



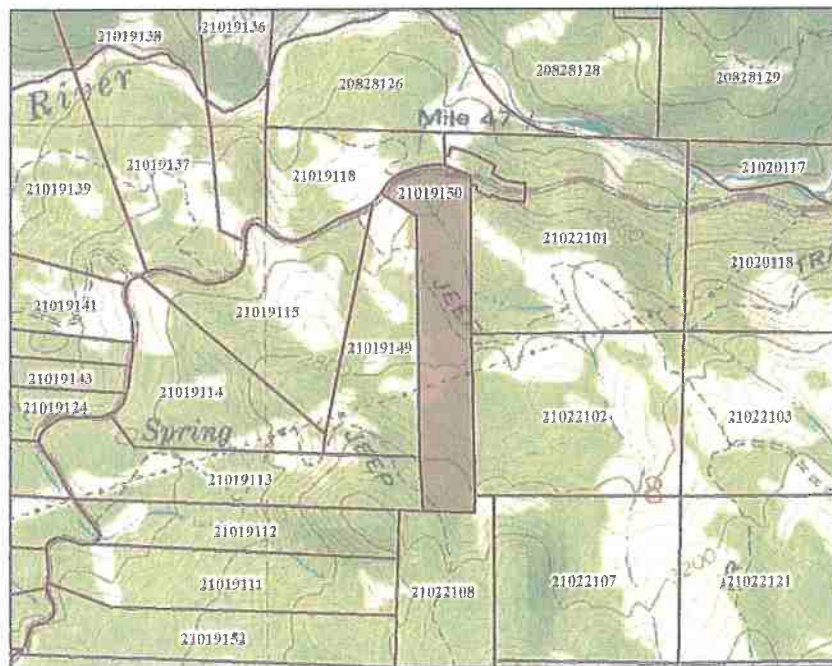
## Water Resource Protection Plan (WRPP)

*for*

APN 210-191-050

*Located off*  
State Highway 36  
Bridgeville, California

May, 2017



*Prepared for:*

WD ID #1B161251CHUM  
PWA ID #18010105070351750  
State Highway 36  
Bridgeville, California

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**Water Resource Protection Plan (WRPP)**  
**APN 210-191-050**  
**State Highway 36**  
**Bridgeville, California**

## **1.0 PROJECT SUMMARY**

This report documents Pacific Watershed Associate's (PWA)<sup>1</sup> Water Resource Protection Plan (WRPP) for APN 210-191-050 located off State Highway 36, Bridgeville, California as shown on Figure 1. This property is located approximately 8.2 miles east of Bridgeville, 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"). Properties 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 April 19, 2016 by PWA Geologists Courtney Sundberg and Jack Skeahan.

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

This WRPP has been prepared by, or under the responsible charge of, a California licensed professional geologist or engineer 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 time of our inspection; 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 we have described the current conditions of the property and any water resource and water quality risk factors we observed at the time of our 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 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

<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").



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.

Prepared by:



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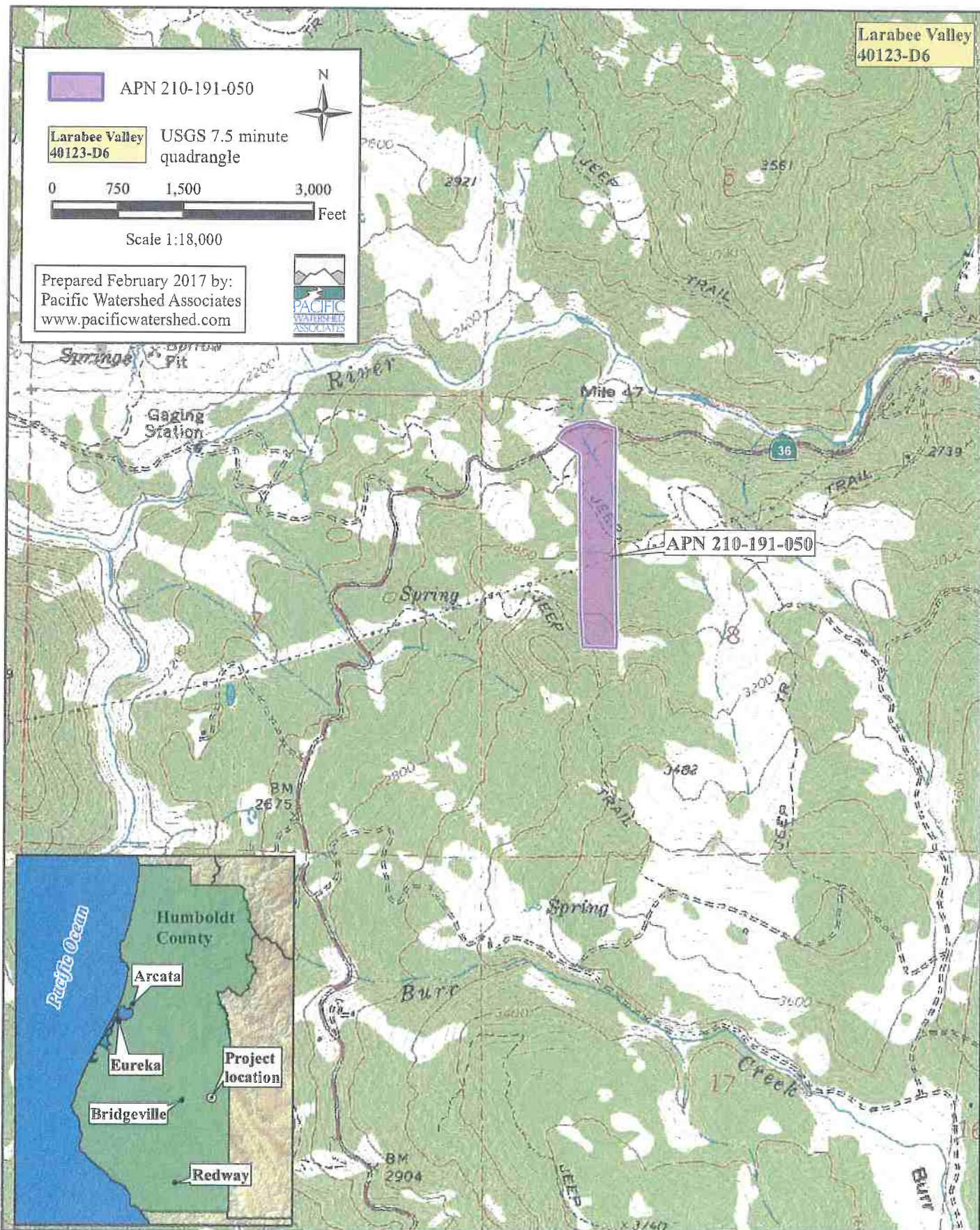


Figure 1. Location map for WDID #1B161251CHUM, APN 210-191-050, located off State Highway 36, Bridgeville, Humboldt County, California.



