Water Resource Protection Plan

WDID#: 1B16444CHUM

TRC ID#: 180101020408TRC56

Submitted to:

Jesse Carnes

APN 314-191-014

Prepared by:

Timberland Resource Consultants

165 South Fortuna Blvd

Fortuna, CA 95540

09-17-2016

Purpose

This Water Resource Protection Plan (WRPP) has been prepared on behalf of the property owner, Jesse Carnes, for the Humboldt County identified as parcel number 314-191-014 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 aerial photography review and interpretation, existing USGS quad map review, GIS mapping of field data, review of on-site photography points, streamflow calculations, and general planning. The field component included identifying and accurately mapping all watercourses, wet areas, and wetlands located downstream of the 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-i. The field assessment also included an evaluation and determination of compliance with the Standard Conditions per Provision I.B 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 I.B 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.

Property Description

This project consists of a 56 acre parcel which includes a residence and associated cannabis cultivation. The property is located on the west bank of the Mad River, near Maple Creek, California. The property is located within the SW ¼ of Section 06, Township 4N, Range 3E, Humboldt County.

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 iteratively 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 November 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).

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.

Assessment of Standard Conditions

Assessment of Standard Conditions consisted of field examinations in the summer of 2016. The examination evaluated areas near, and areas with the potential to directly impact, watercourses for sensitive conditions including, but not limited to, existing and proposed roads, skid trails and landings, unstable and erodible watercourse banks, unstable upslope areas, debris, jam potential, inadequate flow capacity, changeable channels, overflow channels, flood prone areas, and riparian zones. Field examinations also evaluated all roads and trails on the property, developed areas, cultivation sites, and any structures and facilities appurtenant to cultivation on the property. Anywhere the Standard Conditions are not met on the property, descriptions of the assessments and the prescribed treatments are outlined following each associated section below.

Summary of Standard Conditions Compliance

1. Site maintenance, erosion control, and drainage features Y⊠/N□
2. Stream crossing maintenance Y⊠/N□
3. Riparian and wetland protection and management Y \boxtimes /N \square
4. Spoils management Y⊠/N□
5. Water storage and use Y⊠/N□
6. Irrigation runoff Y⊠/N□
7. Fertilizers and soil amendments Y⊠/N□
8. Pesticides and herbicides? Y⊠/N□
9. Petroleum products and other chemicals Y□/N⊠
10. Cultivation-related wastes Y⊠/N□

A. Standard Conditions, Applicable to All Dischargers

11. Refuse and human waste Y⊠/N□

- 1. Site maintenance, erosion control and drainage features
 - 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.
 - 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.
 - 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.
 - 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 not hydrologically connected¹, as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.
 - 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.
 - f. Stockpiled construction materials are stored in a location and manner so as to prevent their transport to receiving waters.

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 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)

An assessment of all road surfaces and fill prisms found the road network on the property intact and adequately drained. The cultivation sites are not hydrologically connected with any watercourse. There are no unstable features within the property boundaries. All construction materials were found organized and stored away from watercourses. The discharger is compliant with this standard condition.

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 located within the property. This standard condition is currently being met.

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 III watercourse or wetlands. The Regional Water Board or its or its Executive Officer may apply additional or alternative⁴ 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

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.

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.

conveyances. 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.

There are two cultivation sites located on the property. Cultivation Site #1 (CS #1) is 190 feet from the Mad River while Cultivation Site #2 (CS #2) is 150 feet away from Mad River. There are no other watercourses within the property boundaries. The project is compliant with this standard condition.

4. Spoils Management

- a. Spoils⁵ 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.

The discharger contains all soil spoils within the greenhouses located on the property. The spoils are stored here over winter and amended for use in the spring. The discharger is compliant with this standard condition.

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 in consideration with other water use by operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC-12⁶ 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.

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.

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

^{7 &}quot;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.

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.

The discharger utilizes two surface diversions for irrigation. The first point of diversion (POD #1) is located in Mad River while the second (POD #2) is located within an off-stream Class II pond.

- POD #1: This diversion consists of a screened submersible pump within the channel of the Mad River. The diversion is plumbed using 1 inch poly-line to a 3600 gallon hard plastic storage tank. Rate of diversion and season of forbearance are pending agreement with CDFW.
- POD #2: This diversion consists of a screened submersible pump within a Class II off-stream pond. The pond is a natural feature undeveloped by the discharger which fills with rainwater. The high water mark of the pond covers approximately 17,000 square feet and has an unknown depth. The discharger has used this pond as a water source in the past and has never witnessed the pond dry. This diversion is also plumbed using 1 inch poly line to the 3600 gallon storage tank. Rate of diversion is pending agreement with CDFW. This pond was assessed with David Manthorne of CDFW on April 28th, 2016.

