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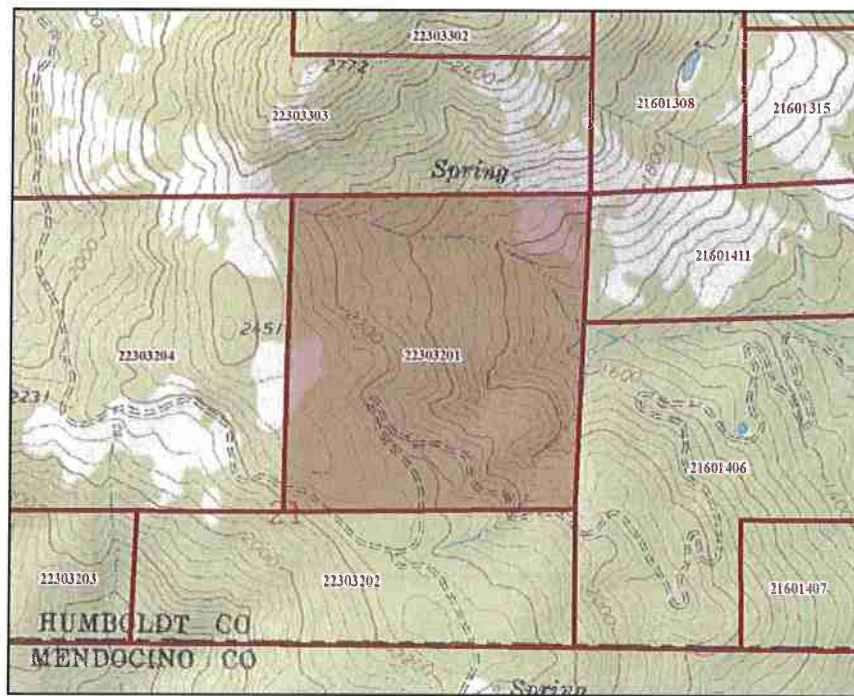
# Water Resource Protection Plan (WRPP)

for

APN 223-032-001

*Located off*  
**Reed Mountain Road**  
**Garberville, California**

August 2019



*Prepared for:*  
 WDID #1B16483CHUM  
 PWA ID #180101060201-5059  
 Reed Mountain Road, Garberville, CA

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## **Water Resource Protection Plan (WRPP)** **APN 223-032-001** **Reed Mountain Road** **Garberville, California**

### **1.0 PROJECT SUMMARY**

This report documents Pacific Watershed Associate’s (PWA)<sup>1</sup> Water Resource Protection Plan (WRPP) for APN 223-032-001 located off Reed Mountain Road, Garberville, California, as shown on Figure 1. This property is located approximately 7.2 miles southeast of Garberville, Humboldt County, CA, and hereinafter is referred to as the “Project Site.” Based on either site conditions and/or total cultivation area, this Project Site falls within **Tier 2** of the North Coast Regional Water Quality Control Board’s (NCRWQCB) Order No. 2015-0023, Waiver of Waste Discharge and General Water Quality Certification for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects (“Order”). Project Sites that fall into Tier 2 of the Order are required to develop a WRPP. Therefore, as required, this WRPP has been developed for you based on site inspections made by PWA on your property. PWA’s recommendations for any remediation or corrective actions are a result of water quality requirements under the Order, including Best Management Practices (BMPs) designed to meet those requirements (Appendix A). This WRPP documents the findings of a site visit conducted on March 31, 2016 by PWA Professional Geologist Kathy Moley and Staff Geologist Jack Skeahan. Additional site visits were conducted on January 23, 2018 by PWA staff.

### **2.0 CERTIFICATIONS, LIMITATIONS AND CONDITIONS**

This WRPP has been prepared by, and under the responsible charge of a California licensed geologist or certified licensed professional in erosion and sediment control at PWA and all information herein, including treatment recommendations, are based on observations, data and information collected by PWA staff.

This WRPP has been prepared to: 1) describe the general conditions of the property at the times of our inspections; 2) summarize the site conditions and how they relate to the NCRWQCB twelve (12) Standard Conditions of the Order; 3) provide recommendations for remediation and/or correction of existing or potential water quality threats or impacts; and 4) recommend work to be conducted on this property to meet the 12 Standard Conditions of the Order. The analysis and recommendations submitted in this WRPP are based on PWA’s evaluation of the Project Site and your activities which fall under the Order.

In this WRPP PWA has described the current conditions of the property and any water resource and water quality risk factors which was observed at the time of PWA’s site inspection. PWA is not responsible for problems or issues we did not observe on our site inspection, or for changes that have naturally occurred or been made to the property after our site review. The interpretations

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<sup>1</sup> PWA is an approved Third Party Program for the North Coast Regional Water Quality Control Board’s (NCRWQCB) Order No. 2015-0023, Waiver of Waste Discharge and General Water Quality Certification for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects (“Order”).



and conclusions presented in this WRPP are based on a reconnaissance level site investigation of inherently limited scope. Observations are qualitative, or semi-quantitative, and confined to surface expressions of limited extent and artificial exposures of subsurface materials. Interpretations of problematic geologic, geomorphic or hydrologic features such as unstable hillslopes, erosional processes and water quality threats are based on the information available at the time of our inspection and on the nature and distribution of existing features we observed on the property.

We have also included recommendations for remediation and/or correction that are based on these observations. The recommendations included in this WRPP are professional opinions derived in accordance with current standards of professional practice, and are valid as of the date of field inspection. No other warranty, expressed or implied, is made. Furthermore, to ensure proper applicability to existing conditions, the information and recommendations contained in this report shall be regularly reevaluated and it is the responsibility of the landowner and/or lessee operating under the Order to ensure that no recommendations are inappropriately applied to conditions on the property that have changed since the recommendations were developed.

If site conditions have changed for any reason, the site should be reevaluated and the WRPP revised and updated as required. These conditions include any changes in land management activities or property conditions that have occurred since our site visit (regardless of what they are, how they occurred or who performed them). Similarly, if the landowner/lessee uses portions of this property not identified or covered under the current WRPP, this WRPP will need to be updated with the new information, including possible additions or changes to the recommended remedial or corrective actions and BMPs (Appendix A).

If the property owner has enrolled their property under the Order, they are responsible for complying with all the requirements thereunder, regardless of who is operating or cultivating on that property. If the property is being formally or informally leased to an operator, and the lessee has enrolled under the Order, then the lessee is responsible for complying with the Order's requirements, including the WRPP and related recommendations and requirements. If the lease expires or the lessee is not otherwise available or does not respond to information requests by the NCRWQCB or PWA, then the landowner automatically assumes responsibility under the Order for the requirements therein and for all related penalties or actions brought by the NCRWQCB.

If at any time in the future the property is to transfer ownership, it is the responsibility of the current owner, or their representatives, to ensure that the information and recommendations contained herein are called to the attention of any future owner or agent for the property. Unless this WRPP is modified by the NCRWQCB, or another approved Third Party Program representative, the findings and recommendations contained in this WRPP shall be utilized as a tool while implementing the recommendations made within this WRPP. Necessary steps shall be taken to see that contractor(s) and subcontractor(s) carry out such recommendations in the field in accordance with the most current WRPP and BMP standards.

As a Third Party Program, PWA will be responsible for the data, interpretations and recommendations developed by PWA, but will not be responsible for the interpretation by others of that information, for implementation of corrective actions by others, or for additional or modified work arising out of those plans, interpretations and recommendations. PWA assumes no

liability for the performance of other workers or suppliers while following PWA's recommendations in the WRPP, unless PWA is under contract to perform or oversee those activities. Additionally, PWA is not responsible for changes in applicable or appropriate standards beyond our control, such as those arising from changes in legislation or regulations, or the broadening of knowledge which may invalidate or alter any of our findings or recommended actions.

Any WRPP plan review or construction management services that may be needed or identified in the recommendations sections of this report are separate tasks from the preparation of this WRPP, and are not a part of the contract under which this WRPP was prepared. If requested, additional PWA field inspections, surveys, WRPP revisions/updates, project layout, design, permitting, construction oversight/management, or other related services arising from tasks described and recommended in the WRPP may be performed under separate agreements requiring advance notice and contracting.

PWA's services consist of professional opinions and recommendations made in accordance with generally accepted principles and practices. No warranty, expressed or implied, or merchantability or fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings. If the client desires assurances against project failures, they shall obtain appropriate insurance through their own insurance broker or guarantor.