### 3.0 INTRODUCTION

This Water Resource Protection Plan (WRPP) summarizes the results of Pacific Watershed Associate's (PWA) site visit and subsequent analysis and documentation of site conditions on APN 210-191-050 located off State Highway 36, Bridgeville, 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 210-191-050 as of 4/19/2016

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:** One of the two roads on the Project Site have ruts and gullies due to road segments lacking appropriate drainage features such as adequate outsloping, rolling dips and ditch relief culverts (DRC). Access Road #1 has sections of road that concentrate runoff on the road surface and deliver sediment to a Class III stream at Stream Crossing #1 (SC #1, Figure 2). A section of the southern end of Access Road #1 that leads to the water bladder is steep and more characteristic of a skid road. Other roads on the Project Site exhibited minor surface erosion although sediment delivery to surface waters was not observed.

**Photos:** MP #1: Photo 1.

**Corrective or remedial actions needed:** Access Road #1 requires the installation of road drainage features to disconnect surface runoff. Install a rolling dip on Access Road #1 approximately 90 feet to the left of SC #1. A second rolling dip should be installed on Access Road #1 at the intersection with Access Road #2. This rolling dip should be installed so as to convey road runoff into the low gradient area upslope of Cultivation Area #1 (CA #1) where the potential for erosion and sediment delivery to surface waters does not exist.

Water bars should be installed on the steep segment of Access Road #1 leading to the water bladder at 50-foot spacing intervals. Also see Figure 2 for proposed road drainage feature locations. These will need to be maintained and reinstalled annually before each winter period.

The installation of these rolling dips and water bars are intended to disconnect concentrated surface runoff that results in sediment delivery to surface waters at SC #1. Ensure that the construction and outlet location of drainage features allow dispersal and infiltration of collected road runoff. Install additional drainage features with adequate spacing intervals at any location where concentrated road runoff and gullying is observed. Typical drawings included in Appendix H will provide guidance for proper rolling dip and water bar 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:** See 4.1a observations and comments, above.

**Photos:** See 4.1a Monitoring Point and photo, above.



**Corrective or remedial actions needed:** See 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?** Yes

**Observations/Comments:** Concentrated road surface runoff was not observed to drain toward any potentially unstable slopes or earthen fills.

**Photos:** No

**Corrective or remedial actions needed:** None

- 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:** See 4.1a observations and comments, above.

**Photos:** See 4.1a Monitoring Point and photo, above.

**Corrective or remedial actions needed:** See 4.1a 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 4.1a observations and comments, above.

**Photos:** See 4.1a Monitoring Point and photo, above.

**Corrective or remedial actions needed:** See 4.1a 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:** No stockpiled construction materials were observed on the Project Site with delivery potential to receiving waters.

**Photos:** No

**Corrective or remedial actions needed:** None

**Standard Condition #1. - General comments and recommendations:** Approximately 0.29 miles of road was inspected on the Project Site, comprised of a mid-slope main road and a short access road. All roads occupy a mid-watershed location and both the main road and short access road exhibit surface erosion issues caused by a lack of road drainage structures and inadequate maintenance.

#### 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:** The two stream crossings on the Project Site have been constructed with culverts that are undersized to pass the expected 100-year peak streamflow (Figure 2). Two 15-inch diameter culverts and a 12-inch diameter culvert have been installed at SC #1 for the instream pond spillway. Two 18-inch diameter culverts have been installed at SC #2. Based on drainage area calculations, both stream crossings should be upgraded to 36-inch diameter culverts or multiple 24-inch diameter culverts to achieve equivalent capacity without significantly raising the road bed.

**Photos:** MP #2: Photo 2. MP #3: Photo 3a and 3b.

**Corrective or remedial actions needed:** Due to the likelihood of having to import fill to accommodate a 36-inch diameter culvert, PWA recommends upgrading SC #1 with three 24-inch diameter culverts installed side by side to pass the expected 100-year peak streamflow. This stream crossing design will allow the pond outlet to remain at its current elevation without changing pond volume or significantly increasing the height of the road bed. This stream crossing should be designed by a licensed engineer to ensure stability of the pond spillway upon rebuild. PWA recommends conducting a property line survey to determine whether SC #2 is within the Project Site boundary and whether it is the client's responsibility to address this stream crossing. If this stream crossing is determined to be the client's responsibility, PWA recommends decommissioning SC #2 by removing the two 18-inch diameter culverts and fully excavating the road fill and aggraded sediment upstream of the crossing down to the natural channel grade. 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), and the California Salmonid Stream Habitat Manual, Part X (Weaver et al., 2006).

- 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:** The two stream crossings on the Project Site have been constructed with culverts that are undersized to address debris associated with the expected 100-year peak streamflow (Figure 2). In addition to being undersized, the installation of side by side culverts lacking trash racks at the stream crossings does not allow efficient passage of debris and increases plugging potential.

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

**Corrective or remedial actions needed:** Upgrade SC #1 with three 24-inch diameter culverts and an appropriately designed stream crossing to address debris associated with the expected 100-year peak streamflow. Multiple trash racks should be installed upstream of the inlet to address debris associated with the 100-year peak streamflow. These trash racks should be installed 24 inches upstream of the culvert inlets and



spaced 24 inches apart horizontally (Appendix H). If it is determined to be the client's responsibility, PWA recommends properly decommissioning SC #2.

- 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?** Yes

**Observations/Comments:** The two stream crossings on the Project Site have been installed on an ephemeral stream.

**Photos:** No

**Corrective or remedial actions needed:** None

- 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?** Yes

**Observations/Comments:** Erosion has been observed at the outlets of SC # 2 however this was due to the culverts being installed high in the road fill. It did appear that adequate maintenance was being performed to prevent or minimize erosion.

**Photos:** No

**Corrective or remedial actions needed:** Continue to monitor and perform adequate maintenance as needed to prevent or minimize erosion following appropriate BMPs listed in Appendix A.

- 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 culverted stream crossings on the Project Site are not installed at grade but appear to be horizontally aligned with the natural stream channel. The culverts at SC #1 are installed above the natural channel grade to allow for sufficient depth and storage of pond water for irrigation. Upgrading of SC #1 to install a culvert at the natural stream grade may ultimately result in decommissioning of the instream pond or rendering the pond as a water source unusable. The instream pond is currently the only source of water for the Project Site.

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

**Corrective or remedial actions needed:** If the instream pond is to be continued as a water source, SC#1 will need to be upgraded with three 24-inch diameter culverts installed side by side to provide for sufficient water storage in the instream pond while maintaining adequate culvert capacity. The outlets of the newly installed culverts should be aligned along the existing channel grade. If SC #2 is determined to be the client's responsibility, PWA recommends properly decommissioning the stream crossing and excavating all road fill and aggraded sediment upstream of the crossing down to the natural channel grade.

- 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?** Yes

**Observations/Comments:** The two stream crossings on the Project Site (SC #1 and #2) do not have diversion potential.

**Photos:** No

**Corrective or remedial actions needed:** When SC #1 is upgraded, ensure that the newly installed crossing does not create diversion potential.

