labor Relations Act, and the Humboldt County Code (including the Building Code).



## Parking Plan

There is one parking space in front of the cultivation area. There are also three parking spaces adjacent to the lower cultivation area. Once ADA bathroom is completed, the upper cultivation area parking space and one space next to lower cultivation area will conform to ADA regulations.

## Security Plan

The private driveway off Lower Samuels Ranch Loop Road has a gate that we keep locked at sensitive times for security purposes. The secured harvest storage area for cannabis is always locked. No items of value shall be left in visible areas. The applicant plans to add a camera system to each of the gardens with a central base at the residence or connected to smartphone. Applicant plans to have this system fully functional by 2025.

## Domestic Wastewater

Domestic wastewater for this project is currently handled by a portable toilet with a service contract. Applicant is proposing to eventually build an ADA compliant restroom in association with this project.

## Water Irrigation and Storage Plan

### Water Storage and Usage

Irrigation water for this project is sourced from an off-stream rainwater catchment pond with a total capacity of 273,715-gallons and 18,000-gallons in HDPE tank storage. Rainwater is collected from the rainwater catchment pond and fills the HDPE water storage tanks. The rainwater catchment pond is 9,100ft<sup>2</sup> and 8 feet deep and has sufficient size to collect more than enough rainwater to support the project. This rainwater catchment system will collect more water than is needed for this project. See rainwater analysis below. Water use for this project is estimated to be 155,500-gallons annually (8.17-gal/ft<sup>2</sup>). There is an additional rainwater catchment pond on the parcel that is used for aesthetic purposes and fire protection. This pond is 4,200ft<sup>2</sup> and 6 feet deep and contains 94,497-gallons of water.

### Water Infrastructure

Type/Size of infrastructure	Water Source	Use
9,100ft <sup>2</sup> rainwater catchment pond	Rain	Irrigation
1 QTY 5,000-gallon HDPE tank	Rain	Irrigation
3 QTY 3,000-gal. HDPE tank	Rain	Irrigation
1 QTY 2,000-gal. HDPE tank	Rain	Irrigation
2 QTY 1,000-gal HDPE tank	Rain	Irrigation
Direct Diversion-gravity fed	Groundwater Well	Domestic
Lower pond	Rain	Aesthetic/Fire Protection

## Annual Water Usage

Month	Cannabis water use in Gallons	Domestic Water Use in Gallons
January	0	3,000
February	0	3,000
March	0	3,000
April	11,600	3,000
May	22,500	3,000
June	26,500	3,000
July	26,600	3,000
August	26,600	3,000
September	21,700	3,000
October	20,000	3,000
November	0	3,000
December	0	6,000
<b>Totals</b>	<b>155,500-gallons</b>	<b>39,000-gallons</b>

