Water Resource Protection Plan
For
WDID #1B16437CHUM

Submitted to:

Ryan McIntosh
P.O. Box 404
Willow Creek, California 95573

Prepared by:

Timberland Resource Consultants
165 South Fortuna Blvd
Fortuna, CA 95540

9-9-2016

Purpose

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

Scope of Report

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

Methods

The methods used to develop this WRPP include both field and office components. The office component consisted of reviewing available CGS Geomorphic Features Maps, Geology Maps, and historic aerial photos. The field component included identifying and accurately mapping all watercourses, wet areas, and wetlands located downstream of the cultivation areas, associated facilities, and all appurtenant roads accessing such areas. An accurate location of the Waters of the State is necessary to make an assessment of whether potential and existing erosion sites/pollution sites have the potential to discharge waste to an area that could affect waters of the State (including groundwater). Next, all cultivation areas, associated facilities, and all appurtenant roads accessing such areas were assessed for discharges and related controllable water quality factors from the activities listed in Order R1-2015-0023, Finding 4a-j. The field assessment also included an evaluation and determination of compliance with the Standard Conditions per Provision I.B of Order No. R1-2015-0023. The water resource protection plans required under Tier 2 are meant to describe the specific measures a discharger implements to achieve compliance with standard conditions. Therefore, all required components of the water resource protection plan per Provision I.B of Order No. R1-2015-0023 were physically inspected and evaluated. A comprehensive summary of each Standard Condition as it relates to the subject property is appended.

Identified Sites Requiring Remediation (See Standard Conditions Assessment)

Unique Map Point(s)	Map Point Description	Associated Standard Condition	Temporary BMP	Permanent BMP	Priority for Action	Time Schedule for completion of Permanent BMP	Completion Date
Map Point 1 and 3	Existing 24 inch culverts class II watercourse crossings (slightly undersized)	A(2)	N/A	Monitor and maintain especially during heavy rain. If they appear close to being overtopped or in need of being replaced for any reason such as age, deterioration, holes, etc., they should be upsized in diameter (30" dia.).	2	11/15/16	
Map Point 2	Existing 24 inch culvert class II watercourse crossing (moderate diversion potential, slightly undersized)	A(2)	N/A	Install a Critical Dip (priority 3). Monitor and maintain especially during heavy rain (priority 2). If this culvert appears close to being overtopped or in need of being replaced for any reason such as age, deterioration, holes, etc., it should be upsized in diameter (30" dia.).	2 3	11/15/16 11/15/17	
Map Point 4	Existing 24 inch culvert class II watercourse crossing (moderate diversion potential)	A(2)	N/A	Install a Critical Dip (priority 3). Monitor and maintain especially during heavy rain (priority 2). If this culvert appears close to being overtopped or in need of being replaced for any reason such as age, deterioration, holes, etc., it should be replaced with at least a 24" dia. culvert.	2 3	11/15/16 11/15/17	
Map Point 5	Existing 24 inch culvert class II watercourse crossing (moderate diversion potential, undersized)	A(2)	N/A	Install a Critical Dip (priority 3). Monitor and maintain especially during heavy rain (priority 2). If this culvert appears close to being overtopped or in need of being replaced for any reason such as age, deterioration, holes, etc., it should be upsized in diameter (48" dia.). If banks adjacent to the channel above the inlet become unstable, hire a certified geologist to provide recommended mitigation.	2 3	11/15/16 11/15/17	

Identified Sites Requiring Remediation (See Standard Conditions Assessment)

Unique Map Point(s)	Map Point Description	Associated Standard Condition	Temporary BMP	Permanent BMP	Priority for Action	Time Schedule for completion of Permanent BMP	Completion Date
Map Point 6	Existing 24 inch culvert class II watercourse crossing (slightly undersized)	A(2)	N/A	Monitor and maintain especially during heavy rain. If it appears close to being overtopped or in need of being replaced for any reason such as age, deterioration, holes, etc., it should be upsized in diameter (36" dia.).	2	11/15/16	
Pond Overflow Channel	Pond Overflow Channel	A(3)	N/A	During periods of pond overflows, monitoring should take place at this site to determine whether or not there is sediment transport occurring and to determine an effective mitigation measure if necessary.	2	11/15/16	
Gas Can Storage (No Unique Map Point)	Gas Can Storage	A(9)	N/A	Store portable gas cans in enclosed structures protected from precipitation.	4	Shortest time possible, no later than 5 years.	

An approved Lake and Streambed Alteration Permit from CDFW is required for all instream work (watercourse crossing replacements or surface diversions).

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

Monitoring Plan

Tier 2 Dischargers shall include a monitoring element in the water resource protection plan that at a minimum provides for periodic inspection of the site, checklist to confirm placement and efficacy of management measures, and document progress on any plan elements subject to a time schedule. Tier 2 Dischargers shall submit an annual report (Appendix C) by March 31 of each year that documents implementation and effectiveness of management measures during the previous year. Tier 2 annual reporting is a function that may be provided through an approved third party program.

Monitoring of the site includes visual inspection and photographic documentation of each feature of interest listed on the site map, with new photographic documentation recorded with any notable changes to the feature of interest. At a minimum, all site features must be monitored annually, to provide the basis for completion of the annual re-certification process. Additionally, sites shall be monitored at the following times to ensure timely identification of changed site conditions and to determine whether implementation of additional management measures is necessary to iteratively prevent, minimize, and mitigate discharges of waste to surface water: 1) just prior to October 15 to evaluate site preparedness for storm events and storm water runoff, 2) following the accumulation of 3" total precipitation or by November 15, whichever is sooner, and 3) following any rainfall event with an intensity of 3" precipitation in 24 hours. Precipitation data can be obtained from the National Weather Service Forecast Office (e.g. by entering the zip code of the parcel location at http://www.srh.noaa.gov/forecast).

Inspection Personnel Contact Information:

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Timberland Resource Consultants
165 South Fortuna Blvd, Fortuna CA 95540
707-725-1897

Monitoring Plan Reporting Requirements

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

STATEMENT OF CONTINGENT AND LIMITING CONDITIONS CONCERNING THE PREPARATION AND USE OF WATER RESOURCE PROTECTION PLAN

Prepared by Timberland Resource Consultants

1. This Water Resource Protection Plan has been prepared for the property within APN 522-073-002 at the request of the discharger.

2. Timberland Resource Consultants does not assume any liability for the use or misuse of the information in this Water Resource Protection Plan.

3. The information is based upon conditions apparent to Timberland Resource Consultants at the time the inspection was conducted. Changes due to land use activities or environmental factors occurring after this inspection, have not been considered in this Water Resource Protection Plan.