**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, State Water Resources Control Board (SWRCB) 401 Certification, and Army Corps of Engineers (ACOE) 404 Permit.

#### 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?** Yes

**Observations/Comments:** Cultivation areas and associated facilities on the Project Site are located outside of the 50-foot riparian setback required for a Class III stream (Figure 2). While CA #2 is slightly outside of the riparian buffer zone, due to its location upslope of the instream pond appropriate BMPs should be implemented at this location to mitigate potential threats to surface waters from the cultivation area. Aside from nutrient mobilization resulting from overwatering or potting soil left uncovered over the wet season, no impacts to water quality are expected. PWA did not observe any other impacts to riparian areas as part of cultivation activities on this parcel.

**Photos:** No

**Corrective or remedial actions needed:** It is PWA's opinion, based on the landscape management, watering techniques, and vegetated hillslope at this location that the cultivation area mentioned above does not currently threaten water quality. PWA recommends that appropriate BMPs be implemented to mitigate any potential threats to surface waters or shallow groundwater at this location. Straw wattles, straw bale barriers or a silt fence should be installed along the downslope edge of CA #2 to prevent nutrient mobilization in the event of summer overwatering or surface runoff from during the wet season. PWA recommends monitoring this location to ensure no impacts to the riparian area occur.

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

**Meets condition?** Yes

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

**Photos:** No

**Corrective or remedial actions needed:** None



- 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:** See Standard Condition 4.3a observations and comments, above.

**Photos:** No

**Corrective or remedial actions needed:** None

- 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?** Yes

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

**Photos:** No

**Corrective or remedial actions needed:** None

#### 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:** Although stored potting soil exists at multiple locations on the Project Site, the potting soil is amended and reused and the potential for mobilization to surface waters was not observed.

**Photos:** No

**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 4.4a comment, above.

**Photos:** No

**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?** Yes

**Observations/Comments:** No spoils generated through development or maintenance of roads with the potential for delivery to surface waters were observed on the Project Site.

**Photos:** No

**Corrective or remedial actions needed:** None

#### 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:** Water used for irrigation is diverted from an instream pond (POD, Figure 2). Based on the 17,230 ft<sup>2</sup> cultivation area and the amount of water storage currently available (877,400 gallons) in water tanks, a water bladder and an instream pond, it appears that water storage generated during the rainy season is sufficient for the landowner to forbear (not divert) during the dry season. Since the pond is instream and it is not known at what time the Class III stream stops filling the pond, diversion from the pond during the forbearance period may be considered as stored water. However due to rough estimates of water use data and surface flow period of the Class III stream, it is not definitively known if the operation impacts water quality. A Water Budget needs to be developed and refined by water monitoring to determine if additional storage is needed and when use of water from the pond is not considered an active diversion during the dry season.

**Photos:** No

**Corrective or remedial actions needed:** A Water Budget should be developed to determine if sufficient water storage volumes are currently available on the Project Site for cultivation and other uses during low flow periods from May 15<sup>th</sup> through October 31<sup>st</sup>. A Water Monitoring Plan will also need to be implemented (see comments below) in which surface water diversion, storage and use for irrigation and other purposes is closely monitored and recorded. This water data will help you refine the water budget and the data will be reported annually to the NCRWQCB no later than March 31<sup>st</sup> for the preceding calendar year. PWA also recommends documenting the timing of flow both upstream and downstream of the pond to accurately determine when the instream pond can be classified as storage and not an active surface water diversion.

- 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?** No

**Observations/Comments:** Controlled hand watering is used on the Project Site for water conservation.

**Photos:** No

**Corrective or remedial actions needed:** Additional water conservation measures should continue to be investigated and employed to minimize surface water diversion and use. These include timed or volume-limited drip irrigation systems, irrigation scheduling (watering during the early morning and early evening), incorporating water holding amendments and native soil during the initial soil preparation at the start of the season, surface mulching or planting in beds to minimize evaporation, and planting



plants in the ground instead of above ground pots. Rainwater harvesting during the wet season should be evaluated and employed to limit or completely eliminate surface water diversions during the dry season. If needed, investigate the possibility of developing an off-stream pond that can be filled through rainwater harvesting during the winter season. PWA also recommends the installation of float shut off valves or similar devices on water storage vessels where necessary to prevent overflow, reduce water diversion and improve water conservation.

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

**Meets condition?** Unknown

**Observations/Comments:** Based on the total size of the cultivation area and existing instream pond and off-stream water storage (water tanks and bladder), it appears that adequate storage exists onsite to minimize or eliminate surface water diversions during the dry season. The need for additional water storage will be determined after the Water Budget has been developed and refined and the classification of the pond at different times of the year is determined. The timing of when the Class III stream ceases to fill the instream pond will help determine when the pond can be considered water storage as opposed to an active surface water diversion.

**Photos:** No

**Corrective or remedial actions needed:** Develop a Water Budget to verify that adequate off-stream storage exists on the Project Site to eliminate surface water diversion during the dry season. Document the timing of when the Class III stream ceases to fill the pond as described in Standard Condition 4.5a, above. If needed, investigate the possibility of developing an off-stream pond that can be filled through rainwater harvesting during the winter season. PWA recommends you discontinue and phase out the use of the large water bladder.

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

**Meets condition?** Unknown

**Observations/Comments:** According to the cultivator, water is applied sparingly due to water scarcity, though application was not observed due to the early 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:** The water used for irrigation on the Project Site is sourced from an instream pond (POD, Figure 2). A Small Domestic Use (SDU) registration and

an Initial Statement of Diversion and Use (ISDU) application for the surface water diversion is required to be submitted to the State Water Board.

**Photos:** No

**Corrective or remedial actions needed:** Water diversion and water storage requires valid water rights documentation. As opposed to employing one or more surface water diversions, irrigation waters could be secured by developing rainwater capture systems or drilling a well. However, if you plan to continue flow diversions for your agricultural water needs, you need to file and obtain water rights for your parcel, or provide other documentation of your legal water rights. Appropriate water rights applications to be filed with the State Water Resources Control Board (SWRCB) include:

- Initial Statement of Diversion and Use (ISDU)  
[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/diversion\\_use/docs/intl\\_stmt\\_form.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/diversion_use/docs/intl_stmt_form.pdf)

**Note:** the SWRCB is currently developing a small irrigation appropriation for this region. PWA recommends that you apply for this small irrigation water right as soon as it becomes available.

- 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:** A large water bladder has been placed on a relatively stable landing pad. Although the landing pad appears stable, there is no secondary containment berm in the event of a structural failure. The water bladder is also close to the edge of the landing pad and does not appear to be adequately secured to prevent mobilization (movement) in the event of a fillslope failure or seismic event. The water bladder is also directly upslope of multiple structures used on the Project Site, including travel trailers where people onsite may reside. In the event of a containment failure the location of the water bladder will likely allow discharge into waters of the state in addition to significant erosion and sediment delivery. The threat to workers and structures onsite also exists in the event of a containment failure or downslope mobilization of the water bladder itself. The two water storage tanks located on the Project Site are sited on a stable slope far from any streams making it unlikely that water tank structural failures could result in delivery of runoff and eroded sediment to the stream network.