This WRPP is considered a living document and shall be updated at least annually, or sooner if conditions have changed or land management actions have been undertaken after our site inspection. As an official part of the Waiver Program, this WRPP (including all its text, appendices, maps and photos) shall remain onsite and available for NCRWQCB staff to inspect and review upon request.

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**Insert Figure 1 here.....**



### 3.0 INTRODUCTION

This Water Resources Protection Plan (WRPP) summarizes the results of Pacific Watershed Associate's (PWA) site visit and subsequent analysis and documentation of site conditions on APN 223-032-001 located off Reed Mountain Road, Garberville, California, as shown on Figure 1 and hereinafter referred to as the "Project Site." The WRPP describes and addresses the required elements and compliance with the 12 Standard Conditions established by the North Coast Regional Water Quality Control Board's (NCRWQCB) Order No. 2015-0023 to protect water quality from cannabis cultivation and related activities (Order). PWA has identified certain areas where the Project Site does not fully meet all 12 of the Standard Conditions of the Order. Section 4, below, identifies and discusses each of the 12 Standard Conditions as related to your property with regard to compliance with the NCRWQCB's Order.

The WRPP contains the following required sections:

1. Legible map (Figure 2) depicting the required site elements and features associated with the 12 Standard Conditions of the Order;
2. Description of current site conditions, compliance with the 12 Standard Conditions, and prioritized remediation or corrective actions needed to bring the site into compliance with the requirements of the Order;
3. A monitoring and inspection plan to ensure BMPs used to protect and prevent impacts to water quality are being implemented as recommended by PWA (implementation monitoring), and that they are effective (effectiveness monitoring);
4. A water use plan, including water sources, water use and storage rights documentation, monthly water use documentation (quantity), and water conservation measures that are employed to prevent adverse impacts to water quality and water quantity in the watershed;
5. List of fertilizers and chemicals stored and used onsite, including a log of the frequency and quantity of these materials used.

### 4.0 STANDARD CONDITIONS CHECKLIST FOR APN 223-032-001 as of 3/31/16

The NCRWQCB has developed a set of 12 Standard Conditions that shall be followed and implemented to protect and improve water quality as required under the NCRWQCB's Order. For a property to become compliant with the Order, all 12 Standard Conditions must be fully satisfied.

The following section details the specific requirements listed and described in the Order for each of the 12 Standard Conditions. Each Standard Condition has from 1 to 6 sub-requirements (*listed in italic type*), each of which must be satisfied to protect water quality and comply with the Order. The checklist developed by PWA for your property indicates: 1) whether the Standard Condition or Standard Condition sub-requirement was adequately met as of the date of PWA's field inspection, 2) PWA's observations and comments related to the Standard Condition or Standard Condition sub-requirement, 3) whether a relevant photo has been taken and included in the WRPP, and 4) recommended corrective or remedial actions that need additional work to meet the requirements of the Order.

In Section 5 of this WRPP, PWA has provided a summary prioritized list (Table 1) of the recommended treatments and actions to be implemented by you to meet the requirements of the

Order. PWA will consult with you to review the WRPP document and findings, and to set a preliminary schedule for implementation of the recommended measures for achieving compliance with the Order. Please note that some of the PWA recommended actions are based on regulatory requirements and deadlines, while others can be scheduled to fit the needs of both you and your property.

#### 4.1 Standard Condition #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.*

**Meets condition?** No

**Observations/Comments:** Roads on the Project Site have ruts and gullies due to road segments lacking appropriate drainage features such as adequate outsloping, rolling dips, ditch relief culverts (DRC) or water bars.

Minor gullying was observed on other roads on the Project Site however sediment delivery to surface waters was not observed at these locations. The landowner will need to determine responsibility for road maintenance on Reed Mountain Road (Access Road #1) and coordinate with that entity or entities to identify and implement any needed road drainage or stream crossing treatments.

**Note:** Much of the Project Site parcel is covered with second growth forests that likely conceal abandoned (legacy) forest roads used in past logging; these may or may not contain eroding or potential sediment sources that pose a threat to water quality.

**Photos:** MP #1: Photo 1. MP #2: Photo 2, MP #3: Photo 3. MP #4: Photo 4. MP #5: Photo 5. MP #6: Photo 6. MP #7: Photo 7. MP #19: Photo 29.

**Corrective or remedial actions needed:** Install road drainage features at the locations shown on Figure 2. Due to the close proximity of SC #4 and SC #5 installation of a rolling dip in between these stream crossings may not be feasible. Installation of the critical dip on the left hinge line of SC #4 (see Standard Condition Section 4.2f, below) may adequately disconnect the right road approach to SC #5. In addition to the locations shown on Figure 2, install appropriate road drainage features at any location where concentrated road runoff and gullying is observed. Typical drawings included in Appendix H will provide guidance for proper road drainage feature construction.

- 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.*

**Meets condition?** No

**Observations:** A cutbank spring on Access Road #6 and concentrated road runoff on the lower segment of Access Road #7 flows down steep segments of road which lack drainage features and have caused minor erosion of the road bed and mobilization of sediment, although active sediment delivery to surface waters was not observed at the time of the Project Site inspection. Also see Standard Condition Section 4.1a observations and comments, above.

**Photos:** See Standard Condition Section 4.1a Monitoring Points and photos, above.



**Corrective or remedial actions needed:** PWA recommends the installation of water bars on Access Road #6 and a rolling dip, if feasible due to road grade, on Access Road #7 at the locations shown on Figure 2 to minimize future erosion of the road surface and eliminate the potential for sediment delivery. Alternatively due to the steep road grade and minimal areas of use on Access Road #6 this road segment could be decommissioned if not needed. Also see Standard Condition Section 4.1a corrective actions, above.

- 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.*

**Meets condition?** No

**Observations/Comments:** An unstable outboard fillslope to the left of SC #1 has failed above a Class III stream with a high likelihood of sediment delivery and future failure. The instability of this section of outboard fillslope may be due to a lack of proper fill compaction combined with contributing road runoff from Access Road #5. Although significant erosion of the connected right road was not observed an outboard berm exists along this section of road which may be a result of recent road grading. This outboard berm, along with road runoff from Access Road #5 has the potential to combine with diverted stream flow from SC #1 that lacks a critical dip and contribute to oversaturation of the unstable outboard fillslope, leading to future sediment delivery.

**Photos:** None.

**Corrective or remedial actions needed:** To ensure that concentrated road runoff and potential diverted stream flow is not conveyed to the unstable outboard fillslope PWA recommends installation of a rolling dip to the right of the unstable outboard fillslope in addition to the critical dip recommended in Standard Condition Section 4.2f, below. PWA also recommends excavation of the unstable portion of the outboard fillslope to mitigate future sediment delivery at this location while maintaining a drivable road width. Monitor the unstable outboard fillslope mentioned above to ensure sediment delivery to surface waters does not occur.

- 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, as feasible, from surface waters, including wetlands, ephemeral, intermittent and perennial streams.*

**Meets condition?** No

**Observations/Comments:** There is hydrologic connectivity between access roads on the Project Site and nearby streams at multiple locations (Figure 2). Also see Standard Condition Sections 4.1a - 4.1c observations and comments, above.

**Photos:** See Standard Condition Sections 4.1a and 4.1c Monitoring Points and photos, above.

**Corrective or remedial actions needed:** Install road drainage features at the locations shown on Figure 2 to disconnect surface runoff from nearby streams. Also see Standard Condition Sections 4.1a - 4.1c corrective actions, above.

- 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.*

**Meets condition?** No

**Observations/Comments:** See Standard Condition Sections 4.1a - 4.1d observations and comments, above.

**Photos:** See Standard Condition Sections 4.1a and 4.1c Monitoring Points and photos, above.

**Corrective or remedial actions needed:** See Standard Condition Sections 4.1a - 4.1d corrective actions, above.

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

**Meets condition?** Yes

**Observations/Comments:** Stockpiled construction materials were not observed on the Project Site with delivery potential to surface waters.

**Photos:** No

**Corrective or remedial actions needed:** None

**Standard Condition #1. - General comments and recommendations:** Approximately 2.3 miles of road exist on the Project Site, consisting of a multiple access, skid and legacy logging roads. All roads occupy a mid to high gradient, middle-watershed location and most roads exhibit surface erosion issues caused by a lack of road drainage structures.

