Water Resource Protection Plan
For
APN 987-654-3210

Submitted to:

California Regional Water Quality Control Board -
North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

Prepared by:

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Purpose

This Water Resource Protection Plan (WRPP) has been prepared on behalf of the property's Discharger, Robert Marley, by agreement and in response to the California Water Code Section 13260(a), which requires that any person discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the state, other than into a community sewer system, shall file with the appropriate regional water board a Report of Waste Discharge (ROWD) containing such information and data as may be required by the Regional Water Board. The Regional Water Board may waive the requirements of Water Code section 13260 for specific types of discharges if the waiver is consistent with the Basin Plan and in the public interest. Any waiver is conditional and may be terminated at any time. A waiver should include monitoring requirements to verify the adequacy and effectiveness of the waiver's conditions. Order R1-2015-0023 conditionally waives the requirement to file a ROWD for discharges and associated activities described in finding 4.

Scope of Report

Order No. R1-2015-0023 states that "Tier 2 Dischargers and Tier 3 Dischargers who intend to cultivate cannabis before, during, or following site cleanup activities shall develop and implement a water resource protection plan that contains the elements listed and addressed below. Dischargers must keep this plan on site, and produce it upon request by Regional Water Board staff. Management practices shall be properly designed and installed, and assessed periodically for effectiveness. If a management measure is found to be ineffective, the plan must be adapted and implemented to incorporate new or additional management practices to meet standard conditions. Dischargers shall certify annually to the Regional Water Board individually or through an approved third party program that the plan is being implemented and is effectively protecting water quality, and report on progress in implementing site improvements intended to bring the site into compliance with all conditions of this Order."

Methods

The methods used to develop this WRPP include both field and office components. The office component consisted of reviewing soil maps (Web Soil Survey), and geologic maps (CGS, Geologic Data Map No. 2, 1977). The field component included identifying and accurately mapping all watercourses, wet areas, and wetlands that could be impacted by onsite activities within/on cultivation areas, associated facilities, and all appurtenant roads accessing such areas. An accurate location of the Waters of the State is necessary to make an assessment of whether potential and existing erosion sites/pollution sites have the potential to discharge waste to an area that could affect waters of the State (including groundwater). Next, all cultivation areas, associated facilities, and all appurtenant roads accessing such areas were assessed for discharges and related controllable water quality factors from the activities listed in Order R1-2015-0023, Finding 4a-j. The field assessment also included an evaluation and determination of compliance with the Standard Conditions per Provision 1.8 of Order No. R1-2015-0023. The water resource protection plans required under Tier 2 are meant to describe the specific measures a discharger implements to

achieve compliance with standard conditions. Therefore, all required components of the water resource protection plan per Provision 1.8 of Order No. R1-2015-0023 were physically inspected and evaluated. A comprehensive summary of each Standard Condition as it relates to the subject property is appended.

Identified Sites Requiring Remediation

Unique Map Point(s)	Map Point Description	Associated Standard Condition	Temporary BMP	Permanent BMP	Priority for Action	Time Schedule for Completion of Permanent BMP	Completion Date
A	Water tank proximity to watercourse	A (5)(f)	NA	Relocate water tank to south side of houses.	1	11/15/2016	
B	Spoils pile	11 (b) 11 (c)	NA	Remove plant waste and store separately.	2	11/15/2017	

Treatment Priority: The time frame for treatment of the site. (1) would indicate a very high priority with treatment being planned to occur immediately. (2) would indicate a high priority site with treatment to occur prior to the start of the winter period (Nov. 15). (3) would indicate a moderate priority with treatment being planned to occur within a year 1, or prior to the winter period (Nov. 15) of the 2nd season of operations. (4) would indicate a low priority with treatment being planned to occur in the shortest time possible, but no later than the expiration of this Order (five years).

Monitoring Plan

Tier 2 Dischargers shall include a monitoring element in the water resource protection plan that at a minimum provides for periodic inspection of the site, checklist to confirm placement and efficacy of management measures, and document progress on any plan elements subject to a time schedule. Tier 2 Dischargers shall submit an annual report (Appendix C) by March 31 of each year that documents implementation and effectiveness of management measures during the previous year. Tier 2 annual reporting is a function that may be provided through an approved third party program. Monitoring of the site includes visual inspection and photographic documentation of each feature of interest listed on the site map, with new photographic documentation recorded with any notable changes to the feature of interest. At a minimum, all site features must be monitored annually, to provide the basis for completion of the annual re-certification process. Additionally, sites shall be monitored at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to prevent, minimize, and mitigate discharges of waste to surface water: 1) just prior to October 15 to evaluate site preparedness for storm events and storm water runoff, 2) following the accumulation of 3" total precipitation or by December 15, whichever is sooner,

and 3) following any rainfall event with an intensity of 3" precipitation in 24 hours. Precipitation data can be obtained from the National Weather Service Forecast Office (e.g. by entering the zip code of the parcel location at http://www.srh.noaa.gov/forecast).