**Photos:** MP #4: Photo 4a and 4b.

**Corrective or remedial actions needed:** PWA recommends constructing an engineered berm to provide sufficient secondary containment for the water bladder in the event of failure or rupture of the bladder. This containment berm should be designed by a licensed engineer. An adequate restraining system to secure the water bladder should be installed until such time as the water bladder can be relocated or retired. Obtain all necessary permits prior to commencement of construction activities if estimated excavation/fill volumes will exceed 50 cubic yards. Monitor the water bladder and outboard fillslope for signs of instability, potential for mobility or future



erosion. PWA recommends transitioning away from the use of the water bladder towards rigid storage tanks and/or one or more rainwater-fed off-stream pond(s).

**Standard Condition #5 - General comments and recommendations:** Currently, the only source of water for irrigation use is from an instream pond (POD, Figure 2). There is 877,400 gallons of water storage capacity in hard plastic tanks, a large water bladder and an instream pond. At this time it appears that the water storage capacity contained within this Project Site appears to fully satisfy the demand that would be expected from the cultivation area (~17,230 ft<sup>2</sup>) during the dry season (May 15<sup>th</sup> through October 31<sup>st</sup>). A Water Budget will be developed and refined by water monitoring to verify that existing water storage is adequate for the operation. Based on water use estimates from the Humboldt County Planning and Building Department, adequate storage currently exists on the Project Site. These estimates suggest that 27 gallons of water is needed for every square foot of cultivation to observe the forbearance period. Based on the existing cultivation area of 17,230 ft<sup>2</sup>, 465,210 gallons of storage would be needed to observe the 150 day forbearance period. The current amount of water storage (877,400 gallons) appears more than adequate for the size of the operation. If the existing water storage or type (instream pond) is not sufficient for current operations and needs, then additional storage will need to be added so the diverter can completely forbear (not divert) during the dry season. In this way, as per the Order, it can then be assumed that water use will not impact downstream water quality or beneficial uses.

The water bladder should be fully enclosed within an engineered berm to prevent discharge in the event of a containment failure. Until such time as the water bladder is relocated, an adequate restraining system to prevent mobility of the water bladder is needed. Based on the location of the water bladder and the lack of an adequate restraining system it is highly recommended that the water bladder be relocated as soon as possible.

A LSAA will need to be submitted to the CDFW for the surface water diversion and prior to any stream crossing upgrading work.

Lake and Streambed Alteration Agreement (LSAA).  
<https://www.wildlife.ca.gov/Conservation/LSA>

PWA highly recommends, and state agencies may require, that you install flow meters on your surface water diversions, water tanks, water bladder, and on your distribution lines so you can accurately document the timing and volume of your water diversion, storage and use. You will need to document the amount of water that is diverted from the pond, stored in tanks and the water bladder, and used for irrigation through time. PWA has created a simple log sheet to help you monitor your water usage (see Appendix D).

#### 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. The eastern edge of CA #2 is located slightly outside of the riparian buffer zone of a Class III stream and has the potential to deliver nutrients to the stream in the event of severe overwatering. PWA recommends implementing BMPs mentioned in Standard Condition 4.3a, above, to ensure nutrient mobilization and delivery do not occur in the event of excessive irrigation or runoff during the wet season. Because irrigation is limited to controlled hand watering, there is a high degree of control. With the exception of the area mentioned above at CA #2, the remaining cultivation areas are located greater than 100 feet away from the nearest stream. Any runoff that theoretically may occur at these locations could not travel far due to the low gradient topography and/or adequate vegetative buffer.

**Photos:** No

**Corrective or remedial actions needed:** Implement appropriate BMPs at CA #2 (see 4.3a, above) to prevent nutrient delivery to surface waters in the event of excessive irrigation or runoff during the wet season.

**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. 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.

In the event that irrigation runoff occurs or could occur, you shall ensure that contaminated runoff does not enter nearby watercourses. This can be accomplished by constructing or designing containment measures, including sediment basins, berms, infiltration ditches and/or other Best Management Practices (BMPs), as needed, to contain and control surface runoff (see Appendix A).

#### **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 is stored at multiple locations on the Project Site with the potential for leaching into groundwater if left uncovered over the wet season. The majority of fertilizers and amendments are stored inside storage sheds or tarped during the wet season.

**Photos:** MP #5: Photo 5.

**Corrective or remedial actions needed:** Potting soil stored on the Project Site, including spent soils in above-ground pots and cultivation areas, should be tarped or planted and maintained with heavy, continuous cover crops planted to prevent nutrient mobilization over the wet season. Install straw wattles or implement other appropriate BMPs where necessary to contain any mobilized nutrients at the cultivation areas. Any fertilizers, potting soils and soil amendments on the Project Site shall continue to be stored under a roof or tarped during the wet season and equipped with adequate secondary containment where applicable.

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

**Meets condition?** Yes

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

**Photos:** No

**Corrective or remedial actions needed:** To confirm compliance with this Standard Condition, you must keep detailed records of the type and volume of any 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:** See 4.7a observations and comments, above.

**Photos:** See 4.7a Monitoring Point and photo, above.

**Corrective or remedial actions needed:** To prevent nutrient mobilization, you should: 1) keep new or spent potting soils and amendments inside or under a roof or 2) tarp any soils or amendments that are kept outside over the wet season to prevent mobilization or leaching of nutrients. You should also tarp or plant cover crops in spent pots and potting soil piles to lock up nutrients over the wet season.

**Standard Condition #7 - General comments and recommendations:** Most of the fertilizers and soil amendments on the Project Site were observed to be either stored indoors or covered when stored outdoors. Potting soil in above-ground pots was observed to have potential for mobilization or leaching of nutrients if not covered or heavily cover-cropped over the wet season. Fertilizers and amendments were applied according to packaging instructions, and usage is diminished or eliminated toward the end of the growing season.

Under the Order, you are required to keep track of the type, 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.

Tarp or plant cover crops in spent pots and holes to enrich soil and lock up nutrients. If you plan to burn the plant stalks, you'll first need to obtain burn permits from CAL FIRE and the North Coast Unified Air Quality Management District (or relevant jurisdiction for your area). You can then incorporate the ash into the pots or planting holes prior to planting the cover crop to add minerals and recycle the ash.

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:** Pesticides and/or herbicides were not observed on the Project Site at the time of our inspection.

**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 track 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)



**Standard Condition #8 - General comments and recommendations:** For the health of the environment and your workers, you are encouraged to utilize organic or biologic controls, rather than highly toxic petro-chemicals, to prevent pest and mildew problems. Several safe alternatives are available.

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. Do not store pesticides/herbicides with petroleum products. See guidelines for hazardous material storage in Appendix G.