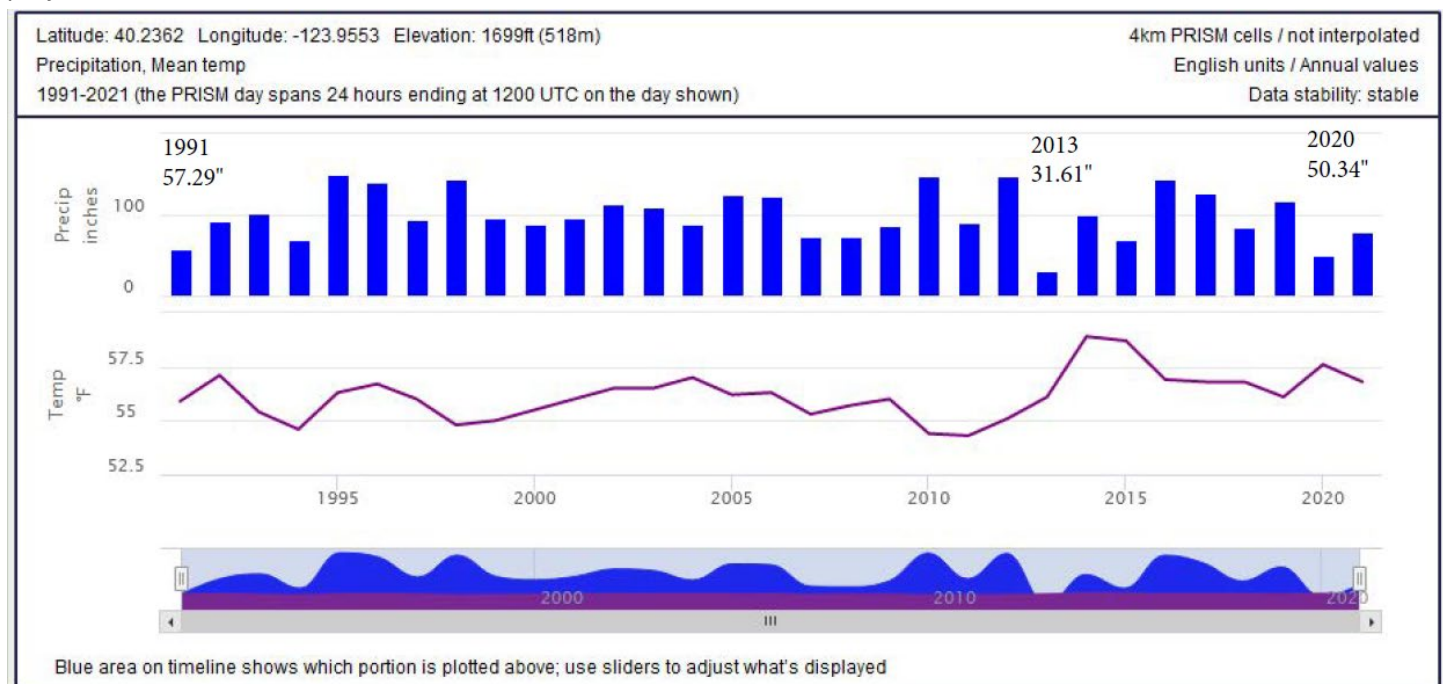
## Rainwater Catchment Analysis

Irrigation water for this project is sourced from an off-stream rainwater catchment pond with 18,000-gallons in HDPE tank storage. Rainwater is collected from the rainwater catchment pond and fills the HDPE water storage tanks. A rainwater catchment analysis was completed using [prism.oregonstate.edu/explorer](http://prism.oregonstate.edu/explorer) to analyze the capability of the rainwater catchment to capture sufficient water for the project. The rainwater catchment surface is 9,100ft<sup>2</sup>. The average rainfall was taken from the lowest rainfall years from the past 30 years (1991-2021), which were 1991 at 57.29", 2013 at 31.61" and 2020 at 50.34". Average rainfall amount is 46.41".

The rainwater catchment system will collect rainwater in the off-stream rainwater catchment pond.

Rainwater catchment surface 9,100ft<sup>2</sup> x 46.41 x 0.6234 = 263,281-gallons annually can be collected from this system.

Water use for this project is 155,500-gallons. This water system will provide more than enough water to serve the project.



Rainwater Catchment Analysis Graph from [Prism.oregonstate.edu/explorer](http://Prism.oregonstate.edu/explorer)- Annual Values over 30 years

## Noise Control Plan

Noise from this cannabis cultivation operation would be limited to the noise from fans in the greenhouses, and fans and dehumidifiers in the drying room. Power for this project is currently a 40kw generator, with a smaller 25kw generator as emergency back-up. Applicant proposes to install a solar system to supplement power supply and reduce carbon footprint of the operation. The 40kw generator is rated at 65 decibels at 23' from the system and is housed in a shed to reduce noise output. Generator noise was measured at 39.7 decibels at 100' from the unit.

## Invasive Species Control Plan

Invasive plant species must be managed on cultivation sites in Humboldt County, under the current regulations governing cannabis cultivation activities.

The sixteen most harmful weeds in Humboldt County include: Scotch broom (*Cytisus scoparius*), Pampas grass (*Cortaderia jubata*), gorse (*Ulex Europaea*), Himalaya berry (*Rubus discolor*), English ivy (*Hedera helix*), Cape ivy (*Delairia odorata*), European beachgrass (*Ammophila arenaria*), Ice plant (*Carpobrotus edulis*), yellow bush lupine (*Lupinus arboreus*), yellow star thistle (*Centaurea solstitialis*), spotted & diffuse knapweed (*Centaurea maculosa* & *Centaurea diffusa*), bull & Canada thistle (*Cirsium Vulgare* & *Cirsium arvense*), common reed (*Phragmites australis*), Spanish heath (*Erica lusitanica*), and Chilean cordgrass (*Spartina densiflora*). Most potential invasive species are likely limited to species such as Pampas grass, Scotch Broom, Himalayan Blackberry, Italian Thistle, Canada Thistle and English Ivy.

Invasive plant species easily colonize new and disturbed areas with increased traffic. Invasive species should be dealt with immediately by manual/mechanical labor such as removing the plant, root ball and remaining vegetation by hand shovel, cutting, and sawing. Prevention can be encouraged with mulching. Biological controls are not recommended as this is not usually an effective method and can enter streams and waterways.

The applicant employs following methods to help prevent the introduction and spread of invasive species.