#### **4.2 Standard Condition #2. Stream Crossing Maintenance**

- a) *Culverts and stream crossings shall be sized to pass the expected 100-year peak streamflow.*

**Meets condition?** No

**Observations/Comments:** Ten (10) stream crossings were identified on the Project Site (Figure 2). One of the stream crossings (SC #10) is mostly washed out and another stream crossing (SC #2) is a filled crossing that is currently diverted. Four (4) culverts (SC #1, SC #5, SC # 8 and SC #9) appear undersized. Four (4) stream crossing (SC #3, SC #4, SC #6 and SC #7) appear to have appropriately sized culverts according to culvert sizing calculations. Although PWA recommends a minimum 24-inch diameter culvert for stream crossings to accommodate stream flow and associated debris (see SC #4). Table 1 below lists the ten stream crossings and the recommended upgrade culvert diameter to accommodate the expected 100-year peak streamflow or additional treatments to reduce erosion and sediment delivery.

**Table 1. Culvert Sizing and Treatment Recommendations<sup>1</sup>**

Stream Crossing number	Monitoring Point number	Existing culvert diameter (in)	Watershed area (acres)	Recommended culvert diameter (in)	Additional comments
SC #1	MP #7	18	9	24	Upgrade with 24-inch diameter culvert installed at base of fillslope. Install trash rack at inlet. Monitor and maintain regularly to prevent plugging.
SC #2	MP #8	Filled crossing (no culvert)	2	--	Stream crossing is proposed for decommissioning.
SC #3	MP #9	36	20	36	Culvert adequately sized. Monitor and maintain regularly. Install trash rack at inlet.
SC #4	MP #10	18	1	18	Upgrade with 24-inch diameter culvert installed at base of fillslope. Install trash rack at inlet.
SC #5	MP #11	18	7	24	Upgrade with 24-inch diameter culvert installed at base of fillslope. Install trash rack at inlet.
SC #6	MP #12	30	7	30	Install trash rack at inlet. Replace with 30-inch diameter culvert installed at base of fillslope for other reasons if required.
SC #7	MP #13	18	5	24	Upgrade with 24-inch diameter culvert installed at base of fillslope. Install trash rack at inlet.
SC #8	MP #14	36	78	60	Upgrade with 60-inch diameter culvert installed at base of fillslope. Install trash rack at inlet.
SC #9	MP #15	36	47	48	Upgrade with 48-inch diameter culvert installed at base of fillslope if feasible. Install trash rack at inlet.
SC #10		Washed out (no culvert)	--	--	Stream crossing is mostly washed out and no treatments are recommended.

<sup>1</sup>Assumes mean annual precipitation = 57-inches

Methods for determining culvert sizes to address the 100-year peak streamflow include the Rational Method, USGS Magnitude and Frequency Method and Flow Transference Method. All of the stream crossing upgrades will be constructed according to standards provided in the "Handbook for Forest, Ranch and Rural Roads," (Weaver, Weppner, and Hagans, 2015) (i.e., minimum 24-inch diameter culverts for crossings), and the California Salmonid Stream Habitat Restoration Manual, Part X (Weaver et al., 2006).

**Photos:** MP #7: Photo 8. MP #8: Photo 9 & 10. MP #9: Photo 11 & 12. MP #10: Photo 14 & 15. MP #11: Photo 16 & 17. MP #12: Photo 18. MP #13: Photo 19. MP #14: Photos 20 & 21. MP #15: Photos 22 & 23.

**Corrective or remedial actions needed:** PWA recommends upgrading the stream crossings mentioned in Table 1, above, with properly sized culverts that are designed to pass the expected 100-year peak stream flow (including debris in transport), as well as



the other stream crossing construction standards required by the Order (e.g., minimized hydrologic connectivity, correct vertical/horizontal, alignment, no diversion potential, etc.). PWA recommends decommissioning SC #2 and eliminating the existing stream diversion. PWA also recommends conducting regular inspections and maintenance of stream crossings to ensure conveyance of flow and debris, to prevent plugging and to monitor the potential for erosion before, during and after treatment of these stream crossings. Inspections and maintenance should occur during or after winter storms as well as annually prior to each winter period.

- b) *Culverts and stream crossings shall be designed and maintained to address debris associated with the expected 100-year peak streamflow.*

**Meets condition?** No

**Observations/Comments:** Based on culvert sizing calculations five of the eight culverted stream crossings on the Project Site are undersized to address debris associated with the expected 100-year peak streamflow. Also see Standard Condition Section 4.2a comments and observations, above.

**Photos:** See Standard Condition Section 4.2a Monitoring Points and photos, above.

**Corrective or remedial actions needed:** PWA recommends upgrading the stream crossings mentioned above with properly sized culverts that are designed to address debris associated with the expected 100-year peak stream flow. PWA also recommends installing single post trash racks upstream of the culvert inlet at SC #1 and SC #3 – SC #9.

- 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.*

**Meets condition?** No

**Observations/Comments:** Stream Crossing SC #2, SC #3, SC #6 and SC #8 - SC #10 are installed on intermittent streams and are not constructed properly to allow passage of aquatic organisms.

**Photos:** See Standard Condition Section 4.2a Monitoring Points and photos, above.

**Corrective or remedial actions needed:** When the stream crossings mentioned above are upgraded or decommissioned ensure that the culverts are installed at the natural channel grade and/or the stream crossing is designed to allow passage of aquatic organisms.

- 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.*

**Meets condition?** No

**Observations/Comments:** Stream crossing SC #1 - SC #7 require maintenance, such as cleaning of culvert inlets or placement of rock armor or materials to protect exposed surfaces from rainfall or splash erosion until such time as these crossings can be properly upgraded or decommissioned.

**Photos:** See Standard Condition Section 4.2a Monitoring Points and photos, above.

**Corrective or remedial actions needed:** PWA recommends implementing appropriate BMPs (see Appendix A) to minimize or eliminate erosion at the stream crossings

before, during and after upgrade treatments are completed. Accumulated sediment and debris plugging the culvert inlet at SC #1, SC #4, and at any other culvert inlets on the Project Site should be removed as soon as possible to prevent plugging of the culvert inlet which can lead to stream diversion.

- e) *Culverts shall align with the stream grade and natural stream channel at the inlet and outlet where feasible.*

**Meets condition?** No

**Observations/Comments:** The culverts at SC #3, SC #4 and SC #6 - SC #9 are not aligned with the natural stream grade. It appeared that the culverts at SC #1, SC #3, SC #4, and SC #6 - SC #9 were horizontally aligned with the natural stream channel.

**Photos:** MP #9: Photos 11 & 12, MP #10: Photos 14 and 15. MP #12: Photo 18. MP #13: Photo 19. MP #14; Photos 20 & 22. MP #15: Photos 22 & 23.

**Corrective or remedial actions needed:** When the stream crossings mentioned above are upgraded or any other culverts on the Project Site are replaced for other reasons ensure that the culverts are installed at the natural channel grade and horizontally aligned with the natural stream channel.

- 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.*

**Meets condition?** No

**Observations/Comments:** Stream Crossing SC #1, SC #3 - SC #6 and SC #9 currently have diversion potential. Stream Crossing #2 is currently diverted. Stream Crossing #10 is mostly washed out and does not have diversion potential. No critical dips are installed at any of the stream crossings mentioned above to prevent stream diversion in the event of culvert plugging or overtopping.

**Photos:** See Standard Conditions Section 4.2a.

**Corrective or remedial actions needed:** When the stream crossings mentioned above are upgraded ensure that critical dips are installed on the down road hinge line of the stream crossings and that the potential for diversion does not exist.

**Standard Condition #2. - General comments and recommendations:** Obtain all necessary agreements and permits prior to commencing work in any watercourse or at any stream crossing. These may include, but not be limited to: California Department of Fish and Wildlife (CDFW) Lake and Streambed Alteration Agreement (LSAA) 1602 and the State Water Resource Control Board 404.

#### **4.3 Standard Condition #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 1 or 2 watercourse or within 50 feet of any Class 3 water course or wetlands.*

**Meets condition?** No

**Observations/Comments:** Under the Order, all cultivation areas AND associated facilities that are located within 50-feet of a Class III watercourse, or within 100-feet of a Class I or Class II watercourse are required to be removed from the buffer, and the site is to be restored. There are no provisions for exceptions, regardless of the level of their potential threat to water quality.

During one of the Project Site inspections, the onsite plumbing infrastructure for the points of Diversion appear to impact the natural flow of the creek or spring. All diversions shall maintain a minimum of 80% by-pass flow. Spring diversions shall be constructed so as to allow passage of free flowing water.

A water tank and mixing tanks (associated facilities) are located within the riparian buffer zones of SC #5, a Class III stream (See Figure 2).