#### 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:** There are multiple small fuel cans and generators on the Project Site that are stored in sheds but lack adequate secondary containment. Note that when petroleum products are onsite they will need to be stored under cover, off the ground and in a secondary containment basin (tote, tub, impervious floor, etc.) capable of containing the entire stored volume.

**Photos:** MP #6: No photo.

**Corrective or remedial actions needed:** Place all small fuel cans, generators and gas powered pumps and garden equipment in adequate secondary containment basins and store in a safe and secure location out of the elements.

- 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:** No above ground storage tanks aside from the items mentioned in Standard Condition 4.9a, above, were observed on the Project Site.

**Photos:** See 4.9a Monitoring Point, above.

**Corrective or remedial actions needed:** See 4.9a, above.

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

**Meets condition?** Not applicable

**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 one or more spill prevention cleanup kits 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?** Not applicable

**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:** Place all fuel cans and generators in adequate secondary containment basins. Note that when petroleum products are onsite they will need to be stored under cover, off the ground and in a secondary containment basin (tote, tub, etc.). Due to the amount of petroleum products stored onsite and/or use of those chemicals, a Hazardous Material Business Plan (HMBP) must be developed 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?** Yes

**Observations/Comments:** Plant waste from cultivation activities is composted or burned on the Project Site. Potting soils were observed at several locations on the Project Site which are amended and reused.

**Photos:** No

**Corrective or remedial actions needed:** None

**Standard Condition #10 - General comments and recommendations:** We encourage you to chip or shred your plant stalks and compost them after harvest. If you burn the stalks, you must first obtain burn permits from CAL FIRE and the North Coast Unified Air Quality Management District (or other relevant jurisdiction for your area). You can then recycle the ash and add minerals to the soil by mixing the ash into your spent pots and plant holes prior to planting a cover crop at the end of the season. Any additional cultivation-related waste can be easily contained by keeping soils and garbage greater than 200 feet from drainage areas and on gentle slopes, tarping or otherwise covering soil piles, and/or by placing straw wattles or other containment structures around the perimeter of spoil piles.

#### **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:** There is one unpermitted outhouse on the Project Site (Figure 2). There is also a bath house on the Project Site that does not have a formal drainage structure and although there was no observed threat of runoff to surface waters, the potential for groundwater contamination does exist.

**Photos:** MP #7: No photo. MP #8: Photo 8.

**Corrective or remedial actions needed:** PWA recommends conducting wet weather testing and onsite investigations to site, design and install a permitted Onsite Wastewater Treatment System (OWTS) for the Project Site. The system must be designed to serve the number of residents and workers that will be present on the Project Site when your cultivation-related operations are at their peak. The existing bath house graywater discharge should be incorporated into the design of the proposed OWTS. Follow the California guidelines for graywater regulations, found in Chapter 16A of the California Plumbing Code, to address the graywater line for the bath house. PWA recommends using serviced, portable toilets on the Project Site until the permitted OWTS can be installed. The service record for the portable toilets should be kept and available for inspection. Continued and future use of the outhouse should be discontinued and the outhouse should be fully decommissioned by filling in the pit and removing toilet infrastructure.

- 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:** Garbage and refuse was observed to be stored properly and securely at the time of the Project Site inspection.

**Photos:** No

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

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

**Meets condition?** Yes

**Observations/Comments:** According to the client the garbage and refuse generated onsite is disposed of at an appropriate waste disposal location.

**Photos:** No

**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.

**Standard Condition #11 - General comments and recommendations:** At the current time there is no permitted OWTS on the Project Site. One outhouse is in use and should be replaced with portable toilets until a permitted OWTS can be installed. Conduct wet weather testing and site investigations to site, design and install a permitted system. Decommission the outhouse by filling in the pit and removing toilet infrastructure. Continue to store garbage and refuse in lidded cans at a safe and secure location and dispose of in a timely manner 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 outcropping and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing berms, stabilizing unstable areas, reshaping cutbanks, and rockering 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 A 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.

Table 1. Features Needing Improvement or Action Items (Prioritized implementation schedule for corrective actions)					
Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations (see more detailed listing of corrective actions in Section 4, above)	Monitoring Point and Photo #	Estimated Cost Date Completed
1 – Site Maintenance, Erosion Control and Drainage Features	Moderate	October 15, 2017	<ul style="list-style-type: none"> <li>- Access Road #1 requires the installation of road drainage features to disconnect surface runoff. Install a rolling dip on Access Road #1 approximately 90 feet to the left of SC #1. A second rolling dip should be installed on Access Road #1 at the intersection with Access Road #2.</li> <li>- Install water bars at 50-foot intervals on the steep segment of Access Road #1 leading to the water bladder. Maintain them annually.</li> <li>- Rolling dips and water bars will disconnect concentrated surface runoff that delivers sediment to surface waters at SC #1. Install additional drainage features at any location where concentrated road runoff and gullying is observed. Typical drawings included in Appendix H will provide guidance for proper rolling dip and water bar construction.</li> </ul>	MP #1, Photo 1	
2 – Stream Crossing Maintenance	High	October 15, 2018	<ul style="list-style-type: none"> <li>- Upgrade SC #1 with three 24-inch diameter culverts installed side by side to pass the expected 100-year peak streamflow, including debris in transport, and no diversion potential. This stream crossing design will allow the pond outlet to remain at its current elevation without changing pond volume or significantly increasing the height of the road bed. This stream crossing should be designed by a licensed engineer to ensure stability of the pond spillway upon rebuild.</li> <li>- PWA recommends conducting a property line survey to determine whether SC #2 is within the Project Site boundary and whether it is the client's responsibility to address this stream crossing.</li> <li>- If SC #2 is determined to be the client's responsibility, PWA recommends decommissioning this stream crossing by removing the two 18-inch diameter culverts and fully excavating the road fill and aggraded sediment upstream of the crossing down to the natural channel grade.</li> </ul>	MP #2, Photo 2 MP #3, Photo 3a, 3b	