Inspection Personnel Contact Information:

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Monitoring Plan Reporting Requirements

Order No. R1-2015-0023, Appendix C must be submitted to the Regional Water Board or approved third party program upon initial enrollment in the Order (NOI) and annually thereafter by March 31. Forms submitted to the Regional Water Board shall be submitted electronically to northcoast@waterboards.ca.gov. If electronic submission is infeasible, hard copies can be submitted to: North Coast Regional Water Quality Control Board, 5550 Skylane Boulevard, Suite A, Santa Rosa, CA 95403.

Water Resource Protection Plan
Assessment of Standard Conditions
for
APN 987-654-3210

A. Standard Conditions, Applicable to All Dischargers

1. Site maintenance, erosion control and drainage features

   a. Roads shall be maintained as appropriate (with adequate surfacing and drainage features) to avoid developing surface ruts, gullies, or surface erosion that results in sediment delivery to surface waters.

      Road assessment revealed appropriate design and function. The existing roadway is surfaced with gravel from a local source, and shows no evidence of erosion or the transport of sediment. The road is crowned or outsloped and drains properly without the use of drainage structures. BMP 72 & 73.

   b. Roads, driveways, trails, and other defined corridors for foot or vehicle traffic of any kind shall have adequate ditch relief drains or rolling dips and/or other measures to prevent or minimize erosion along the flow paths and at their respective outlets

      Not applicable.

   c. Roads and other features shall be maintained so that surface runoff drains away from potentially unstable slopes or earthen fills. Where road runoff cannot be drained away from an unstable feature, an engineered structure or system shall be installed to ensure that surface flows will not cause slope failure.

      There are no unstable areas or earthen fills within the property. Physical reconnaissance of the property revealed no unstable areas per 14CCR 895.1.

   d. Roads, clearings, fill prisms, and terraced areas (cleared/developed areas with the potential for sediment erosion and transport) shall be maintained so that they are hydrologically disconnected[1], as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.

[1] Connected roads are road segments that deliver road surface runoff, via the ditch or road surface, to a stream crossing or to a connected drain that occurs within the high delivery potential portion of the active road network. A connected drain is defined as any cross-drain culvert, water bar, rolling dip, or ditch-out that appears to deliver runoff to a defined channel. A drain is considered connected if there is evidence of surface flow connection from the road to

The cleared/developed areas associated with cultivation are located greater than 100 feet from a watercourse, and shall be maintained so that they are hydrologically disconnected.

e. Ditch relief drains, rolling dip outlets, and road pad or terrace surfaces shall be maintained to promote infiltration/dispersal of outflows and have no apparent erosion or evidence of soil transport to receiving waters.

Not applicable

f. Stockpiled construction materials are stored in a location and manner so as to prevent their transport to receiving waters.

Not applicable

2. Stream Crossing Maintenance

a. Culverts and stream crossings shall be sized to pass the expected 100-year peak streamflow.
b. Culverts and stream crossings shall be designed and maintained to address debris associated with the expected 100-year peak streamflow.
c. Culverts and stream crossings shall allow passage of all life stages of fish on fish-bearing or restorable streams, and allow passage of aquatic organisms on perennial or intermittent streams.
d. Stream crossings shall be maintained so as to prevent or minimize erosion from exposed surfaces adjacent to, and in the channel and on the banks.
e. Culverts shall align with the stream grade and natural stream channel at the inlet and outlet where feasible[2].
f. Stream crossings shall be maintained so as to prevent stream diversion in the event that the culvert/crossing is plugged, and critical dips shall be employed with all crossing installations where feasible[3].

There are no stream crossings within the property.

3. Riparian and Wetland Protection and Management

a. For Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at a minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class Ill watercourse or wetlands. The Regional Water

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a defined channel or if the outlet has eroded a channel that extends from the road to a defined channel. (http://www.forestsandfish.com/documents/Road_Mgmt_Survey.pdf)

[2] At a minimum, the culvert shall be aligned at the inlet. If infeasible to align the culvert outlet with the stream grade or channel, outlet armoring or equivalently effective means may be applied.

[3] If infeasible to install a critical dip, an alternative solution may be chosen.

Board or its or its Executive Officer may apply additional or alternative[4] conditions on enrollment, including site-specific riparian buffers and other BMPs beyond those identified in water resource protection plans to ensure water quality protection.

b. Buffers shall be maintained at natural slope with native vegetation.

c. Buffers shall be of sufficient width to filter wastes from runoff discharging from production lands and associated facilities to all wetlands, streams, drainage ditches, or other conveyances.

d. Riparian and wetland areas shall be protected in a manner that maintains their essential functions, including temperature and microclimate control, filtration of sediment and other pollutants, nutrient cycling, woody debris recruitment, groundwater recharge, streambank stabilization, and flood peak attenuation and flood water storage.