The 3600 gallon storage tank gravity feeds to a 4100 storage tank and a 300 gallon mixing tank before delivering to both cultivation sites. POD #1 is the source of irrigation water except for a 60 day forbearance season from August 15th to October 15th. The discharger diverts from POD#2 during this time. The discharger will install water meters to monitor water use throughout the rest of the 2016 cultivation season.

This project consists of two cultivation sites. Both sites are located on a flat meadow, < 5% slope.

- CS #1 is made up of two greenhouses measuring 20 feet by 80 feet and 20 feet by 40 feet.
- CS #2 consists of a 40 foot by 100 foot greenhouse and a 30 foot by 100 foot area containing potted outdoor cultivation.

There is a third surface diversion on the property, POD #3, which supplies domestic water to the residence on the property. This diversion consists of a 3 inch PVC pipe buried into a rocky hillside. This pipe delivers water to a 550 gallon storage tank before being pumped to the residence. The diversion diverts groundwater at approximately 250 gallons per day.

An Initial Statement of Water Diversion and Use will be filed with the State Water Control Board for all diversions. Timberland Resource Consultants is in the process of filing a Lake and Stream Bed Alteration agreement with California Department of Fish and Wildlife for the diversion structures. The discharger is compliant with this standard condition.

6. Irrigation Runoff

a. 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.

No irrigation runoff was present during inspection, nor is there evidence that it had occurred in the past. This standard condition is being met at this time.

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 discharger stores all fertilizers and amendments within the large greenhouse located at CS #2. This location can adequately protect fertilizers, amendments, and materials from leaving the site. The discharger is compliant with this standard condition.

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.

The discharger does not use any pesticide or herbicides and is compliant with this standard condition.

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.

The landowner temporarily stores small amounts, 10-20 gallons, of gasoline on the property. This fuel is stored in 5-10 gallon plastic canisters which are contained in a 7 foot by 20 foot storage shed. This shed consists of a wooden floor a top a post and pier foundation. The discharger will store fuel canisters containing fuel in plastic secondary containment tubs in order to be compliant with this standard condition.

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 stored⁸ 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.

The discharger temporarily piles and covers organic cultivation waste for burning. Nonorganic cultivation waste is treated with the domestic trash. This standard condition is being met at this time.

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

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.

The discharger contains all trash, including non-organic cultivation waste, within plastic and metal trash bins located near the residence. The discharger transports this trash to a proper disposal site once a month.

Human refuse is collected within the septic system installed into the house located on the property. The septic system is approximately 190 feet away from the Class II offstream pond. According to the landowner the septic system was installed in accordance with Humboldt County code. There are no obvious signs of system failure such as foul odors or vegetation blooms. The discharger is in the process of applying for a commercial cultivation license from Humboldt County and will have all buildings inspected for compliance with county structure and health codes. The discharger is compliant with this standard condition.

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 below in the Mitigation Report and also noted above in the document. All locations listed within the mitigation report will be monitored by the discharger and Timberland Resource Consultants.

Mitigation Report (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	Completio n Date
Fuei Storage	Fuel canisters need secondary containment	A(9)(b)	Contain canisters in storage shed	Contain fuel canisters in plastic tubs	1	10/15/16	

<u>Treat Priority:</u> Treatment Priority (1) indicates a very high priority with treatment being planned to occur immediately, (2) indicates a high priority site with treatment to occur prior to the start of the winter period (Oct. 15), (3) indicates a moderate priority with treatment being planned to occur within one year, or prior to the winter period (Oct. 15) of the 2nd season of operations, and (4) indicates 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).



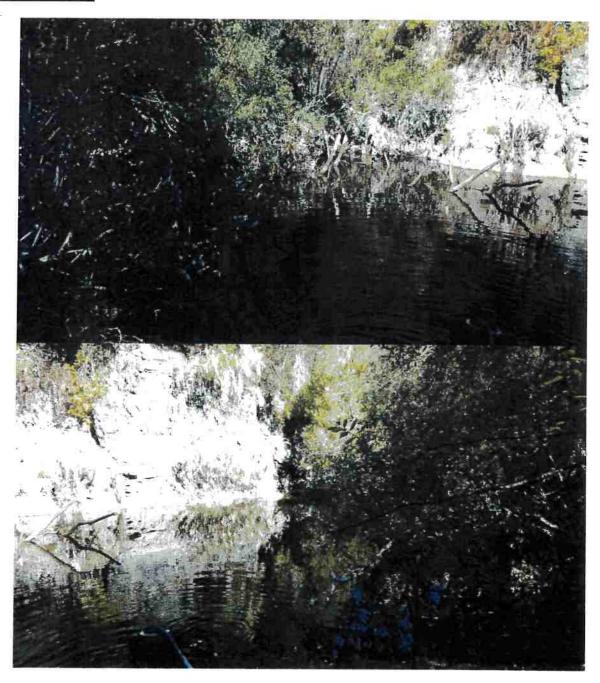
Picture 1: This is a photograph looking down on POD #1. The discharger places a submersible pump in the channel of the Mad River, pictured here. Photo date: 09/13/2016