4. Maps, photos, and any other graphical information presented in this report are for illustrative purposes. Their scales are approximate, and they are not to be used for locating and establishing boundary lines.

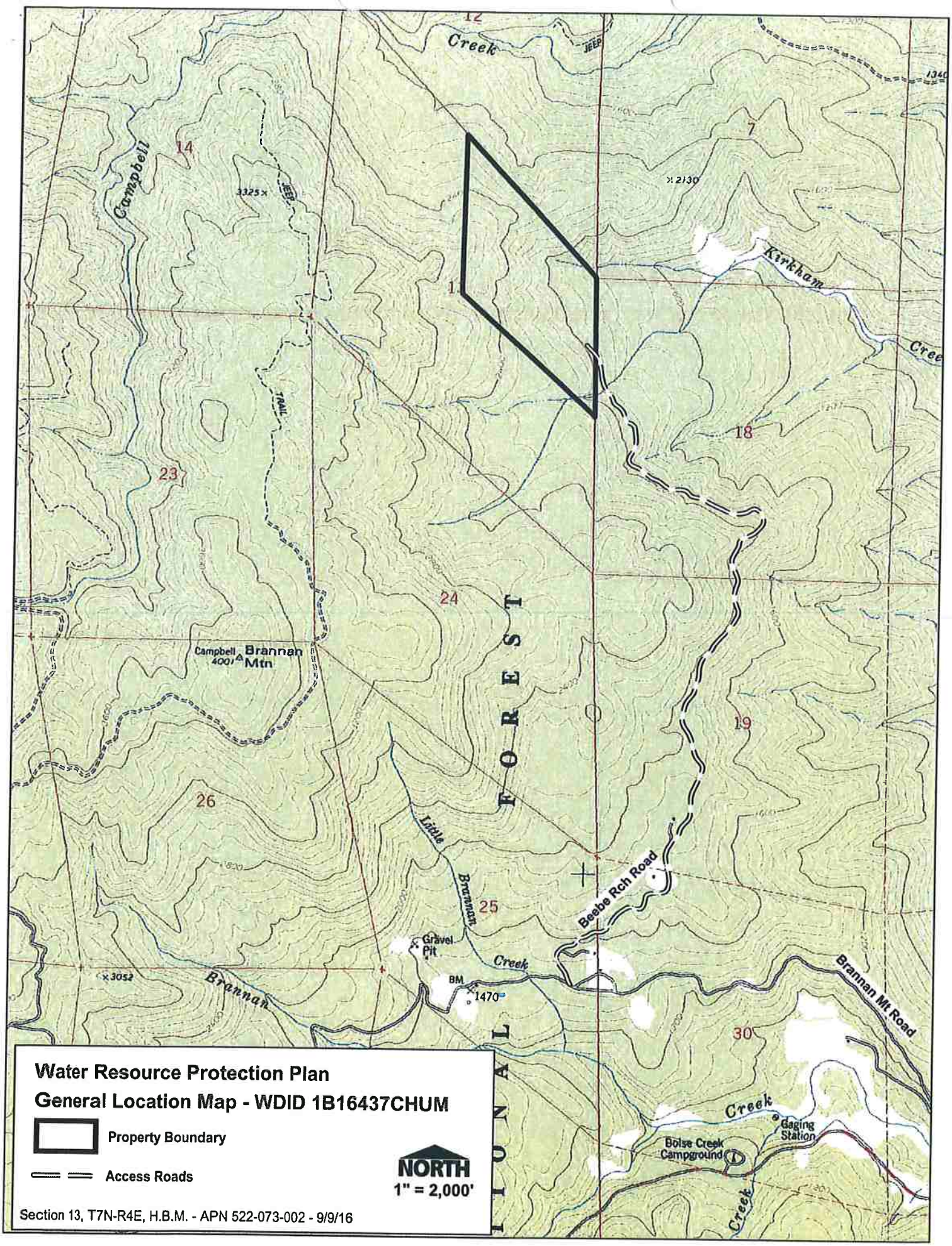
5. The conditions presented in this Water Resource Protection Plan may differ from those made by others or from changes on the property occurring after the inspection was conducted. Timberland Resource Consultants does not guarantee this work against such differences.

6. Timberland Resource Consultants did not conduct an investigation on a legal survey of the property.

7. Persons using this Water Resource Protection Plan are advised to contact Timberland Resource Consultants prior to such use.

8. Timberland Resource Consultants will not discuss this report or reproduce it for anyone other than the Client named in this report without authorization from the Client.