**Table 1. Features Needing Improvement or Action Items (Prioritized implementation schedule for corrective actions)**

Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations (see more detailed listing of corrective actions in Section 4, above)	Monitoring Point and Photo #	Estimated Cost	Date Completed
2b	High	October 15, 2018	- Upgrade SC #1 with three 24-inch diameter culverts and an appropriately designed stream crossing to address debris associated with the expected 100-year peak streamflow. - Multiple trash racks should be installed upstream of the inlet to address debris associated with the 100-year peak streamflow. These trash racks should be installed 24 inches upstream of the culvert inlets and spaced 24 inches apart horizontally (Appendix H). If it is determined to be the client's responsibility, PWA recommends properly decommissioning SC #2.	MP #2, Photo 2 MP #3, Photo 3a, 3b		
			- If the instream pond is to be continued as a water source, SC#1 will need to be upgraded with three 24-inch diameter culverts installed side by side to provide for sufficient water storage in the instream pond while maintaining adequate culvert capacity. The outlets of the newly installed culverts should be aligned along the existing channel grade. - If SC #2 is determined to be the client's responsibility, PWA recommends properly decommissioning the stream crossing and excavating all road fill and aggraded sediment upstream of the crossing down to the natural channel grade.			
			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, State Water Resources Control Board (SWRCB) 401 Certification, and Army Corps of Engineers (ACOE) 404 Permit.			
3 – Riparian and Wetland Protection and Management	High	October 31, 2017 and prior to any stream crossing work	- Straw wattles, straw bale barriers or a silt fence should be installed along the downslope edge of CA #2 to prevent nutrient mobilization in the event of summer overwatering or surface runoff from during the wet season. - PWA recommends monitoring this location to ensure no impacts to the riparian area occur.	--		
			- Develop a Water Budget for the Project Site to determine water needs and required storage volumes needed to forbear during the entire dry season from May 15 <sup>th</sup> - October 31 <sup>st</sup> . - PWA also recommends documenting the timing of flow both upstream and downstream of the pond to accurately determine when the instream pond can be classified as storage and not an active surface water diversion.			
3a, b, c, d	Moderate	October 31, 2017		--		
5 – Water Use	Moderate	December 31, 2017 and continuing		--		

**Table 1. Features Needing Improvement or Action Items (Prioritized implementation schedule for corrective actions)**

Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations (see more detailed listing of corrective actions in Section 4, above)	Monitoring Point and Photo #	Estimated Cost	Date Completed
5a, c	Moderate	2017 and then annually	Implement a Water Monitoring Plan on the Project Site: - Install float valves on storage tanks and the water bladder to prevent overflow. - Install water monitoring meters on your surface water diversions and water storage vessels. - Monitor and record the timing and volume of surface water diversion, water storage and water use using the log sheets provided in Appendix D. - Increase the use of water saving strategies, such as timed or volume-limited drip irrigation systems, irrigation scheduling (watering during the early morning and early evening), incorporating water holding amendments and native soil during soil preparation, surface mulching or planting cover crops to minimize evaporation, and planting plants in the ground instead of above ground pots. - Rainwater harvesting during the wet season should be evaluated and employed to limit or completely eliminate surface water diversions during the dry season. - Investigate the feasibility of developing an off-stream pond that can be filled through rainwater harvesting during the winter.	--		
5b	Moderate	May 1, 2017 and then annually		--		
5b	Moderate	June 1, 2017	PWA recommends the installation of float shut off valves or similar devices on water vessels to prevent overflow and improve water conservation.	--		
5c, f	Moderate	October 15, 2018	PWA recommends transitioning away from the use of the water bladder towards rigid storage tanks and/or one or more rainwater-fed off-stream pond(s).	--		
5d	Moderate	May 1, 2017 (or as soon as irrigation begins) and continuing	- Start measuring and recording your average water usage 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, in order to develop and refine a Water Budget for your operation. - Observe and monitor soil moisture so watering, fertilizer and chemical applications are made only when necessary and overwatering and excess infiltration is avoided.	--		
5e	High	November 1, 2017	File for a Small Irrigation Use (SIU) water right when it becomes available in 2017.	--		



**Table 1. Features Needing Improvement or Action Items (Prioritized implementation schedule for corrective actions)**

Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations (see more detailed listing of corrective actions in Section 4, above)	Monitoring Point and Photo #	Estimated Cost	Date Completed
6 - Irrigation Runoff	5f	May 1, 2018	- PWA recommends constructing an engineered berm, designed by a licensed engineer, to provide secondary containment for the water bladder in the event of rupture or failure. - Obtain all necessary permits prior to construction activities if estimated excavation/fill volumes will exceed 50 cubic yards.	MP #4, Photo 4a, 4b		
		May 1, 2017	- Install an adequate restraining system to secure the water bladder until such time as the water bladder can be removed or relocated. - Until it is moved or decommissioned, monitor the water bladder and outboard fillslope for signs of instability, potential for mobility or future erosion.	MP #4, Photo 4a, 4b		
	5	October 15, 2017	A LSAA will need to be submitted and obtained from CDFW for the surface water diversion and prior to any proposed stream crossing upgrade work on the Project Site.	--		
	6	October 31, 2017	Implement appropriate BMPs at CA #2 to prevent nutrient leaching or delivery to surface waters in the event of excessive irrigation or runoff during the wet season.	--		
7 - Fertilizer and Amendment Use	7a	May 1, 2017 and then annually	- Potting soil stored on the Project Site, including spent soils in above-ground pots and cultivation areas, should be tarped or have heavy cover crops planted to prevent nutrient mobilization over the wet season. - Install straw wattles or implement other appropriate BMPs where necessary to contain any mobilized nutrients at the cultivation areas. - Any fertilizers, potting soils, spent soils, and soil amendments on the Project Site shall be stored under a roof or tarped during the wet season.	MP #5, Photo 5		
	7b	April 1, 2017 and then continuing	- Under the Order, you are required to keep detailed records of the type, timing and volume of fertilizers and/or other soil amendments you use (use log sheets provided in Appendix E). - Observe and monitor soil moisture so watering, fertilizer and chemical applications are made only when necessary and overwatering and excess infiltration is avoided.	--		
	7c	October 31, 2017 and then annually by October 31	- To prevent nutrient mobilization, you should: 1) keep new or spent potting soils and amendments inside or under a roof or 2) tarp any soils or amendments that are kept outside over the wet season to prevent mobilization or leaching of nutrients. - You should also tarp or plant cover crops in spent pots and potting soil piles to prevent nutrient leaching or runoff during the wet season.	MP #5, Photo 5		

**Table 1. Features Needing Improvement or Action Items (Prioritized implementation schedule for corrective actions)**

Standard Condition Requiring Action	Treatment Priority	Schedule	Summary of Corrective Actions/Recommendations (see more detailed listing of corrective actions in Section 4, above)	Monitoring Point and Photo #	Estimated Cost	Date Completed
8 – Pesticides and Herbicides	Moderate	April 1, 2017 and then continuing	<ul style="list-style-type: none"> <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 so they cannot enter or be released into surface or ground waters.</li> <li>- To verify conformance with the Order, you are required to keep track 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 (see Appendix F).</li> </ul>	--		
			Place all small fuel cans, generators, gas powered pumps and other gas powered garden equipment in adequate secondary containment basins and store in a safe and secure location out of the elements.	MP #6, No Photo		
9 – Petroleum Products and Other Chemicals	High	April 1, 2017	Obtain and make available one or more spill prevention cleanup kits to clean up small spills. Spill kits should be located where fuel is stored and refueling occurs.	--		
		May 1, 2017	Develop a Hazardous Material Business Plan (HMBP) for the Project Site.	--		
11 – Refuse and Human Waste	High	October 31, 2018	PWA recommends conducting wet weather testing and onsite investigations to site, design and install a permitted Onsite Wastewater Treatment System (OWTS) for the Project Site. The system must be designed to serve the number of residents and workers that will be present on the Project Site when your cultivation-related operations are at their peak.	MP #8, Photo 8		
		May 15, 2019	- The existing bath house graywater discharge should be incorporated into the design of the proposed OWTS. Follow the California guidelines for graywater regulations, found in Chapter 16A of the California Plumbing Code, to address the graywater line for the bath house.			
		May 31, 2017	<ul style="list-style-type: none"> <li>- PWA recommends using serviced, portable toilets on the Project Site until the permitted OWTS can be installed. The service record for the portable toilets should be kept and available for inspection.</li> <li>- Continued and future use of the outhouse should be discontinued and the outhouse should be fully decommissioned by filling in the pit and removing toilet infrastructure.</li> </ul>	MP #7, No photo		