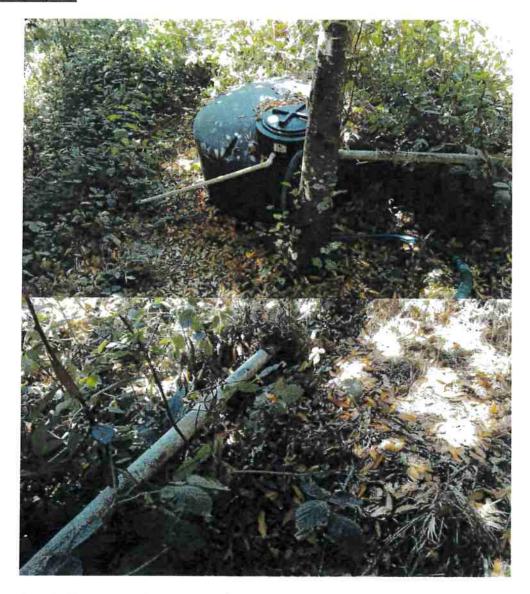
Picture 2: This is a photograph facing upstream from POD #1. Photo date: 09/13/2016



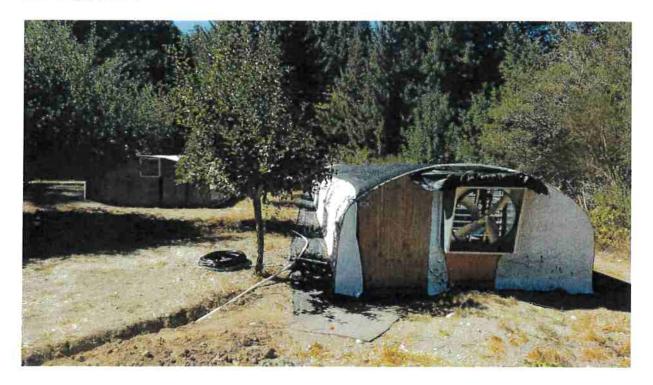
Picture 3: This is a photograph facing downstream from POD #1. Photo date: 09/13/2016



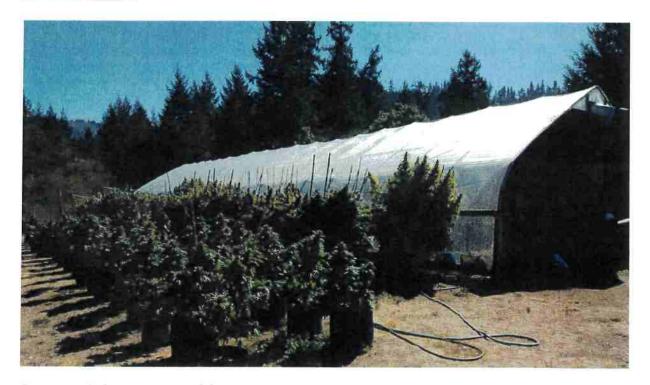
Pictures 4 & 5: These are photographs of POD #2 within the Class II pond located on the property. This pond is undeveloped by the discharger and naturally fills itself. The pond at its peak measures approximately 207 feet long and 60 feet across. The pond can potentially hold 400,000 to 800,000 gallons. There is only one pump located within this pond. The duplicate pumps in the images are a result of the side by side photographs. Photo date: 09/13/2016



Pictures 6 & 7: These are photographs of the domestic POD #3. This diversion consists of a 3 inch PVC buried into the hillside. The diversion diverts to this 550 gallon storage tank. The rate of diversion is approximately 2 gallons per minute. Photo date: 09/13/2016



Picture 8: This is a picture of Cultivation Site #1. This site contains 20' by 40' and 20' by 80' greenhouses within what was once an orchard. Photo date: 09/13/2016.



Picture 9: This is a picture of Cultivation Site #2. This site contains a 3,000 square foot outdoor space as well as a 40' by **10**0' greenhouse. Photo date: 09/13/2016.



Picture 10: This is a photo of the generator area. The discharger utilizes three Honda generators to provide power to the residence and cultivation sites. Five gallon fuel canisters used for temporary fuel storage can be seen in this photo. The discharger will contain these canisters in plastic tubs to ensure containment. Photo date: 09/13/2016.



Picture 11: This is a photo of the aeration cap and leach field for the septic system associated with the residence. The tire marks the location of the septic tank while the two leach fields are located in the rieft side of the photo. Photo date: 09/13/2016.



Picture 12: These photographs illustrate the discharger's compliance with standard conditions A.1.e, A.10, and A.11.b-c. The top image shows the discharger's pile of construction and cultivation materials. The lower image is the organic cultivation waste which is piled, covered and eventually burned under correct conditions. Photo date: 09/13/2016