Ron Pelletier
Timberland Resource Consultants



Water Resource Protection Plan

General Location Map - WDID 1B16437CHUM

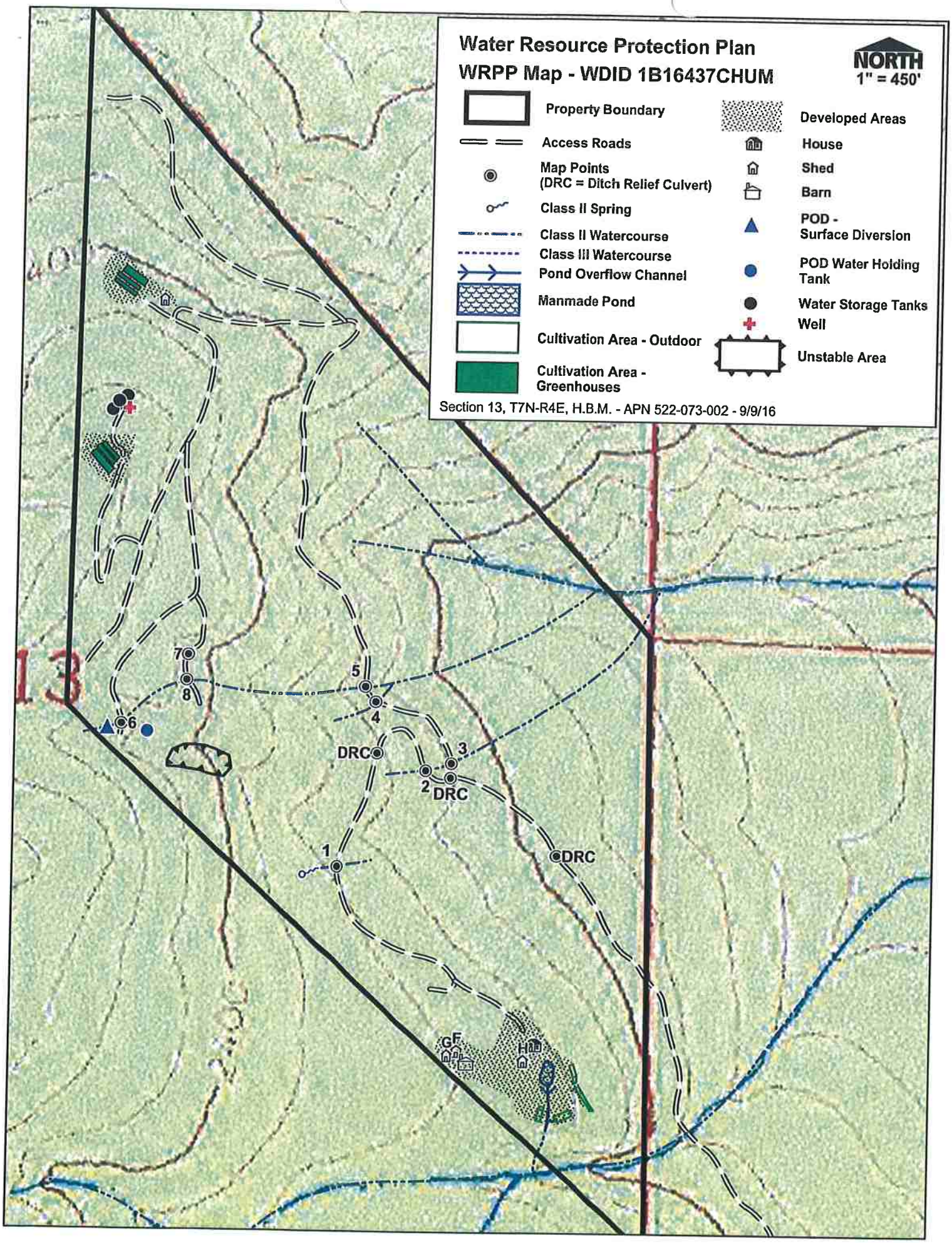
Property Boundary

Access Roads

NORTH

1" = 2,000'

Section 13, T7N-R4E, H.B.M. - APN 522-073-002 - 9/9/16


Water Resource Protection Plan
WRPP Map - WDID 1B16437CHUM
NORTH
1" = 450'
Property Boundary
Access Roads
Map Points
(DRC = Ditch Relief Culvert)
Class II Spring
Class II Watercourse
Class III Watercourse
Pond Overflow Channel
Manmade Pond
Cultivation Area - Outdoor
Cultivation Area - Greenhouses
Developed Areas
House
Shed
Barn
POD - Surface Diversion
POD Water Holding Tank
Water Storage Tanks
Well
Unstable Area
Section 13, T7N-R4E, H.B.M. - APN 522-073-002 - 9/9/16
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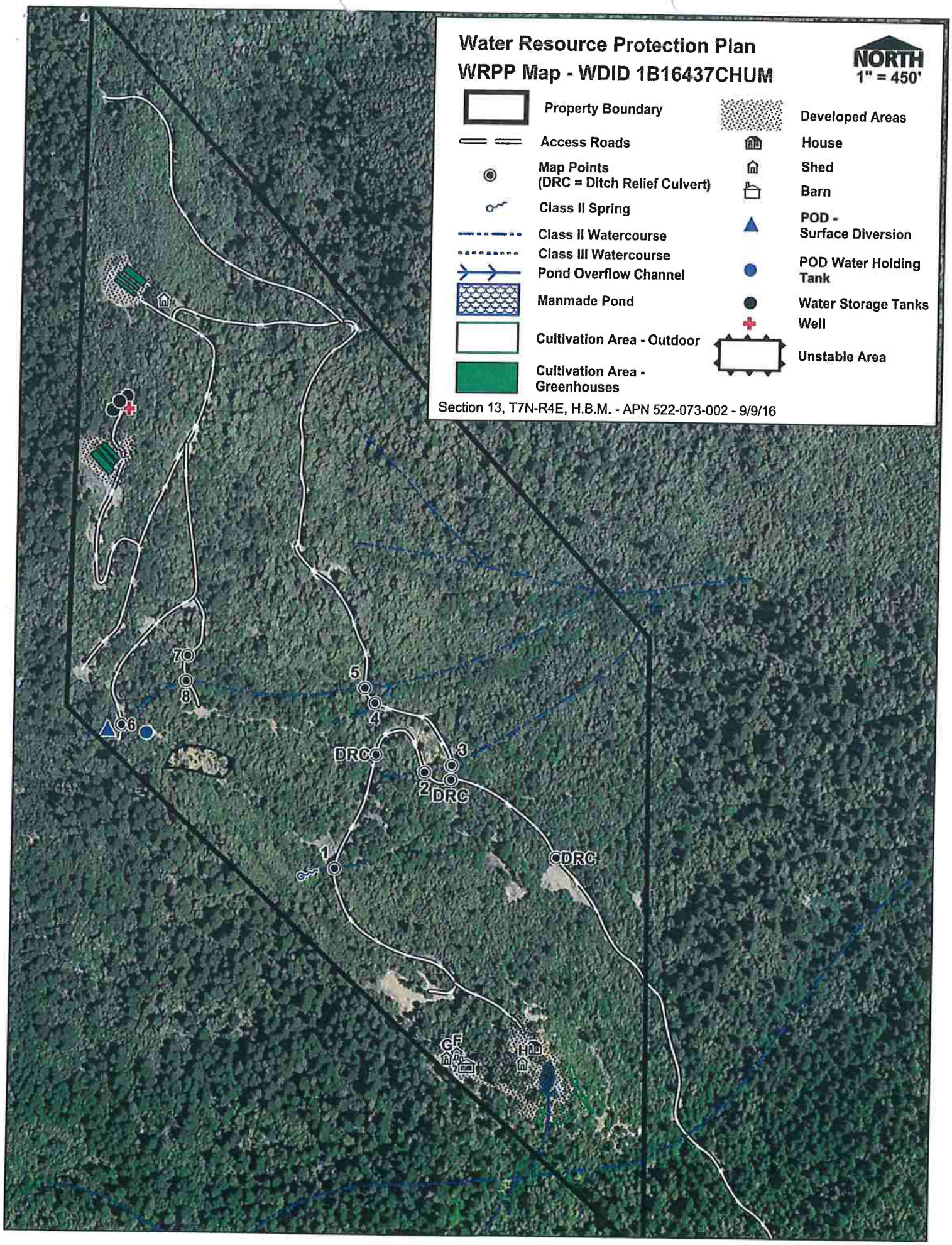
Water Resource Protection Plan
WRPP Map - WDID 1B16437CHUM
NORTH
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Property Boundary
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Class II Spring
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Section 13, T7N-R4E, H.B.M. - APN 522-073-002 - 9/9/16
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Water Resource Protection Plan

Assessment of Standard Conditions for APN 522-073-002 – WDID #1B16437CHUM

A. Standard Conditions, Applicable to All Dischargers

1. Site maintenance, erosion control and drainage features

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

   The road surfaces on the property, on the assessment date of 2/23/16, contained adequate surfaces and drainage features. Roads on the property were in good shape and not rutting, gullying, or eroding resulting in delivery to surface waters.