1. One 3,000-gallon backup water tank to the right of SC #5 is within the 50-foot riparian buffer zone of a Class III stream.
2. One 550-gallon mixing tank and one 300-gallon mixing tank to the left of SC #5 is within the 50-foot riparian buffer zone of a Class III stream.
3. One 5,000-gallon water tanks to the right of SC #5 is located within the 50-foot riparian buffer zone of a Class III stream.

According to the Order these items mentioned above must be relocated outside of the riparian buffer zone. Appropriate BMPs should be implemented at these locations to help mitigate potential threats to surface waters until relocation of these items is complete.

**Photos:** MP #16: Photo 23; MP #17: Photos 24 & 25; MP-18; Photos 26, 27 & 28.

**Corrective or remedial actions needed:** Relocate the items mentioned in Standard Condition 4.3a observations and comments, above, outside of the riparian buffer zones. PWA recommends implementing appropriate BMPs to protect riparian areas until such time as relocation of the water and mixing tanks outside of the buffer zones has been completed.

Once the water and mixing tanks mentioned above have been relocated, the disturbed buffer areas at these locations should be seeded and mulched for erosion control and replanted with native riparian vegetation. Implement additional appropriate BMPs at these locations to protect water quality and the riparian buffer zone where necessary.

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

**Meets condition?** No

**Observations/Comments:** Riparian buffer slopes have been altered and native vegetation has been impacted due to placement of mixing tank pads. Also see Standard Condition 4.3a observations and comments, above.

**Photos:** See Standard Condition Section 4.3a Monitoring Points and photos, above.

**Corrective or remedial actions needed:** PWA recommends reshaping any impacted areas within the riparian buffer areas back to natural slope gradients where possible and revegetating these areas with native vegetation after relocation has been completed.



- 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.*

**Meets condition?** Yes

**Observations/Comments:** All cultivation areas meet the riparian buffers on this property.

**Photos:** None.

**Corrective or remedial actions needed:** Insure that all cultivation, cultivation activities and cultivation related waste remain outside of the riparian buffer zones.

- 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.*

**Meets condition?** No

**Observations/Comments:** See Standard Condition Sections 4.3a, and 4.3b, observations and comments, above.

**Photos:** See Standard Condition Section 4.3a Monitoring Points and photos, above.

**Corrective or remedial actions needed:** See Standard Condition Section 4.3a and 4.3b corrective actions, above.

**Standard Condition #3. - General comments and recommendations:** Multiple water and mixing tanks on this Project Site do not meet the setback or buffer area requirements to be achieved and maintained under the North Coast Water Quality Control Board's (NCRWQCB) Waiver of Waste Discharge (Order) (see Standard Condition Section 4.3a, above). However, if you are participating in the Humboldt County Land Use Planning and Building Department (HCPBD) permitting process, the HCPBD requires that no infrastructure be moved at this time to maintain consistency in the process of evaluating and approving a pending land use application on file for properties in Humboldt County.

- (1) All cultivation waste and spent soils should be stored outside the buffer areas during the winter period as per recommendations included elsewhere in this WRPP.
- (2) All petroleum products, fertilizers, and other chemicals shall be stored outside buffer area.
- (3) Minimize soil disturbances and bare earth areas within these cultivation areas; seed and mulch all bare earth prior to October 31 each year.
- (4) Maintain native grassy buffers and/or dense riparian vegetation between these cultivation areas and the potential receiving waterbody.
- (5) Prior to October 31<sup>st</sup>, planting beds and planting pots containing spent soils or amendments should be either 1) fully tarped or 2) planted with cover crops during the wet season to minimize surface runoff and leaching of nutrients. If cover crops cannot be maintained due to cold weather, the beds/pots should be fully tarped.
- (6) Regularly monitor the subject garden area and related facilities to assure the interim measures are effective and adaptively manage the area to minimize or eliminate surface runoff and potential impacts to water quality.

#### 4.4 Standard Condition #4. Spoils Management

- a) *Spoils shall not be stored or placed in or where they can enter any surface water.*

**Meets condition?** Yes

**Observations/Comments:** No spoil materials were observed on the Project Site with the potential for delivery to surface waters.

**Photos:** None.

**Corrective or remedial actions needed:** None.

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

**Meets condition?** Yes

**Observations/Comments:** See Standard Condition 4.4a observations and comments, above.

**Photos:** None.

**Corrective or remedial actions needed:** None.

- 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.*

**Meets condition?** No

**Observations/Comments:** There was one fill failure which was identified (MP-19) as being unstable with the potential to enter or be transported to surface waters.

**Photos:** Photo 29, MP-19

**Corrective or remedial actions needed:** Pull back all unstable fill along the outboard edge of roadway. Improve road drainage so that water does not drain onto unstable slope.

#### 4.5 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 operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC 12 watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.*

**Meets condition?** Unknown

**Observations/Comments:** The client diverts surface water for irrigation and domestic use from a near origin source of a Class III stream (POD #1) and two springs (POD #2, POD #3) on the Project Site. Rainwater is also stored in an off-stream pond, which can be used for both irrigation and for emergency fire suppression.

Based on approximately 15,000 ft<sup>2</sup> of cultivation area and the amount of water storage currently available for irrigation, 50,825-gallons in rigid water tanks and an off-stream pond which can hold approximately 150,000-gallons plus, it appears that water storage generated during the rainy season may be sufficient for the landowner to forbear (not divert) during the dry season.

Based on water use, additional water storage may be needed to minimize or eliminate surface water diversion during the forbearance period. Preliminary Water Budgets may need to be refined by water monitoring to verify the existing water storage is adequate for the size of the operation to observe the forbearance period.

**Photos:** Photos 30, 31, 32, 33, 34, 35, 36, 37, & 38, MP-19

**Corrective or remedial actions needed:** A Water Budget should be developed to quantify the volume of water storage you will need for your operations so as to forbear and not divert surface waters during the low flow period from May 15<sup>th</sup> through October 31<sup>st</sup> each year. A Water Monitoring Plan will also need to be developed and implemented for you to measure and document all the surface water you divert, store and use in your operations. The water data for this Project Site is required to be reported to the Water Board on or before March 31<sup>st</sup> for the preceding calendar year. See Appendix D for water monitoring data forms.

- 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.*

**Meets condition?** Yes

**Observations/Comments:** PWA observed that water conservation strategies such as utilizing a drip irrigation system and surface mulching have been employed. In addition an off-stream rainwater fed pond is also used for irrigation. Other water conservation strategies should be implemented.

**Photos:** Photos 36, 37, & 38, MP-19

**Corrective or remedial actions needed:** PWA recommends installing shut off float valves on all water tanks where needed to eliminate overflow and improve water conservation. Additional water conservation measures should continue to be investigated and employed to minimize surface water diversion and use. These include volume-limited or timed and programmable drip irrigation systems, incorporating water holding amendments and native soil during the initial soil preparation at the start of the season and planting plants in the ground instead of above ground pots. Additional rainwater harvesting during the wet season should be evaluated and employed to limit or completely eliminate surface water diversions during the dry season.

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

**Meets condition?** Yes

**Observations/Comments:** There is an approximate 150,000-gallons of off-stream pond and approximately 50,825-gallons in ridged storage tanks. Additional off-stream water storage requirements will be determined after the Water Budget has been developed and refined.

**Photos:** Photos 30, 31, 32, 33, 34, 35, 36, 37, & 38, MP-19

**Corrective or remedial actions needed:** Develop and refine a Water Budget for your Project Site to determine if sufficient off-stream water storage volumes exist for all your water needs during the dry season. A preliminary analysis suggests additional off-stream water storage may not be needed. Increased water storage may be recommended



depending upon the results of the Water Budget to limit diversion of surface flow to the winter months and completely eliminate diversions needed for irrigation activities during the dry season from May 15 through October 31. Investigate and decide if multiple rigid tanks and/or one or more additional off-stream ponds will be added and begin the process of siting and design of additional water storage.

- d) *Water is applied using no more than agronomic rates.*

**Meets condition?** Yes

**Observations/Comments:** According to the cultivator, water is applied at agronomic rates, though application was not observed due to the pre-season inspection date.

**Photos:** No

**Corrective or remedial actions needed:** To verify conformance with this Standard Condition, start measuring and recording your water usage using flow meters on a per plant basis, based on type and size of plant pot, full term versus short season (light deprivation) plant, and type of irrigation. Observe and monitor soil moisture so watering, fertilizer and chemical applications are made only when necessary and overwatering and excess infiltration is avoided. This data will help you refine a Water Budget for your operation and determine agronomic rates of watering.