The cultivation areas or associated facilities are located greater than 100 feet from a watercourse. Buffer zones around watercourses are maintained with native vegetation and with the natural slope of the land. As shown on the attached map, the watercourses are located below the rocked road. There is no visible evidence of erosion or road related runoff occurring below the mainline road.

4. Spoils Management

a. Spoils[5] shall not be stored or placed in or where they can enter any surface water.

b. Spoils shall be adequately contained or stabilized to prevent sediment delivery to surface waters.

c. Spoils generated through development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas shall not be sidecast in any location where they can enter or be transported to surface waters.

Soil spoils or spent soil is contained in the areas photographed and depicted on the attached maps. The site is not wet or unstable, or in an area where slope stability could be adversely affected. The spoil piles are not adjacent to wetlands and/or watercourses. The site is upslope from a Class I Watercourse located approximately 160 feet downstream. The soil spoils are covered with a black visqueen tarp in the winter time. One of the two piles contains both spent soil and plant waste. Plant waste is to be separated from the spent soils and stored separately.

5. Water Storage and Use:

a. Size and scope of an operation shall be such that the amount of water used shall not adversely impact water quality and/or beneficial uses, including and

[4] Alternative site-specific riparian buffers that are equally protective of water quality may be necessary to accommodate existing permanent structures or other types of structures that cannot be relocated.

[5] Spoils are waste earthen or organic materials generated through grading or excavation, or waste plant growth media or soil amendments. Spoils include but are not limited to soils, slash, bark, sawdust, potting soils, rock, and fertilizers.

in consideration with other water use by operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC-12[6] watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.

b. Water conservation measures shall be implemented. Examples include use of rainwater catchment systems or watering plants with a drip irrigation system rather than with a hose or sprinkler system.

c. For Tier 2 Dischargers, if possible, develop off-stream storage facilities to minimize surface water diversion during low flow periods.

d. Water is applied using no more than agronomic rates[7].

e. Diversion and/or storage of water from a stream should be conducted pursuant to a valid water right and in compliance with reporting requirements under Water Code section 5101.

f. Water storage features, such as ponds, tanks, and other vessels shall be selected, sited, designed, and maintained so as to insure integrity and to prevent release into waters of the state in the event of a containment failure.

A well (approximately 95 feet deep) provides water to a poly storage tank, which supplies the cultivation site and houses on the property. There are no surface water diversions occurring on the property. The landowner applies water at an appropriate agronomic rate. The water tank is in a location such that it will release into waters of the state in the event of a containment failure. Mitigation for this issue is addressed in the Water Resource Protection Plan.

6. Irrigation Runoff

Implementing water conservation measures, irrigating at agronomic rates, applying fertilizers at agronomic rates and 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. In the event that irrigation runoff occurs, measures shall be in place to treat/control/contain the runoff to minimize the pollutant loads in the discharge. Irrigation runoff shall 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. Management practices include, but are not limited to, modifications to irrigation systems that reuse tailwater by constructing off-stream retention basins, and active (pumping) and or passive (gravity) tailwater recapture/redistribution systems. Care shall be taken to ensure that irrigation tailwater is not discharged towards or impounded over unstable features or landslides.

The landowner irrigates at an agronomic rate, which does not produce runoff. An inspection of the cultivation site revealed no sign of overwatering. The

[6] See definition and link to maps at: http://water.usgs.gov/GIS/huc.html

[7] "Agronomic rates" is defined as the rates of fertilizer and irrigation water that a plant needs to enhance soil productivity and provide the crop or forage growth with needed nutrients for optimum health and growth, without having any excess water or nutrient percolate beyond the root zone.

landowner's cultivation site is located approximately 160 feet upslope from the Class I Watercourse as mapped in the field by the inspector using a GPS device. Given the gentle topography, and distance to downstream watercourses, there is no hydrologic connectivity via surface flow from the cultivation site to any downstream watercourses.

7. Fertilizers and Soil Amendments

   a. Fertilizers, potting soils, compost, and other soils and soil amendments shall be stored in locations and in a manner in which they cannot enter or be transported into surface waters and such that nutrients or other pollutants cannot be leached into groundwater.
   b. Fertilizers and soil amendments shall be applied and used per packaging instructions and/or at proper agronomic rates.
   c. Cultivation areas shall be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.