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

   In compliance at this time. Road assessments conducted on 2/23/16 did not reveal any roads or foot trails eroding due to inadequate ditch relief drains or rolling dips.

   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.

   Physical reconnaissance of the property revealed one unstable area on the property. It is not located near the developed areas, cultivation areas, or roads. Runoff from roads and developed areas on the property are not being directed towards this unstable area, or earthen fills. This small unstable area is approximately one half acre in size and is shown on the WRPP Map. Slopes in the vicinity of developed areas and cultivation areas are located on gentle slopes. Steeper slopes on the property are undeveloped and mostly timbered and heavily vegetated.

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

   [1] Connected roads are road segments that deliver road surface runoff, via the ditch or road surface, to a stream crossing or to a connected drain that occurs within the high delivery potential portion of the active road network. A connected drain is defined as any cross-drain culvert, water bar, rolling dip, or ditch-out that appears to deliver runoff to a defined channel. A drain is considered connected if there is evidence of surface flow connection from the road to a defined channel or if the outlet has eroded a channel that extends from the road to a defined channel. (http://www.forestsandfish.com/documents/Road_Mgmt_Survey.pdf)

   No roads, clearings, fill prisms, or terraced areas with the potential for sediment erosion and transport were identified as being hydrologically connected to surface waters. If such a condition is discovered in the future through monitoring, installation of waterbars and/ or rolling dips will take place to properly disperse concentrated runoff from the road.

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.

In compliance at this time. Rolling dip outlets and ditch relief drains along access roads appeared well maintained on the assessment date of 2/23/16, and were not delivering sediment to receiving waters.

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

In compliance at this time. In the future, all construction materials will be stored to prevent their transport to receiving waters.

2. Stream Crossing Maintenance

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

[2]At a minimum, the culvert shall be aligned at the inlet. If infeasible to align the culvert outlet with the stream grade or channel, outlet armoring or equivalently effective means may be applied.
[3]If infeasible to install a critical dip, an alternative solution may be chosen.

There are a total of six existing stream crossings on this parcel that are currently permanent culverts (Map Points 1 through 6). There are also two other map points of note on the property. Map Points 7 and 8 are located on a seldom used atv trail that was once a logging road or a skidtrail. All of these are described below and their locations are shown on the WRPP Map.

Map Point 1: This is a 24 inch diameter, permanent, plastic culvert crossing of a spring fed Class II watercourse. It appears to have been in place for several years, but the exact year of installation is unknown. The inlet and the outlet were armored at the time is was installed and it is set at the grade of the watercourse. It appeared to be maintained, functioning well, and was free of obstructions on the assessment date, 2/23/16. It has a low diversion potential and was not a source of erosion. Its diameter appears to be adequate for the flows that it receives and there was no sign of it being overtopped during the heavy rainfall of December 2015 and January 2016. It is located on a spring fed Class II watercourse that apparently goes underground downstream of this crossing because it was not evident on the lower road downslope of this crossing. A determination on paper, as to whether this crossing is adequately sized for the possible 100 year peak streamflow was made difficult because the watercourse's drainage area is not easily definable on the USGS Quad. Map. Using a range of different acreages for the drainage area above the crossing, a best estimate for the 100 year peak streamflow is between 10 and 20 cubic feet per second (cfs). A streamflow of 10 cfs requires a 24 inch diameter culvert. A streamflow of 20 cfs requires a 30 inch diameter culvert. This indicates that the existing culvert

currently in place may be sized adequately or could be slightly undersized for the peak streamflow at this location. There is no physical evidence of erosion, overtopping, or eminent failure at this crossing site. The crossing should continue to be maintained and monitored in the future. If in the future this culvert appears close to being overtopped or in need of being replaced for any reason such as age, deterioration, holes, etc., it should be upsized to a 30" diameter culvert.

Map Point 2: This is a 24 inch diameter, permanent, plastic culvert crossing of a Class II watercourse. It appears to have been in place for several years, but the exact year of installation is unknown. It appeared to be maintained, functioning well, and was free of obstructions on the assessment date, 2/23/16. Its diameter appears to be adequate for the flows that it receives and there was no sign of it being overtopped during the heavy rainfall of December 2015 and January 2016. Its source is approximately 200 feet above the crossing. A determination on paper, as to whether this crossing is adequately sized for the possible 100 year peak streamflow was made difficult because the watercourse's drainage area is not easily definable on the 80 foot contour interval, USGS Quad. Map. Its mapped location is not within a swale, but rather on a minor ridge feature. Using a range of different acreages for the drainage area above the crossing, a best estimate for the 100 year peak streamflow is between 13 and 14 cubic feet per second (cfs). Streamflow of these magnitudes require a culvert diameter of slightly larger than the 24 inch diameter culvert that is currently in place. This indicates that the existing culvert currently in place may be sized adequately or could be slightly undersized for the 100 year peak streamflow at this location. There is no physical evidence of erosion, overtopping, or eminent failure at this crossing site. There is a moderate diversion potential at this site due to the road configuration at the crossing site and the lack of a critical dip. The crossing should continue to maintained and monitored in the future, and a critical dip should be installed across the road surface below the crossing site. If in the future this culvert appears close to being overtopped or in need of being replaced for any reason such as age, deterioration, holes, etc., it should be upsized to a 30" diameter culvert.