## 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 December 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 landowner is to accumulate enough water storage capacity to forebear the entire period from May 15<sup>th</sup> to October 31<sup>st</sup>. This will

ensure the timing of water use is not impacting water quality objectives and beneficial uses. There is 877,400 gallons of water storage, in tanks, a large water bladder and an instream pond currently on the Project Site. Based on the size of the cultivation area (17,230 ft<sup>2</sup>) and rough water use estimates from the client, it does appear that there is adequate storage to avoid surface water diversions during the dry season from May 15<sup>th</sup> through October 31<sup>st</sup>. Using water use estimates from the Humboldt County Planning and Building Department also suggests that adequate storage currently exists on the Project Site. These estimates suggest that 27 gallons of water is needed for every square foot of cultivation and, based on the existing cultivation area of 17,230 ft<sup>2</sup>, 465,210 gallons of storage would be needed to observe the 150 day forbearance period. A Water Budget should be developed and refined to determine if additional storage is needed for your operations to forbear (not divert) during this period.

*Water Conservation* - Water conservation measures currently practiced include the use of controlled hand watering. We suggest growing many of the plants in-ground (as compared to above ground pots) and watering late in the afternoon or evening to minimize water loss through evaporation and maximize water up-take by the plants. Starting this year, new water conserving techniques and equipment will be utilized and tested to evaluate their effectiveness and efficiency (see Section 4.5b, above). Test and deploy volume limited drip emitters, surface mulching, and incorporating water holding amendments and native soil during the initial soil preparation at the start of the season. PWA also recommends the installation of float shut off valves or similar devices on water storage vessels where necessary to prevent overflow, reduce water diversion and improve water conservation.

*Water sources and use* - The water used for irrigation activities on the Project Site comes from an instream pond (POD) identified in Figure 2. Rainwater harvesting should be evaluated and employed where possible to limit surface water diversion during the dry season. When and if additional ponds are approved and constructed, they should be designed to be off-stream and rainwater-fed so your operations will have minimal or no impact on downstream water quality and aquatic habitat, especially during the dry summer months.

At this time, the client estimates that 77,900 gallons of water is used annually on the Project Site for irrigation purposes. This estimate is significantly less than estimates provided by the Humboldt County Planning and Building Department mentioned above. It will be important for you to keep accurate records of your water diversion, storage and use so that it can be reported each year, as required by the NCRWQCB and SWRCB-DWR and to verify that adequate storage exists on the Project Site to observe the forbearance period. 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 from streams) during the dry summer growing season.

Therefore, over the course of the upcoming cultivation season, water use should be accurately documented using the log forms supplied to you by PWA, attached in Appendix D, or by some other equally accurate method. Annual reporting of diversion and use rates are required to be submitted annually to the NCRWWQCB no later than March 31 for the preceding calendar year. As more accurate data is gathered, refined targets can be made to ensure adequate storage exists to protect downstream water quality and beneficial uses during the driest time of the year. Water rights notifications and registrations will be submitted to the State Water Resource Control Board

(Division of Water Rights) and a Lake and Streambed Alteration Agreement (LSAA) sought through the California Department of Fish and Wildlife (CDFW) for the on-stream pond.

## 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.

Because this is the first year of enrollment, information regarding chemical use and storage is deficient or anecdotal. 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:

Azomite – 160 pounds  
Worm castings – 2,000 pounds  
Fish bone meal – 60 pounds  
Feather meal – 60 pounds  
Glacial rock dust – 380 pounds  
Kelp meal – 115 pounds  
Oyster shell – 50 pounds  
Chicken manure – 250 pounds

### Pesticides, Herbicides, and Fungicides:

None

### Petroleum and Other Chemicals:

Gasoline  
Motor oil  
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: \_\_\_\_\_

Total Cultivation area (includes vegetable garden) (ft2)	17,230
Annual Soil Ammendment and Chemical Use	
ammendment	lbs./ yds.
azomite	160
worm castings	2,000
fish bone meal (P)	60
feather meal (P)	60
glacial rock dust	380
kelp meal (K)	115
oyster shell (P)	50
chicken manure (N)	250
<b>Total (lbs.)</b>	<b>3,075</b>

Total Storage capacity	tanks	bladder	POND	Total (gal)
	2,400	20,000	855,000	877,400

**Total Water Surface Diversion by Month**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total (gal)
Instream/rainwater catchment Pond	0	0	0	0	400	12,000	20,000	24,000	20,000	1,500	0	0	77,900

**Water Input to Storage by Source and Month**

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total (gal)
Instream/rainwater catchment Pond	0	0	0	0	400	12,000	20,000	24,000	20,000	1,500	0	0	77,900

**Water Use by Source and Month**

Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total (gal)
Instream/rainwater catchment Pond	0	0	0	0	400	12,000	20,000	24,000	20,000	1,500	0	0	77,900