- Cleans outdoor recreation gear.
- Not releasing any unwanted pets or fish into the wild
- Identifying the most troublesome invasive species, avoid spreading them, and trying to control them.
- Using only native plants that are appropriate for the region.
- Cleans all machines before and after use.
- Avoid disturbing natural areas whenever possible.
- Remove any invasive plant species using the hand pulling method to mitigate regrowth and the spread of seed.

If any of these invasive species are encountered, the applicant will use the hand pulling method to remove the invasive species, while mitigating regrowth and preventing the spread of seed. All Hand pulling of invasive species will be done wearing gloves and protective clothing. The applicant will mitigate the spread of invasive species by removing invasive species throughout the cultivation area and around the parcel using hand pulling method and dispose of them in a manner that would prevent spread.

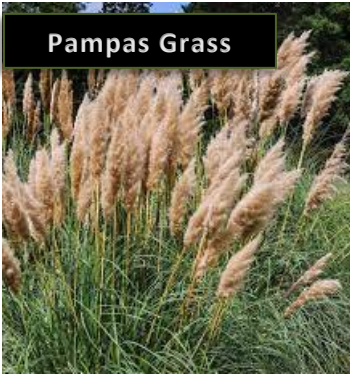
Several site visits have been conducted by our in-house biologist. He has reviewed these materials with the farm operators. All invasive species located have been removed thus far. The site will be monitor regularly for invasive species and they will be removed promptly once located and identified.

The following Invasive Species occur in Humboldt County. This list is being provided for easy referral to identify potential species. ***This is not a representation of the actual site.***

**French and Scotch Broom** (*Genista & Cytisus spp.*) With many roadside and grassland populations scattered throughout Humboldt County, brooms threaten to rapidly convert productive grasslands to unproductive shrub stands. Brooms are easily identified as yellow-flowered shrubs with small or no leaves.



**Pampas / Jubata Grass** (*Cortaderia spp.*) Present throughout Humboldt County, Pampas grass alters native shrub, grass and post-logging forest lands by excluding native plants. It is easily identified by its tall, feather-like seed stalks. Difficult to pull once large, plants are better removed when small.



**Common Gorse** (*Ulex europaea*) An invader of native coastal prairies, this shrub is most easily identified by its long, sharp spines, fuzzy foliage, and yellow flowers. Like brooms, this plant threatens to change diverse, native grasslands to dense, single species stands of shrubs. The plant's flowers are a deep yellow color.



**Himalaya Berry** (*Rubus armeniacus*), the Himalayan blackberry or Armenian blackberry, is a species of Rubus in the blackberry group Rubus subgenus Rubus series Discolores Focke. It is native to Armenia and Northern Iran, and widely naturalised elsewhere



**English and Cape Ivy** (*Hedera* spp. & *Delairea odorata*) These invasive vines climb over and cover native plants and trees growing in shaded places. Ivies will smother and weigh down trees and will carpet over a previously rich forest floor.



**European Beachgrass** (*Ammophila arenaria*) is a clumping perennial grass (family Poaceae) found in coastal dune systems from Santa Barbara County north. European beachgrass grows more densely than native American dunegrass trapping passing sand and creating steep dunes. This stop new sand from reaching interior dunes, changing the structure and ecology of dune ecosystems. Native plants often cannot compete with dense stands of European beachgrass.



**Ice plant** (*Carpobrotus edulis*) is a ground-hugging succulent perennial that roots at the nodes, has a creeping habit, and often forms deep mats covering large areas. Shallow, fibrous roots are produced at

every node that is in contact with the soil.



**Yellow Bush Lupine** (*Lupinus arboreus*) An invader of coastal dunes, this plant overwhelms diverse native dune flowers and enriches the soil, paving the way for invasive annual grasses. It is easily identified as the shrub in the dunes with the many bright yellow spikes of flowers.



**Italian, Yellow Star, Canada, and Bull** (*Centaurea* & *Cirsium* spp.) This suite of invasive thistles infests native grasslands, roadsides and fields. These species displace native plants and are often noxious to native wildlife and livestock.





**Spotted Knapweed** (*Centaurea maculosa*) is a biennial or short-lived perennial with a deep taproot. The taproot forms a new shoot each year. Early in the season, the plant appears as a rosette, a leafy prostrate plant. Its rosette leaves develop on short stalks at the base of the plant. They are grayish green and deeply divided into oblong lobes.



**Spanish Heath** (*Erica lusitanica*) While this low woody shrub is native to Europe, it now grows here in open, coastal areas with sandy soils. The shrub's flowers appear as many pinkwhite bells hanging on branches with soft, needle-like leaves.



**Common Reed** (*Phragmites australis*) More invasive strains originated in Europe. Invasive European strains probably introduced during the 1800s Crowds out native species to prevent growth.