Map Point 3: This is a 24 inch diameter, permanent, metal culvert crossing of a Class II watercourse. The exact year of installation is unknown, but it appears to have been in place longer than the plastic culverts at Map Points 1 and 2. It appeared to be maintained, functioning well, and was free of obstructions on the assessment date, 2/23/16. Its diameter appears to be adequate for the flows that it receives and there was no sign of it being overtopped during the heavy rainfall of December 2015 and January 2016. A shallow basin of approximately 10 feet wide is located at the inlet. It is located in a low spot in the road and its diversion potential is low. It is not set at the natural grade of the watercourse at the outlet. There is a 6 to 10 foot long downspout attached to the outlet to compensate. The metal culvert walls and the metal downspout are solid and free of excessive rust deterioration. It is located approximately 100 feet downstream from the crossing at Map Point 2. Because it is on the same watercourse as Map Point 2 and only 100 feet below, a determination on paper, as to whether this crossing is adequately sized for the possible 100 year peak streamflow was met with the same difficulties as Map Point 2 above. A best estimate for the 100 year peak streamflow is between 13 and 14.5 cubic feet per second (cfs). Streamflow of these magnitudes require a culvert diameter of slightly larger than the 24 inch diameter culvert that is currently in place. This indicates that the existing culvert currently in place may be sized adequately or could be slightly undersized for the 100 year peak streamflow at this location. There is no physical evidence of erosion, overtopping, or eminent failure at this crossing site. The rust scour line is only in the very bottom of the culvert floor. This crossing should continue to maintained and monitored in the future. If in the future this culvert appears close to being overtopped or in need of being replaced for any reason such as age, rust, holes, etc., it should be upsized to a 30" diameter culvert.

Map Point 4: This is a 24 inch diameter, permanent, metal culvert crossing of a Class II watercourse. The exact year of installation is unknown, but it appears to have been in place for several years and is likely the same age as the metal culvert crossing at Map Point 3. It appeared to be maintained, functioning well, and was free of obstructions on the assessment date, 2/23/16. Its diameter appears to be adequate for the flows that it receives and there was no sign of it being overtopped during the heavy rainfall of December 2015 and January 2016. Its inlet is set to grade but the outlet is slightly above the grade of the watercourse. The outlet is elongated, slightly "shotgunned", and drains onto large rocks and wood in the channel. The culvert is not currently causing erosion. It is located less than 100 feet southeast of another crossing shown as Map Point 5. These separate watercourses come together approximately 50 feet below the road. Moderate diversion potential exists for both Map Points 4 and 5. A critical dip should be placed across the road surface southeast of Map Point 4. This will reduce the risk of diversion of the watercourse at Map Point 4 and Map Point 5 as well.

Its mapped location is not a swale, but rather on the same minor ridge feature as the watercourse associated with Map Points 2 and 3. Its source is believed to be spring fed, and similar in elevation to the previously mentioned watercourse. Lacking a defined drainage area on the 80 foot contour interval, USGS Quad. Map, made calculating the 100 year peak streamflow difficult. A best estimate for the 100 year peak streamflow for this crossing is approximately 5 to 10 cfs. Streamflow of these magnitudes require a culvert diameter of between 18 and 24 inches. This indicates that the existing culvert currently in place may be sized adequately. There is no physical evidence of erosion, overtopping, or eminent failure at this crossing site. The rust scour line is only in the very bottom of the culvert floor. This crossing should continue to be maintained and monitored in the future. Also, a critical dip should be placed across the road surface southeast of Map Point 4 to reduce the risk of diversion of this watercourse or the nearby watercourse at Map Point 5 should they become obstructed.

Map Point 5: This is a 24 inch diameter, permanent, metal culvert crossing of a Class II watercourse. The exact year of installation is unknown, but it appears to have been in place for several years and is likely the same age as the metal culvert crossing at Map Point 4. It appeared to be maintained, functioning, and was free of obstructions on the assessment date, 2/23/16. Its diameter appears to be adequate for the flows that it receives and there was no sign of it being overtopped during the heavy rainfall of December 2015 and January 2016. Its inlet is set to grade and is slightly dented. The outlet is slightly above the grade of the watercourse but not eroding. It is located less than 100 feet northwest of the crossing shown at Map Point 4. These separate watercourses come together approximately 50 feet below the road. Moderate diversion potential exists at this crossing and Map Point 4 as well. A critical dip should be placed across the road surface southeast of Map Point 4. This will serve to reduce the risk of diversion potential at both crossings, Map Point 5 and Map Point 4, as well.

This crossing has a characteristic that separates it from the crossings described previously. The channel above the inlet is flanked by 15 feet tall vertical, unvegetated banks. The height of these banks reduces upstream from the crossing. Approximately 100 feet upstream, the height of these banks is greatly reduced. The watercourse for 50 feet above the inlet braids within a 5 foot wide, rocky bottom substrate in between the tall, unvegetated banks. An old skidtrail parallels the north side of the watercourse up on top of the high bank. It is vegetated, has small trees growing on it, and does not appear to have contributed to this condition. The cause of this condition above the inlet is unknown. Investigation a short distance upstream did not reveal any obvious causes. A search of historic aerial photography shows that the area was heavily logged in the early to mid 1980's. No unstable areas could be identified at this location or upstream through aerial photography review. The stability of these tall banks is unclear, but they appeared stable on the date of the assessment, 2/23/16. The landowner stated that they have remained unchanged during his time on the property, but that only includes three winter

seasons. Although sediment deliveries may have occurred in the past at this site, it did not appear to be a controllable sediment site currently. On the date the site was observed, high flows were not occurring but had occurred recently. This site should be monitored by the landowner at the required intervals stated in the Monitoring Plan Section of the Water Resource Protection Plan. In the future, if the banks adjacent to the stream channel appear unstable, this area should be inspected by a certified geologist. Any mitigation work at this site to improve slope stability or to reduce the threat of sediment input from the watercourse banks, should only be conducted following a recommendation by a certified geologist.

The lower half of this watercourse is located within a mapped swale. Upon mapping this watercourse upstream from the crossing location, its track was mapped crossing definable drainage basins on the 80 foot contour interval, USGS Quad. This made the acreage of the drainage basin, as well as the 100 year peak streamflow, difficult to determine. A best estimate for the 100 year peak streamflow for this crossing is approximately 63 cfs. Streamflow of this magnitude requires a culvert diameter of 42 to 48 inches in diameter. This indicates that the existing culvert currently in place is likely undersized. There is no physical evidence of erosion, overtopping, or eminent failure at this crossing due to being undersized. The rust scour line is only in the very bottom of the culvert. This crossing should continue to be maintained and monitored in the future. If in the future this culvert appears close to being overtopped or in need of being replaced for any reason such as age, rust, holes, etc., it should be upsized to a 48" diameter culvert. Also, a critical dip should be placed across the road surface southeast of Map Point 4 to reduce the risk of diversion of this watercourse or the nearby watercourse at Map Point 5 should they become obstructed.