## APPENDIX C: PHOTO DOCUMENTATION OF MONITORING POINTS



MP #1, Photo 1



MP #2, Photo 2





MP #3, Photo 3a



MP #3, Photo 3b



MP #4, Photo 4a



MP #4, Photo 4b





MP #5, Photo 5



MP #8, Photo 8



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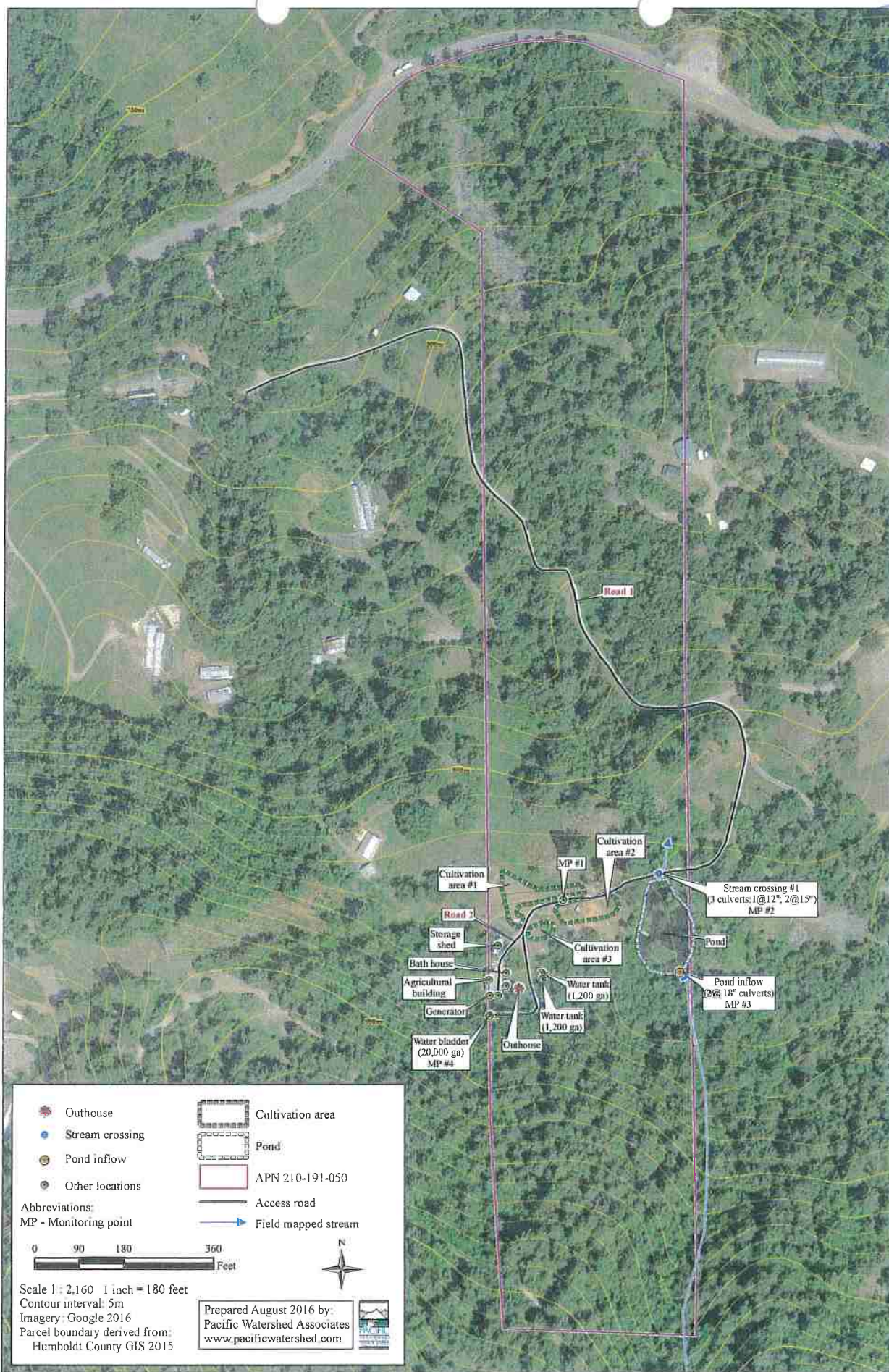


Figure 2. Site map for PWA ID# PWA18010105070351750, APN 210-191-050, located off State Highway 36, Bridgeville, Humboldt County, California.



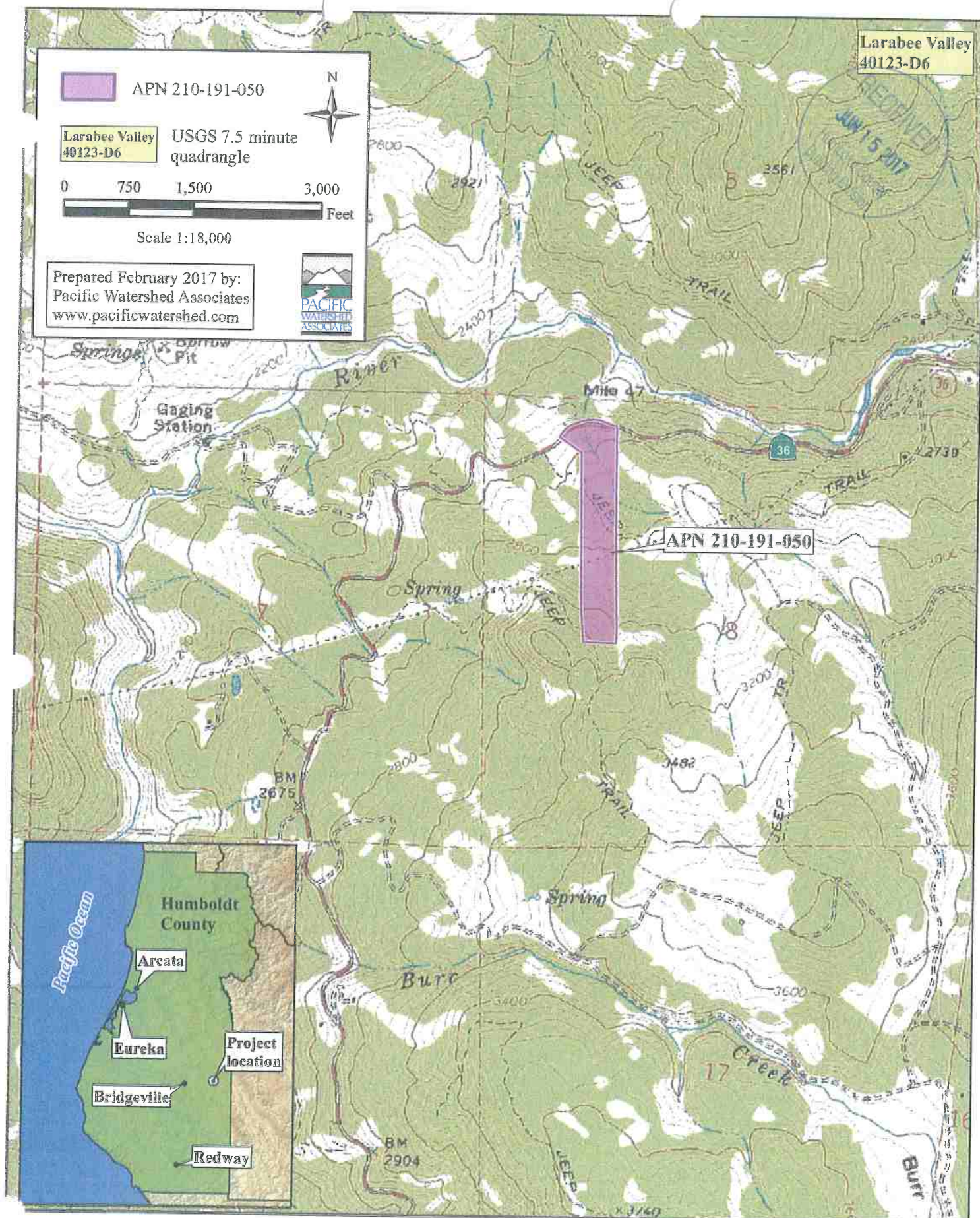


Figure 1. Location map for WDID #1B161251CHUM, APN 210-191-050, located off State Highway 36, Bridgeville, Humboldt County, California.