- 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.*

**Meets condition?** Yes

**Observations/Comments:** An Initial Statement of Diversion and Use (ISDU) application and a Small Domestic Use (SDU) appropriation has been filed with the California State Water Board for the stream diversions.

**Photos:** No

**Corrective or remedial actions needed:** Submit annual water diversion and use volumes to the NCRWQCB by March 31 for the preceding calendar year, and to the State Water Resources Control Board, Division of Water Rights (SWRCB-DWR) for supplemental reporting required for the Annual Statement of Diversion and Use (ISDU) by June 30 of each year.

**Agricultural water rights:** Additionally, if you have not already done so, you should obtain a Small Irrigation Use Registration (SIUR) with the SQECB-DWR.

- 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.*

**Meets condition?** No

**Observations/Comments:** As of PWA's latest site visit, there is a 5,000-gallon water storage tank located along the outboard edge of the road prism upslope of stream crossing SC#5. If this tank were to overflow, the erosion potential could be significant.

**Photos:** Photo 35, MP-19.

**Corrective or remedial actions needed:** Water storage tank should be relocated to a more stable location, outside or the riparian zone of any creek, stream, or spring.

#### 4.6 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.*

**Meets condition?** Yes

**Observations/Comments:** No evidence of irrigation runoff exhibiting active delivery to nearby watercourses was observed on the Project Site.

**Photos:** No

**Corrective or remedial actions needed:** Due to the close proximity of the lower cultivation areas to the Class II and Class III streams PWA recommends that appropriate BMP's be implemented to control and contain any potential runoff from the lower cultivation areas.

To comply with this Standard Condition you should ensure that once irrigation activities begin on the Project Site, 1) watering is done at agronomic rates and 2) appropriate containment BMPs are implemented where necessary to prevent irrigation runoff. Agronomic rates are those rates of application of water, fertilizers and other amendments that are sufficient for utilization by the crop being grown, but not at a rate that would result in surface runoff or infiltration below the root zone of the crop being grown. Containment BMPs include sediment basins, berms, infiltration ditches and/or other Best Management Practices (BMPs) such as applying straw waddles or hay bales, as needed, to contain and control surface runoff (see Appendix A).

**Standard Condition #6 - General comments and recommendations:** According to the Order, irrigation and fertilization shall occur at agronomic rates and chemicals shall be applied according to the label instructions and specifications. In the event that irrigation runoff occurs or could occur, you shall ensure that contaminated runoff does not enter nearby watercourses.

#### 4.7 Standard Condition #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.*

**Meets condition?** No

**Observations/Comments:** Potting soil stored outdoors on the Project Site has the potential for transport to surface waters and leaching into groundwater if not tarped or heavily planted and maintained with cover crops over the wet season. Additional fertilizers and other materials on the Project Site are stored inside storage sheds.

**Photos:** Photo 39

**Corrective or remedial actions needed:** When not being used on the planting beds or in greenhouses, all fertilizers, soil amendments, potting soils and compost shall be stored within a water tight building or covered area not exposed to the elements or, if stored outdoors, fully tarped in a stable location with no chance of nutrient leaching or delivery to surface waters. Cover crops or native grasses should be planted at these areas to utilize any remaining nutrients. Install straw wattles or implement other appropriate containment BMPs where necessary to contain any mobilized nutrients at the locations listed above and elsewhere on the Project Site.

- b) *Fertilizers and soil amendments shall be applied and used per packaging instructions and/or at proper agronomic rates.*

**Meets condition?** Unknown

**Observations/Comments:** Based on verbal communication with the cultivator, the recommended application rates are reportedly being followed.

**Photos:** No

**Corrective or remedial actions needed:** To confirm compliance with this Standard Condition, you need to keep detailed records of the type, timing and amount of fertilizers and/or other soil amendments you use in your operations. They can be recorded on log sheets such as those provided in Appendix E or by using another accurate record keeping method. Observe and monitor soil moisture so watering, fertilizer and chemical applications are made only when necessary and overwatering and excess infiltration is avoided.

- c) *Cultivation areas shall be maintained so as to prevent nutrients from leaving the site during the growing season and post-harvest.*

**Meets condition?** No

**Observations/Comments:** Potting soil observed on the Project Site was improperly stored and uncovered with the potential for mobilization to surface waters and/or leaching into groundwater.

**Photos:** Photo 40, MP-21.

**Corrective or remedial actions needed:** To prevent nutrient mobilization and/or nutrient leaching in the future, soils shall be: 1) keep new or spent potting soils and amendments inside or under a roof or 2) keep exposed soils or amendments fully tarped when not in use. All used soils should be properly stored in planting holes, pots and beds, or plant dense cover crops to enrich soil and lock up nutrients over the wet season.

**Standard Condition #7 - General comments and recommendations:** Potting soil on the Project Site was observed to have potential for mobilization to surface waters or leaching into groundwater if not covered over the wet season.



Under the Order, you are required to keep track of the timing and volume of fertilizers and other soil amendments that are applied. This can be done using a simple log form we have provided in Appendix E.

Plant cover crops in spent pots and holes to enrich soil and lock up nutrients. Do not store fertilizers and/or soil amendments with petroleum products. See guidelines for hazardous material storage in Appendix G.

#### 4.8 Standard Condition #8. Pesticides/Herbicides

- a) *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 labelling 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.*

**Meets condition?** Unknown

**Observations/Comments:** Neither pesticides nor herbicides were observed on the property at the time of our inspection. The landowner stated that recommended application rates will be followed.

**Photos:** No

**Corrective or remedial actions needed:** All pesticides, herbicides and related materials (e.g., fungicides) must be used and applied consistent with product labeling. When present, these chemicals should be stored within enclosed buildings in such a way they cannot enter or be released into surface or ground waters.

To verify conformance with this Standard Condition, you are required to keep records of the type, timing and volume of pesticides, herbicides and related chemicals that are applied your operations. This can be done using a simple log form, such as the one included in Appendix F.

Additionally, for any pesticide use you must comply with any Pesticide Registration Requirements. See Appendix E2 included in the NCRWQCB Order, or on their web site at:

[http://www.waterboards.ca.gov/northcoast/board\\_decisions/adopted\\_orders/pdf/2015/150728\\_Appendix\\_E2\\_DPR\\_MJ%20Pesticide%20Handout.pdf](http://www.waterboards.ca.gov/northcoast/board_decisions/adopted_orders/pdf/2015/150728_Appendix_E2_DPR_MJ%20Pesticide%20Handout.pdf)

#### 4.9 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.*

**Meets condition?** No

**Observations/Comments:** PWA noted that diesel storage tanks were exposed to the element. While large fuel storage tanks have secondary containment, because they were not stored properly, under protective cover, during PWA's last site visit, the secondary containment vessels were full of water at. Additionally, some smaller fuel cans were stored out in the elements and/or near road bed gullies with delivery potential to local streams in the event of a spill. These small fuel cans were not equipped with secondary containment basins. Note that when any petroleum products and other liquid chemicals are onsite they will need to be stored under cover, off the ground and in a secondary containment basin (tote, tub, etc.) capable of containing the entire stored volume.

**Photos:** Photo 41, Photo 42, Photo 43, Photo 44, and Photo 45, MP #22

**Corrective or remedial actions needed:** Place all generators, fuel cans and other petroleum containers, gasoline powered water pumps and any other items containing petroleum products or liquid chemicals under cover and off the ground and in a secondary containment basin (tote, tub, impermeable basin/floor etc.) capable of containing a minimum of 110% the entire stored volume.

- 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.*

**Meets condition?** No

**Observations/Comments:** See Standard Condition 4.9a observations and comments, above.

**Photos:** See Standard Condition 4.9a Monitoring Points and photos, above.

**Corrective or remedial actions needed:** See Standard Condition 4.9a corrective actions, above. Note that once any petroleum products or liquid chemicals are onsite they will need to be stored under cover, off the ground, and in a secondary containment basin (tote, tub, impermeable basin/floor, etc.) capable of containing 110% of the entire stored volume.

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

**Meets condition?** Yes

**Observations/Comments:** No diked areas were observed on the Project Site.

**Photos:** No

**Corrective or remedial actions needed:** None

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

**Meets condition?** No

**Observations/Comments:** No spill prevention cleanup kit is kept onsite to help clean up small spills.

**Photos:** No

**Corrective or remedial actions needed:** Obtain spill prevention cleanup kits as necessary and keep readily available to clean up small spills. Spill kits should be located where fuel is stored and refueling occurs.