Map Point 6: This is a 24 inch diameter, permanent, plastic culvert crossing of a Class II watercourse. The exact year of installation is unknown, but it appears to have been in place for several years. It appeared to be maintained, functioning, and was free of obstructions on the assessment date, 2/23/16. Its diameter appears to be adequate for the flows that it receives and there was no sign of it being overtopped during the heavy rainfall of December 2015 and January 2016. Its inlet and outlet are set to the natural grade of the watercourse, and it is located in a natural dip so its diversion potential is low. It is located on the same watercourse as the watercourse crossing at Map Point 5. Because it is on the same watercourse as Map Point 5, a determination on paper, as to whether this crossing is adequately sized for the possible 100 year peak streamflow was met with the same difficulties as Map Point 5 above. A best estimate for the 100 year peak streamflow for this crossing is approximately 36 cfs. Streamflow of this magnitude requires a culvert diameter of 36 to 42 inches in diameter. This indicates that the existing culvert currently in place may be undersized. There is no physical evidence of erosion, overtopping, or eminent failure at this crossing due to being undersized. This crossing should continue to be maintained and monitored in the future. If in the future this culvert appears close to being overtopped or in need of being replaced for any reason such as age, holes, etc., it should be upsized to a 36" diameter culvert.

Map Point 7: This is not a watercourse crossing. It is a point where the road crosses a swale. There is no watercourse present. It is shown as point of reference only.

Map Point 8: This is a watercourse crossing on a road that the landowner does not use. The crossing structure was pulled several years ago and the site is not eroding. The site does not require mitigation, maintenance, or monitoring.

3. Riparian and Wetland Protection and Management

   a. For Tier 1 Dischargers, cultivation areas or associated facilities shall not be located within 200 feet of surface waters. While 200 foot buffers are preferred for Tier 2 sites, at a minimum, cultivation areas and associated facilities shall not be located or occur within 100 feet of any Class I or II watercourse or within 50 feet of any Class III watercourse or wetlands. The Regional Water Board or its Executive Officer may apply additional or alternative[4] conditions on enrollment, including site-specific riparian buffers and other BMPs beyond those identified in water resource protection plans to ensure water quality protection.

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

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

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

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

The current cultivation areas are in compliance with the Order at this time. The green house cultivation areas are located up on a major ridgetop far from watercourses. The nearest watercourse is at least 250 feet away from these greenhouses. The small outdoor cultivation areas located in the southeast portion of the property are approximately 180 feet from the nearest Class II watercourse, and at least 50 feet from the top of a small Class III watercourse. Buffers are heavily vegetated with trees and brush and are sufficiently wide enough to filter any discharges from production lands. Riparian buffers will continue to be maintained and excluded from operations.

A small, plastic lined rain catchment pond is located within the southeastern developed area. It is also used as a catchment for clean runoff water from the hydro-electric shed when it is in use. A small, manmade pond overflow channel is located between two of the outdoor cultivation areas. When pond overflows are slight, it seeps into the ground and does not flow off of the property. When pond overflows are heavy, it appears that it flows off of the property where it joins with the top of a small, natural, Class III watercourse approximately 100 feet above a confluence with a Class II watercourse. This pond does not contain any chemicals and is relatively free of sediment. On the assessment date, 2/23/16, the pond level was significantly lower than the overflow level, thus pond overflow was not occurring and could not be observed. The overflow channel is shallow and not deeply incised which is an indication that overflows are not occurring at high velocities and are not transporting sediment. It does not appear that pond overflows reaching the Class III watercourse would represent a significant erosion threat, but it is unknown. During periods of pond overflows, monitoring should take place at this site to determine whether or not there is sediment transport occurring and to determine an effective mitigation measure if necessary.

4. Spoils Management

a. Spoils[5] shall not be stored or placed in or where they can enter any surface water.
b. Spoils shall be adequately contained or stabilized to prevent sediment delivery to surface waters.
c. Spoils generated through development or maintenance of roads, driveways, earthen fill pads, or other cleared or filled areas shall not be sidecast in any location where they can enter or be transported to surface waters.

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

In compliance at this time. Spoils related to roads, driveways, or earthen fill pads were not located where they could be transported into watercourses. Constructed flats near the west property line that contain the majority of the cultivation areas were sited far from watercourses. Cultivation related spoils other than within the immediate vicinity of the cultivation areas were not being stored on the property on the date of the assessment, 2/23/16. In the future, continue to treat spoils as stated in Standard Condition 4. a. b. and c. above.

5. Water Storage and Use:

a. Size and scope of an operation shall be such that the amount of water used shall not adversely impact water quality and/or beneficial uses, including and in consideration with other water use by operations, instream flow requirements and/or needs in the watershed, defined at the scale of a HUC-12[6] watershed or at a smaller hydrologic watershed as determined necessary by the Regional Water Board Executive Officer.
b. Water conservation measures shall be implemented. Examples include use of rainwater catchment systems or watering plants with a drip irrigation system rather than with a hose or sprinkler system.
c. For Tier 2 Dischargers, if possible, develop off-stream storage facilities to minimize surface water diversion during low flow periods.
d. Water is applied using no more than agronomic rates.[7]
e. Diversion and/or storage of water from a stream should be conducted pursuant to a valid water right and in compliance with reporting requirements under Water Code section 5101.
f. Water storage features, such as ponds, tanks, and other vessels shall be selected, sited, designed, and maintained so as to insure integrity and to prevent release into waters of the state in the event of a containment failure.

[6] See definition and link to maps at: http://water.usgs.gov/GIS/huc.html
[7] "Agronomic rates" is defined as the rates of fertilizer and irrigation water that a plant needs to enhance soil productivity and provide the crop or forage growth with needed nutrients for optimum health and growth, without having any excess water or nutrient percolate beyond the root zone.

In compliance at this time. A well (approximately 65 feet deep) provides all of the irrigation water for the cultivation operation. It is located up on a ridge far from any watercourses. A solar panel powers the well pump for the filling of nearby water storage tanks. Water is gravity fed down to the cultivation areas and the developed area. There are approximately 7 storage tanks with a total capacity of approximately 30,000 gallons located near the well site. Water tanks are located on stable, flat surfaces far from watercourses.

There is also a surface diversion (POD) in use on the property. It is used outside of the forbearance period for domestic use and for generation of electricity in the property's onsite hydro-electric generator. During the agreed upon forbearance period, the well supplies the domestic water use and the use of the hydro-electric generator is discontinued. When the hydro-electric generator is in use, water flows out of the hydro-electric shed and is channeled onto the ground a short distance to a plastic lined rain catchment pond. The hydro-electric shed is identified by an "H" on the WRPP

Map. This pond is approximately 100 feet long by 55 feet wide. The pond is not used for the cultivation activities. It is used strictly for recreation and would be used for emergency fire suppression if necessary.