**Chilean Cordgrass** (*Spartina densiflora*) a dense-flowered cordgrass is a rhizomatous perennial grass (family Poaceae) found in salt marshes in Humboldt Bay and San Francisco Bay. Dense-flowered cordgrass may have been introduced to Humboldt Bay from Chile by lumber ships in the 19th century.



**Japanese and Himalayan Knotweed** (*Polygonum* spp.) Invasive knotweeds can grow from very small amounts of leaf or stem, increasing the chance that plants growing on stream banks may aggressively expand and outcompete native plants.





## Soils Management Plan

### Cultivation Soils

All soil from cultivation site will be reused and never dumped. Reused meaning the applicant either tills the soils in place in the garden areas or creates a pile with straw waddles at the bottom and covers with black plastic. These areas will meet all BMP's required. Applicant amends the garden soils every year with basic amendments. Greenhouses plants are planted in beds directly in the ground. Protection from overuse of inputs and reuse of these soils shall be a key component of operations. Operations will protect the resources through the following means:

The Site management plan will be implemented, Cultivations will occur in beds, air pots, or in the ground. Mixing, tilling, and amending of soils will occur within the receptacles. Composting is in a secure dedicated area. Vegetative materials will be chipped back into the compost pile. Cover crops will be utilized when not in cultivation for a month or more to reduce soil loss. Garbage from the cultivation is limited to bags from amendments and fertilizer containers. All items will be cleaned out properly into the garden area, recycled if possible and if not removed to the transfer station.

Cultivation-related wastes including, but not limited to, empty soil/soil amendment/ fertilizer/pesticide bags and containers, empty plant pots or containers, dead or harvested plant waste, and spent growth medium shall, for as long as they remain on the site, be stored at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwaters.

## Stormwater management Plan

### Erosion Control

This cultivation site is flat. Daily inspections to verify that spoils are not stored or placed in or where they can enter any surface water. Spoils will be adequately contained or stabilized to prevent sediment delivery to surface waters. Spoils generated through development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas shall not be side cast in any location where they can enter or be transported to surface waters. We will use appropriate erosion control measures to minimize erosion of disturbed areas, potting soil, or bulk soil amendments to prevent discharges of waste. Fill soil shall not be placed where it may discharge into surface water. Weed-free straw mulch is

**Erosion Control cont.**

used on exposed soils and, if warranted by site conditions, shall be secured to the ground. We will not plant or seed noxious weeds. Prohibited plant species, only locally native, non-invasive, and non-persistent grass species will be used for temporary erosion control. We will incorporate erosion control and sediment detention devices and materials into the design, work schedule, and implementation of all cannabis cultivation activities. Measures to limit or prevent erosion, include, but are not limited to, removal of fill from watercourses, stream restoration, riparian vegetation planting and maintenance, soil stabilization, erosion control, upgrading stream crossings if needed, road out sloping and rolling dip installation where safe and suitable as needed, installing ditch relief culverts and over side drains if prescribed, stabilizing unstable areas, reshaping cut banks, and rocking native- surfaced roads. We will do our best to implement all applicable Erosion Control and Soil Disposal and Spoils Management Requirements in addition to the Winterization Requirements below by the onset of the winter period (November 15).

**Measures to Protect Watershed**

All spraying of plants for any type of pest control, mildew/mold control or foliage feeding is done when winds are at 0 and sprayed directly onto plants without over spray. No generators or household projects of any sort happen within 200 ft feet of the watershed. No pumping or dumping ever occurs in watershed. All fertilization of plants is monitored closely. Fertilizer comes from separate tanks. Implementing water conservation measures, irrigating at conservative rates, applying fertilizers at conservative rates, applying chemicals according to the label specifications, and maintaining stable soil and growth media should serve to minimize the amount of runoff and the concentration of chemicals in that water. If irrigation runoff occurs, measures shall be in place to treat/control/contain the runoff. We try to be water conservative and use no more than what is required. Irrigation runoff will be contained so that any pollutants are trapped in the ditch relief. Irrigation runoff will be managed so that any entrained constituents, such as fertilizers, fine sediment and suspended organic particles, and other oxygen consuming materials are not discharged to nearby watercourses. We will do our best to ensure that irrigation tailwater is not discharged towards or impounded over unstable features or landslides.

**Light Pollution Control Plan**

The only light applicant uses is supplemental light for immature plants. Immature plants located in the propagation greenhouse. Supplemental light consists of 30-40 22w light bulbs. Entire propagation greenhouse is blacked out with blackout plastic to prevent light leaks. Greenhouse is checked daily while lights are in use for potential light leaks. Applicant guarantees that there are no light leaks coming from the greenhouses.