- 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.*

**Meets condition?** Yes

**Observations/Comments:** No underground storage tanks were observed on the Project Site.

**Photos:** No

**Corrective or remedial actions needed:** None

**Standard Condition #9 - General comments and recommendations:** Store all fuel cans petroleum containers, generators, gas powered water pumps and other petroleum products or liquid chemicals in adequate secondary containment basins. Note that when any other petroleum products or liquid chemicals are onsite they will need to be stored under cover, off the ground and in a secondary containment basin (tote, tub, etc.). Develop a Hazardous Material Business Plan (HMBP) for the Project Site.

The State of California requires an owner or operator of a facility to complete and submit a Hazardous Material Business Plan (HMBP) if the facility handles a hazardous material or mixture containing a hazardous material that has a quantity at any one time during the reporting year equal to or greater than:

- 55 gallons (liquids)
- 500 pounds (solids) or
- 200 cubic feet for compressed gas (propane) used for the cultivation operations.

If at any time during the year your operations exceed any one of these quantities, you need to prepare and file a HMBP for your operation. Information regarding HMBPs can be found at:

<http://ca-humboldtcounty.civicplus.com/DocumentCenter/Home/View/3224>.

Additionally, while it is not explicitly stated in the Order, please note that the Humboldt County Division of Environmental Health (HCDEH) also requires that anyone that has over 55 gallons or more of any petroleum liquid at any time of the year, including fuels and waste oil, develop a HMBP.

Do not store petroleum products and/or chemicals with fertilizers, soil amendments and/or pesticides/herbicides. See guidelines for hazardous material storage in Appendix G.

#### 4.10 Standard Condition #10. Cultivation-Related Wastes

- a) *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 groundwater.*

**Meets condition?** No

**Observations/Comments:** PWA noted that cultivation-related spoil materials, including spent potting soil, used pots and other cultivation-related waste materials, have been stored in close proximity to Class II and Class III streams in multiple locations on the Project Site. Spent potting soil has been piled on the outboard edge of the graded pad near the processing shed. One pile of spent potting soil was stored near the inboard edge of road bed where gulling and lack of road drainage features increases the delivery potential of nutrients to local streams during storm events. Potting soil in raised beds has the potential for leaching into groundwater if not tarped or heavily planted and maintained with cover crops over the wet season. Additional observations include organic waste in the form of twigs and stems discarded in the woods.

**Photos:** Photos 46, 47 and 48, MP-23.

**Corrective or remedial actions needed:** PWA recommends tarping and securing any bulk or spent soils with appropriate BMPs. Organic waste product must be either composted on the property, or removed to a hazardous materials facility. PWA also recommends removing any used potting soil, used pots and other cultivation-related waste materials located near streams or surface waters and storing the material in a stable and appropriate spoil location outside of riparian buffer zones. Install straw wattles or another effective BMP to control delivery if leaching and runoff potential exists until such time as these items can be relocated. Ensure that any spoil locations have no potential for sediment delivery and implement appropriate BMPs as necessary. Properly store and contain all organic cultivation-related waste material located on the Project Site and dispose of appropriately by either composting on site or by taking material to an appropriate waste disposal facility.

#### **4.11 Standard Condition #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.*

**Meets condition?** No

**Observations/Comments:** The Project Site has an unpermitted Onsite Wastewater Treatment System (OWTS) for the main house and an additional septic tank for the lower drying shed.

**Photos:** Photos 49 and 50

**Corrective or remedial actions needed:** According to the Order a permitted and approved septic system is required.

1. In March of 2016 percolation testing for both a primary and reserve leachfield were conducted on this property. Upon request PWA can design an appropriate OWTS. Until such time contract with a service provider to install and service one or more portable toilet(s) for use by people who live, work or visit the Project

Site until a permitted OWTS has been installed and approved by HCDEH or the existing system is retroactively permitted. Keep servicing records for possible inspection.

- 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.*

**Meets condition?** Yes

**Observations/Comments:** The garbage and refuse located on the Project Site at the time of the PWA site inspection did not pose a threat to receiving waters.

**Photos:** No

**Corrective or remedial actions needed:** Continue to store all garbage and refuse in lidded cans at a safe and secure location where the threat to receiving waters is eliminated.

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

**Meets condition?** Yes

**Observations/Comments:** The Project Site was relatively clean at the time of PWA's inspection.

**Photos:** Photo 51

**Corrective or remedial actions needed:** PWA recommends that the client continue to dispose of existing garbage and refuse in a timely manner and at an approved waste disposal facility.

#### **4.12 Standard Condition #12. Remediation/Cleanup/Restoration**

- a) *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 the NCRWQCB Order, (and Appendix A in your WRPP), 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.*

*These protection and mitigation measures have been developed to prevent or reduce the environmental impacts and represent minimum, enforceable standards by which cleanup activities shall be conducted under this Order.*

**Meets condition?** Yes

**Observations/Comments:** See general comments below.

**Photos:** No

**Corrective or remedial actions needed:** None

**Standard Condition #12 - General comments and recommendations:** It is PWA's opinion that the Project Site is currently compliant with this condition. All needed corrective actions are addressed in Standard Conditions 1 through 11.



**5.0 PRIORITIZED CORRECTIVE ACTIONS AND SCHEDULE TO REACH FULL COMPLIANCE**

The following check list should be followed to become fully compliant with the Order. Please see the detailed comments and recommendations above for a more complete description of the problems and the needed corrective actions and monitoring requirements.

Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations	Monitoring Point and Photo #	Date Completed
1 – Site Maintenance, Erosion Control and Drainage Features 1 a, b, c, d, e	High	Oct. 15, 2020	<ul style="list-style-type: none"> <li>- Install road drainage features at the locations shown on Figure 2.</li> <li>- In addition to the locations shown on Figure 2, install appropriate road drainage features at any location where concentrated road runoff and gullying is observed.</li> <li>- Typical drawings included in Appendix H will provide guidance for proper road drainage feature construction.</li> </ul>	MP #1: Photo 1 MP #2: Photo 2 MP #3: Photo 3 MP #4: Photo 4 MP #5: Photo 5 MP #6: Photo 6 MP # 18: Photo 29	
2 – Stream Crossing Maintenance 2a, b, c, d, e, f	High	Oct. 15, 2020	<ul style="list-style-type: none"> <li>- PWA recommends upgrading the stream crossings listed in Standard Condition 4.2: Table 1, with properly sized culverted crossings to ensure conveyance of flow and debris, to prevent plugging associated with the expected 100-year peak stream flow.</li> <li>- PWA also recommends conducting regular inspections and maintenance of stream crossings to ensure conveyance of flow and debris, to prevent plugging and to monitor the potential for erosion before, during and after treatment of these stream crossings.</li> <li>- Perform adequate maintenance on all stream crossings to prevent or minimize erosion following appropriate BMPs listed in Appendix A.</li> <li>- Upgrade the stream crossings mentioned above should be properly installed with culverts that are horizontally aligned with the natural stream channel and vertically aligned with the natural channel grade.</li> <li>- When upgrading the stream crossings, dip the road or construct a critical dip on the downslope hinge line of the stream crossing to prevent stream diversion in case of a plugged culvert or exceptionally high flood flow.</li> </ul>	MP #7: Photo 7 & 8 MP #8: Photo 9 & 10, MP #9: Photo 11 & 12 MP #10: Photo 14 & 15 MP #11: Photos 16 & 17 MP #12: Photo 18 MP #13: Photo 19 MP #14: Photo 20, 21 & 23 MP #15: Photo 22 & 23 MP #19: Photo 29.	

Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations	Monitoring Point and Photo #	Date Completed
	High	Prior to any stream crossing work	Obtain all necessary agreements and permits prior to commencing work in any watercourse or at any stream crossing. These may include, but not be limited to: California Department of Fish and Wildlife (CDFW) Lake and Streambed Alteration Agreement (LSAA) 1602 and State Water Resource Control Board 401 permit and if required Army Corps of Engineers (ACOE) 404 Permit.	--	
3 – Riparian and Wetland Protection and Management	High	Oct. 15, 2020	Under the Order, all cultivation areas and associated facilities that are located within 50-feet of a Class III watercourse or wetland, or within 100-feet of a Class I or Class II watercourse, are required to be removed from the buffer area, and the site is to be restored. <b>NOTE: Before you remove or move cultivation areas and/or associated facilities, as listed below, you should read Section 4.3 – General Comments and recommendations, above. If you are applying for a County Land Use permit for commercial cultivation, the date at which these must be moved out of the buffer zone may be temporarily postponed and other temporary treatments maybe required. These are listed and described in Section 4.3, above.</b> - Relocate the items mentioned in Standard Condition Section 4.3a observations and comments, above, to a suitable location outside of the 50-foot riparian setback required for a Class III stream (Figure 2). <b>Pull back all unstable fill along the outboard edge of roadway.</b> Improve road drainage so that water does not drain onto unstable slope.	MP #16: Photo 23; MP #17: Photos 24 & 25; MP-18; Photos 26, 27 & 28.	
4 – Spoils Management	High	Oct. 31, 2020	Improve road drainage so that water does not drain onto unstable slope.	MP #19: Photo 29	
	High	Oct. 15, 2018	Refine the preliminary Water Budget for the Project Site to more accurately determine annual water needs and, if necessary, required storage volumes needed for forbearance from April 1st - October 31 <sup>st</sup> .	--	
5 – Water Use	Moderate	Oct. 15, 2019 and then annually	-Under the Order, you are required to measure, document and report the water you divert, store and use throughout the year. Develop and implement a Water Monitoring Plan using the simple log sheet provided in Appendix D. The water data for this Project Site is required to be reported to the Water Board for the calendar year. - PWA highly recommends, and state agencies may require, that you install flow meters on your surface water diversions, and on water tanks / distribution lines, to accurately document the timing and volume of your water diversion and use. - Refine the water budget using water monitoring data as it is collected during the year.	--	

Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations	Monitoring Point and Photo #	Date Completed
5b	High	Dec. 31, 2019 or as soon as possible	Install a shut off float valve on the overflowing 3,000-gallon water tank near SC #5 and on all water tanks where needed to eliminate overflow and improve water conservation.	MP #20, Photo 35	
5b	Moderate	Oct. 31, 2019 and continuing	Investigate and implement additional water conservation measures to minimize surface water diversion and use. These include volume-limited or timed and programmable drip irrigation systems, incorporating water holding amendments and native soil during the initial soil preparation at the start of the season, surface mulching or planting beds to minimize evaporation, and planting plants in the ground instead of above ground pots. Additional rainwater harvesting during the wet season should be evaluated and employed to limit or completely eliminate surface water diversions during the dry season.	Photo 31 MP #20, Photo 35	
5c	Moderate	Oct. 31, 2019	Develop and refine a Water Budget for your Project Site to determine if sufficient off-stream water storage volumes exist for all your water needs during the dry season. A preliminary analysis suggests additional off-stream water storage may not be needed. Increased water storage may be recommended depending upon the results of the Water Budget to limit diversion of surface flow to the winter months and completely eliminate diversions needed for irrigation activities during the dry season from April 1 <sup>st</sup> through October 31. Investigate and decide if multiple rigid tanks and/or one or more additional off-stream ponds will be added and begin the process of siting and design of additional water storage.	--	
5d	Moderate	Oct. 31, 2019	To verify conformance with this Standard Condition, start measuring and recording your water usage using flow meters on a per plant basis, based on type and size of plant pot, full term versus short season (light deprivation) plant, and type of irrigation. Observe and monitor soil moisture so watering, fertilizer and chemical applications are made only when necessary and overwatering and excess infiltration is avoided.	--	
5e	Moderate	Oct. 31, 2019	As opposed to employing one or more surface water diversions and securing various water rights, consider and develop a plan to obtain irrigation water by developing rainwater capture systems to fill rigid water tanks and/or one or more off-stream, rainwater-fed ponds.	--	
5e	High	ASAP	For all surface water diversions for you should obtain a Small Irrigation Use Registration (SIUR) for your agricultural water needs.	--	



Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations	Monitoring Point and Photo #	Date Completed
5e	Moderate	Report annually by June 30 & by March 31	<ul style="list-style-type: none"> <li>-Submit annual water use volumes to the State Water Resources Control Board, Division of Water Rights (SWRCB-DWR) by June 30 of each year.</li> <li>-Submit water diversion and water use data to the NCRWQCB annually by March 31 for the previous calendar year.</li> </ul>	--	
	High	ASAP	<ul style="list-style-type: none"> <li>- Have the pond inspected by a certified engineer to determine stability and provide treatment recommendations if necessary.</li> <li>- The pond may need to be assessed by CDFW.</li> </ul>	--	
7a	High	Ongoing	<p>When not being used on the planting beds or in greenhouses, all fertilizers, soil amendments, potting soils and compost shall be stored within a water tight building or covered area not exposed to the elements or, if stored outdoors, fully tarped in a stable location with no chance of nutrient leaching or delivery to surface waters. Cover crops or native grasses should be planted at these areas to utilize any remaining nutrients. Install straw wattles or implement other appropriate containment BMPs where necessary to contain any mobilized nutrients at the locations listed above and elsewhere on the Project Site.</p>	Photo 39 MP #22: Photo 40	
	Moderate	Ongoing	<ul style="list-style-type: none"> <li>-To confirm compliance with this Standard Condition, you must keep detailed records of the type, timing and amount of fertilizers and/or other soil amendments you use in your operations. They can be recorded on log sheets such as those provided in Appendix E.</li> <li>- Observe and monitor soil moisture so watering, fertilizer and chemical applications are made only when necessary and overwatering and excess infiltration is avoided.</li> </ul>	--	
8 -- Pesticides and Herbicides	Moderate	Ongoing	<ul style="list-style-type: none"> <li>- To verify conformance with this Standard Condition, you are required to keep track of the type, timing and volume of pesticides, herbicides and related chemicals that are applied in your operations. This can be done using a simple log form, such as the one included in Appendix F.</li> <li>- All pesticides, herbicides and related materials (e.g., fungicides) must be used and applied consistent with product labeling.</li> <li>-When present, these chemicals should be stored within enclosed buildings in such a way they cannot enter or be released into surface or ground waters.</li> </ul>	--	

Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations	Monitoring Point and Photo #	Date Completed
9 – Petroleum Products and Other Chemicals	9a, b	ASAP	<ul style="list-style-type: none"> <li>- Place all generators, fuel cans and other petroleum containers, gasoline powered water pumps and any other items containing petroleum products or liquid chemicals under cover and off the ground and in a secondary containment basin (tote, tub, impermeable basin/floor etc.) capable of containing the entire stored volume.</li> <li>- Do not store petroleum products and/or chemicals with fertilizers, soil amendments and/or pesticides/herbicides. See guidelines for hazardous material storage in Appendix G.</li> </ul>	MP #23, Photo 41, Photo 42, Photo 43, Photo 44, and Photo 45	
	9d	ASAP	Obtain spill prevention cleanup kits as necessary and keep readily available to clean up small spills. Spill kits should be located where fuel is stored and refueling occurs.	--	
	9	ASAP	Develop a Hazardous Material Business Plan (HMBP) for the Project Site.	--	
10 – Cultivation-Related Wastes	High	Dec. 31, 2017 or sooner if possible	<ul style="list-style-type: none"> <li>- Immediately remove the spent potting soil pile at the outboard edge of the graded pad.</li> <li>- Remove any used potting soil, used pots and other cultivation-related waste materials located near streams or surface waters and storing the material in a stable and appropriate spoil location outside of riparian buffer zones.</li> <li>- Install straw wattles or another effective BMP to control delivery if leaching and runoff potential exists until such time as these items can be relocated.</li> <li>- Ensure that any spoil locations have no potential for sediment delivery and implement appropriate BMPs as necessary.</li> <li>- Either 1) fully tarp or otherwise cover spent plant stalks, root balls, soil piles and potted spent soils during the wet season to prevent soil from being transported to surface waters or leaching nutrients into the native soil and groundwater, or 2) remove all spent soils at the end of the growing season and store the materials indoors or undercover during the off-season.</li> </ul>	MP #22; Photo 40 MP #24; Photo 46, Photo 47 & 48.	
			11a	High	Oct. 31, 2020

## 6.0 MONITORING AND INSPECTION PLAN

Under the Order, sites are required to be monitored and inspected periodically to ensure conformance with the 12 Standard Conditions. In most cases, inspections and records of inspections identify conditions that have been corrected and are now in compliance; conditions that remain in compliance; and conditions that have changed and may no longer be in compliance with the Order. An inspection and monitoring plan is used to document these conditions, identify problems and make corrections using best management practices (BMPs) to protect water quality (Appendix A).

Monitoring Plan – Please refer to Appendix B and Figure 2 to review the monitoring plan and specific monitoring points for which you are responsible.

Monitoring guidelines and reporting standards have been created by the NCRWQCB as part of the Order. Monitoring of the Project Site includes visual inspection and photographic documentation of each feature of interest listed on the Project Site map, with new photographic documentation recorded with any notable changes to the feature of interest.