   The landowner stores fertilizers in an outbuilding as photographed and shown on the attached maps. The two main products used are Botanicare Pure Blend Pro Grow and Botanicare Pure Blend Pro Bloom. Based on the manufacture's website (http://botanicare.com), Pure Blend Pro Grow is an organic fertilizer with NPK */* 3 - 2 – 5. Pure Blend Pro Bloom is an organic fertilizer with NPK */* 2 - 3 – 5. These products are labeled properly and according to the landowner applied according to the label.

8. Pesticides/Herbicides

   At the present time, there are no pesticides or herbicides registered specifically for use directly on cannabis and the use of pesticides on cannabis plants has not been reviewed for safety, human health effects, or environmental impacts. Under California law, the only pesticide products not illegal to use on cannabis are those that contain an active ingredient that is exempt from residue tolerance requirements and either registered and labeled for a broad enough use to include use on cannabis or exempt from registration requirements as a minimum risk pesticide under FIFRA section 25(b) and California Code of Regulations, title 3, section 6147. For the purpose of compliance with conditions of this Order, any uses of pesticide products shall be consistent with product labeling and any products on the site shall be placed, used, and stored in a manner that ensures that they will not enter or be released into surface or ground waters.

   There are no pesticides or herbicides administered on the property. Instead of pesticides, the landowner may spray lemon juice to control aphids.

9. Petroleum products and other chemicals
   a. Petroleum products and other liquid chemicals, including but not limited to diesel, biodiesel, gasoline, and oils shall be stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage tanks and containers must be of suitable material and construction to be compatible with

the substance(s) stored and conditions of storage such as pressure and temperature.

b. 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.

c. Dischargers shall ensure that diked areas are sufficiently impervious to contain discharged chemicals.

d. Discharger(s) shall implement spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.

e. Underground storage tanks 110 gallons and larger shall be registered with the appropriate County Health Department and comply with State and local requirements for leak detection, spill overflow, corrosion protection, and insurance coverage.

Not applicable.

10. Cultivation-related wastes

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[8] 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.

Garbage and plant waste is intermixed with spent soil in the soil spoils site as pictured (Picture 4), and shown on the attached maps (Map Point 2). Per BMP 137 & 141 this garbage and plant waste shall be collected, contained, and disposed of at an appropriate facility, including for recycling where available.

11. Refuse and human waste

a. Disposal of domestic sewage shall meet applicable County health standards, local agency management plans and ordinances, and/or the Regional Water Board's Onsite Wastewater Treatment System (OWTS) policy, and shall not represent a threat to surface water or groundwater.

b. Refuse and garbage 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.

c. Garbage and refuse shall be disposed of at an appropriate waste disposal location.

Garbage and refuse is picked up weekly by a local garbage company.

Human waste disposal systems consist of bathrooms in the two houses which are connected to a septic tank and leach field system.

[8] Plant waste may also be composted, subject to the same restrictions cited above for cultivation-related waste storage.

12. Remediation/Cleanup/Restoration Remediation/cleanup/restoration activities may 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, road outsloping and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing berms, stabilizing unstable areas, reshaping cutbanks, and rocking native-surfaced roads. Restoration and cleanup conditions and provisions generally apply to Tier 3 sites, however owners/operators of Tier 1 or 2 sites may identify or propose water resource improvement or enhancement projects such as stream restoration or riparian planting with native vegetation and, for such projects, these conditions apply similarly. Appendix B accompanying this Order includes environmental protection and mitigation measures that apply to cleanup activities such as: temporal limitations on construction; limitations on earthmoving and construction equipment; guidelines for removal of plants and revegetation; conditions for erosion control, limitations on work in streams, riparian and wetland areas; and other measures.

Mitigation measures are listed in the Water Resource Protection Plan and also noted above in the document.

Pictures

Picture 1: This is a photograph of the cultivation area facing northwest. Cultivation area measures 60’x85’ totaling 5,100 sqft. Photo date 2-18-16.

Picture 2: This is a photograph of the drying facility facing west. The facility measures 24’x8’ totaling 192 sqft. Photo date 2-18-16.

Picture 3: This is a photograph of the fertilizer mixing station facing east. The mixing station consists of a 300 gal. tank and a 100 gal. tank. Photo date 2-18-16.

Picture 4: This is a photograph of soil spoils site facing north. Plant waste and refuse will be separated and disposed of. Photo date 2-18-16.

Picture 5: This photograph is of the hatch for the septic tank. Photo date 2-18-16.

Picture 6: This photograph is of the leach field facing southwest. Photo date 2-18-16.

Picture 7: This photograph is of the irrigation well. Photo date 2-18-16.

Picture 8: This photograph is of the 1500 gal. irrigation tank facing northwest. Photo date 2-18-16.

Picture 9: This photograph is of the chemical storage building facing west. Photo date 2-18-16.