The surface diversion (POD) intake is situated in a Class II watercourse. It is plumbed to a single holding tank located downslope of the POD. It is equipped with a float shutoff valve so that diversions cease when the holding tank is filled to capacity. The holding tank is also plumbed to the developed area downslope where the house and the hydro-electric generator are located. A Lake and Streambed Alteration Agreement with CA Dept. of Fish and Wildlife is currently being applied for, for the POD which includes the diversion for the onsite hydro-electric generator and for domestic use. A Small Domestic Use Registration with the Division of Water Rights has been submitted.

6. Irrigation Runoff

Implementing water conservation measures, irrigating at agronomic rates, applying fertilizers at agronomic rates and applying chemicals according to the label specifications, and maintaining stable soil and growth media should serve to minimize the amount of runoff and the concentration of chemicals in that water. In the event that irrigation runoff occurs, measures shall be in place to treat/control/contain the runoff to minimize the pollutant loads in the discharge. Irrigation runoff shall be managed so that any entrained constituents, such as fertilizers, fine sediment and suspended organic particles, and other oxygen consuming materials are not discharged to nearby watercourses. Management practices include, but are not limited to, modifications to irrigation systems that reuse tailwater by constructing off-stream retention basins, and active (pumping) and or passive (gravity) tailwater recapture/redistribution systems. Care shall be taken to ensure that irrigation tailwater is not discharged towards or impounded over unstable features or landslides.

The landowner irrigates at an agronomic rate with a drip irrigation system that does not produce runoff. Cultivation was not actively occurring on the assessment date of 2/23/16, so irrigation was not observed. The landowner's two greenhouse cultivation areas are located at least 250 feet upslope from the nearest watercourse. These contain three greenhouses at each site. One totals approximately 6,000 square feet and the other totals approximately 5,700 square feet. There are four small outdoor cultivation areas located in the southeastern developed area. These total approximately 4,700 square feet of cultivation area. Also approximately 600 square feet of indoor cultivation area was located in the barn in the southeastern developed area. Given the distances to downstream watercourses and irrigation rates, there is no hydrologic connectivity via irrigation surface flow from the cultivation sites to any downstream watercourses.

7. Fertilizers and Soil Amendments

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

In compliance at this time. In order to remain in compliance with Standard Condition 7, the landowner shall store all fertilizers, potting soils, composts, and soil amendments in sheds, covered areas, or tarped in a manner in which they cannot be transported to surface waters or such that nutrients or other pollutants cannot be leached into groundwater. Fertilizers and soil amendments shall be applied per packaging instructions and at agronomic rates. Fertilizing at an agronomic rate

will help to prevent nutrients from leaving the site during, and after the growing season. A large barn in the southeastern developed area is available for the storage of chemicals and fertilizers. A cabin being converted into storage, along with small temporary storage sheds are located in the northwestern part of the property. These provide adequate indoor covered storage for chemicals and fertilizers.

8. Pesticides/Herbicides

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

The landowner does not use any chemical pesticides and herbicides. Any pesticide products used on this property in the future shall be consistent with product labelling, and used and stored in a manner that ensures that they will not enter or be released into the surface or ground waters.

9. Petroleum products and other chemicals

a. Petroleum products and other liquid chemicals, including but not limited to diesel, biodiesel, gasoline, and oils shall be stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage tanks and containers must be of suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature.
b. Above ground storage tanks and containers shall be provided with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation.
c. Dischargers shall ensure that diked areas are sufficiently impervious to contain discharged chemicals.
d. Discharger(s) shall implement spill prevention, control, and countermeasures (SPCC) and have appropriate cleanup materials available onsite.
e. Underground storage tanks 110 gallons and larger shall be registered with the appropriate County Health Department and comply with State and local requirements for leak detection, spill overflow, corrosion protection, and insurance coverage.

Electricity on the southeast developed area, which includes the house and barn is provided by a large diesel generator and, at times by a hydro-electric generator. The diesel generator is housed within a 200 square foot, fully enclosed, generator shed shown as "G" on the WRPP Map. The shed is equipped with a cement floor and a cement perimeter foundation that serves as secondary containment for the contents of fuel inside of the generator. A backup generator is located on the back of the barn under cover of awnings. Fuel storage for the generator is two 1,000 gallon metal fuel tanks. Each fuel tank is equipped with metal secondary containment tanks, and both are housed inside of a fully enclosed, 168 square foot shed, shown as "F" on the WRPP Map.

Each of the upper, western cultivation areas are powered by portable 6500 watt generators and are refueled by portable five gallon plastic gas cans. Each of these generators is housed off of the ground on wooden platforms equipped with tin roofs. There were no sidewalls on these small structures as a protection from windblown precipitation. These small structures, should be enclosed if they are to be used to house gas cans during the rainy season. If equipped with side wind protection, these small structures would be acceptable storage locations for the portable generators and gas cans during the rainy season when they are not in use. Wooden, metal, or

plastic sheeting could be installed on these small wooden structures easily so as to provide adequate protection from windblown precipitation. As an alternative, there is also covered barn and storage space on the property for storage of these items during the offseason.

10. Cultivation-related wastes

Cultivation-related wastes including, but not limited to, empty soil/soil amendment/ fertilizer/pesticide bags and containers, empty plant pots or containers, dead or harvested plant waste, and spent growth medium shall, for as long as they remain on the site, be stored[8] at locations where they will not enter or be blown into surface waters, and in a manner that ensures that residues and pollutants within those materials do not migrate or leach into surface water or groundwaters.

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

In compliance at this time. Storing of cultivation wastes was not taking place on the property during the assessment. Cultivation wastes are periodically taken to the nearest waste disposal area. Dead and harvested plant waste is composted or burned near the cultivation areas, far from any watercourses. In order to remain in compliance with Standard Condition 10 above, all cultivation-related waste in the form of empty bags, containers, pots and, dead or harvested plant waste and spent growth medium shall be stored where they will not enter or be blown into surface waters, or removed from the site and disposed of properly. Cultivation-related wastes that contain residues or pollutants shall be stored in a manner that ensures that those materials do not leach into surface water or groundwaters. This can be achieved by following items 137 and 139 in Appendix B of the Order.

11. Refuse and human waste

a. Disposal of domestic sewage shall meet applicable County health standards, local agency management plans and ordinances, and/or the Regional Water Board's Onsite Wastewater Treatment System (OWTS) policy, and shall not represent a threat to surface water or groundwater.
b. Refuse and garbage shall be stored in a location and manner that prevents its discharge to receiving waters and prevents any leachate or contact water from entering or percolating to receiving waters.
c. Garbage and refuse shall be disposed of at an appropriate waste disposal location.