Site inspection schedule - According to the NCRWQCB, periodic inspections should include visual inspection of the site, including any management measures/practices, to ensure they are being implemented correctly and are functioning as expected. Inspections include photographic documentation of any controllable sediment discharge sites, as identified on the site map, and a visual inspection of those locations on the site where pollutants or wastes, if uncontained, could be transported into receiving waters, and those locations where runoff from roads or developed areas drains into or towards surface water.

At a minimum, sites shall be inspected 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 or minimize discharges of waste or pollutants to surface water:

- 1) Before and after any significant alteration or upgrade to a given stream crossing, road segment, or other controllable sediment discharge site. Inspection should include photographic documentation, with photo records to be kept onsite.
- 2) Prior to October 15<sup>th</sup> to evaluate site preparedness for storm events and stormwater runoff.
- 3) Following the accumulation of 3 inches cumulative precipitation (starting September 1<sup>st</sup>) or by November 15<sup>th</sup>, whichever is sooner.
- 4) Following any rainfall event with an intensity of 3 inches precipitation in 24 hours. Precipitation data can be obtained from the National Weather Service by entering the site zip code at <http://www.srh.noaa.gov/forecast>; Pick the nearest or most relevant zip code and then select the 3 day history that will also show precipitation totals.

Inspection and Monitoring Checklist – Appendix B contains a checklist data form that will be used by the landowner and/or operator to: 1) document inspection dates, 2) document visual and photographic inspection results, 3) describe remediation and management measures that are being applied, 4) identify new problems and their treatments, and 5) document the progress and effectiveness of implementing remedial and corrective measures that are needed to meet the 12 Standard Conditions, as outlined in this WRPP. Appendix C contains photo documentation of your monitoring points and will need to be updated as corrective treatments are implemented and



treatments are monitored and evaluated over time.

Annual Reporting – An Annual Report is to be submitted directly to the NCRWQCB or to PWA (through our 3<sup>rd</sup> Party Program). The information in the annual reporting form must be submitted by March 31<sup>st</sup> of each year. The reported information is to be reflective of current site conditions, and includes monitoring data and tasks accomplished to protect water quality. Among other things, the report includes such items as the reporting of monthly monitoring data collected during the year (e.g., chemical use, water diversions, water storage, water use, etc.), management measures (BMPs) applied during the year and their effectiveness, and tasks accomplished during the year towards meeting each of the 12 Standard Conditions identified as deficient in this WRPP.

## 7.0 WATER USE PLAN

Requirements - According to the Order, a Water Use Plan (WUP) shall record water source, relevant water right documentation, and amount used monthly. All water sources shall be recorded, including alternative sources such as rain catchment and groundwater, and/or hauled water. Other elements of the WUP will include:

- Developing a Water Budget for determining the timing and volume of actual water use on the site. Water related data will be summarized monthly for the preceding month.
- Designing and implementing water conservation measures to reduce water diversion and water use.
- Calculating water storage requirements needed to support cultivation activities during the dry season, and implementing those required storage measures.

The Water Use Plan must also describe water conservation measures and document your approach to ensure that the quantity and timing of water use is not impacting water quality objectives and beneficial uses (including cumulative impacts based on other operations using water in the same watershed). Water use will only be presumed to not adversely impact water quality under one of the following scenarios:

- No surface water diversions occur from May 15<sup>th</sup> to October 31<sup>st</sup>.
- Water diversions are made pursuant to a local plan that is protective of instream beneficial uses.
- Other options that may affect water quality: (e.g., percent of flow present in stream; minimum allowable riffle depth; streamflow gage at bottom of Class I stream; AB2121 equations; CDFW instream flow recommendations; promulgated flow objective in Basin Plan; etc.).

Site Water Use Plan -The record of activities, accomplishments and water monitoring results for the Water Use Plan for this site will be logged and recorded in data tables and site records (data forms) included in Appendix D of this WRPP. These will be tracked and kept up-to-date by the landowner or cultivator of the site.

*Water Storage and Forbearance* – The ultimate goal of the applicant is to accumulate enough water storage capacity to forebear the entire period from April 1<sup>st</sup> to October 31<sup>st</sup> each year. Under the Order, this will ensure the timing of water use is not impacting water quality objectives and beneficial uses. There is an estimated 150,000-gallons or more of water storage in rigid tanks and

an off-stream pond currently on the Project Site. Based on the size of the cultivation area (15,000 ft<sup>2</sup>) it appears that there is marginal storage to avoid surface water diversion during the dry season from April 1<sup>st</sup> through October 31<sup>st</sup>. Water use estimates from the Humboldt County Planning and Building Department suggests that adequate storage does not currently exist on the Project Site. These estimates suggest that 14 gallons of water is needed for every square foot of cultivation and, based on the existing cultivation area of 15,000 ft<sup>2</sup>, a total of 210,000 gallons of storage would be needed to observe the 195 day forbearance period. Using these estimates, the current amount of water storage (150,000-gallons, plus) is not adequate for the size of the operation. Rough water use estimates provided by the client, however, suggest that approximately 71% (150,000-gallons) of what the Humboldt County numbers require is needed for irrigation activities on the Project Site. Regardless, the preliminary water budget will need to be refined to quantify the additional water storage that may be required to completely observe the forbearance period and not divert surface waters during the dry summer season.

*Water Conservation* – Water conservation measures currently practiced include controlled hand watering and drip irrigation. Starting this year, new water conserving techniques and equipment should be utilized, such as rainwater harvesting and incorporating water holding amendments or native soil in the growing media during the initial soil preparation at the start of the season. PWA further recommends designing and implementing rainwater harvesting and investigating the feasibility of developing an off-stream pond or adding more rigid water tanks that can be filled through rainwater harvesting during the winter season.

*Water sources and use* – Three stream diversions, both on a Class III watercourse (POD #1, POD #2; Figure 2) are used for domestic and irrigation purposes. Additionally a spring (POD#3) and a rainwater fed off-stream pond is used for irrigation purposes. Additional rainwater harvesting should be evaluated and employed where possible to limit or eliminate surface water diversion during the dry season.

At this time, the client has a rough estimate of the amount of water that is used monthly and annually on this Project Site for irrigation purposes. It appears that additional water storage may not be needed to forbear during the dry season. It will be important for you to keep accurate records of the surface water you divert, store and use to determine the additional storage volume needed for the size of the operation, and so this water data can be reported each year, as required by the NCRWQCB and SWRCB-DWR. The more frequently and accurately water use is recorded, the better you will understand the water uses and needs of your farm, the value of water conservation, and the volume of water storage that is needed for you to forbear (not divert) during the dry summer growing season.

Over the course of the current and future season, water use should be documented using the log forms supplied to you by PWA, attached in Appendix D. The landowner will apply for additional water rights for the existing diversion as needed and CDFW will be contacted for the required LSAA agreement.

## **8.0 LIST OF CHEMICALS**

The WRPP must contain a list of chemicals being stored onsite, in addition to quantities used and frequency of application. These include fertilizers/soil amendments, pesticides, herbicides,

fungicides, petroleum products and other chemicals used in, or associated with, your cultivation activities and related operations.

Appendixes E and F contain monitoring forms that should be used to list the chemical inventory record over time, as supplies are added to the site and used during the growing season. The landowner or operator will use these forms to track the types, storage volumes, timing of application, and volume of use of these products throughout the year. The initial chemicals and amendment list that may be used and stored onsite include:

Fertilizers and Amendments:

See Appendix E.

Pesticides, Herbicides, and Fungicides:

See Appendix F.

Petroleum and Other Chemicals:

Gasoline

Diesel

Propane



**9.0 LANDOWNER/LESSEE CERTIFICATION/SIGNATURES**

This Water Resource Protection Plan (WRPP) has been prepared by Pacific Watershed Associates, an approved Third Party Program acting on behalf of the North Coast Regional Water Quality Control Board (NCRWQCB).

“I have read and understand this WRPP, including Section 2.0 – Certifications, Conditions and Limitations. I agree to comply with the requirements of the California Regional Water Quality Control Board North Coast Region Order No. 2015-0023 (Waiver of Waste Discharge Requirements and General Water Quality Certification for Discharges of Waste Resulting from Cannabis Cultivation and Associated Activities or Operations with Similar Environmental Effects in the North Coast Region), including the recommendations and actions listed in this WRPP.”

Name of Legally Responsible Person (LRP): \_\_\_\_\_

Title (owner, lessee, operator, etc.): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

WRPP prepared by (if different from LRP): **Pacific Watershed Associates, Inc.**

WRPP prepared and finalized on (date): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_