Sewage disposal on the property is a functioning septic system connected to the house. Waste water disposal on the property currently does not appear to be a threat to surface or ground water and was not causing a nuisance on the property. In order to be in full compliance with Standard Condition 11.a., the septic system on the property needs to meet applicable County health standards, local agency management plans and ordinances, and/or the Regional Water Board's Onsite Wastewater Treatment System (OWTS) policy. See Appendix B. Item 142 of the Order.

Household garbage and refuse was not accumulated or being stored on the property on the assessment date, 2/23/16. Household garbage as well as non-biodegradable cultivation waste is stored in an eight cubic yard dumpster on site and periodically hauled to the dump when it is full. The dumpster is equipped with a plywood lid in order to keep out precipitation as well as animals.

In order to be in compliance with Standard Condition 11. b. and c. above, 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. This can be accomplished by storing garbage in covered containers during the winter. Garbage and refuse shall be disposed of at an appropriate waste disposal location. See Appendix B. Item 141 of the Order.

12. Remediation/Cleanup/Restoration Remediation/cleanup/restoration activities may include, but are not limited to, removal of fill from watercourses, stream restoration, riparian vegetation planting and maintenance, soil stabilization, erosion control, upgrading stream crossings, road outsloping and rolling dip installation where safe and suitable, installing ditch relief culverts and overside drains, removing berms, stabilizing unstable areas, reshaping cutbanks, and rocking native-surfaced roads. Restoration and cleanup conditions and provisions generally apply to Tier 3 sites, however owners/operators of Tier 1 or 2 sites may identify or propose water resource improvement or enhancement projects such as stream restoration or riparian planting with native vegetation and, for such projects, these conditions apply similarly. Appendix B accompanying this Order includes environmental protection and mitigation measures that apply to cleanup activities such as: temporal limitations on construction; limitations on earthmoving and construction equipment; guidelines for removal of plants and revegetation; conditions for erosion control, limitations on work in streams, riparian and wetland areas; and other measures.

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

Pictures

Pictures 1 and 2: These are pictures of the inlet and outlet of the 24 inch culvert crossing of a Class II watercourse at Map Point 1. Photo date 2/23/2016

Pictures

Pictures 3 and 4: These are pictures of the inlet and outlet of the 24 inch culvert crossing of a Class II watercourse at Map Point 2. Photo date 2/23/2016

Pictures

Pictures 5 and 6: These are pictures of the outlet and the downspout of the 24 inch culvert crossing of a Class II watercourse at Map Point 3. Photo date 2/23/2016

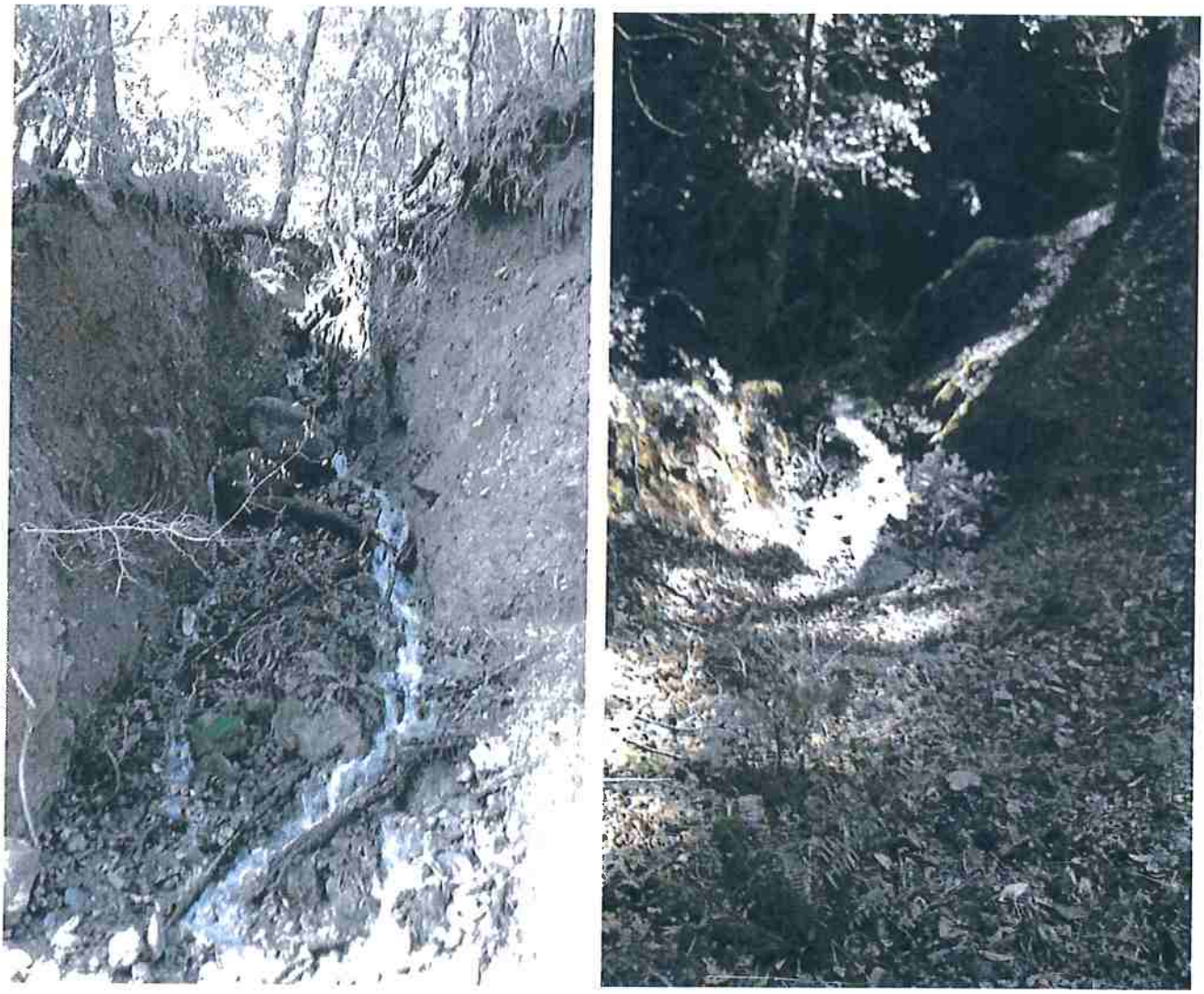
Pictures

Pictures 7 and 8: These are pictures of the inlet area of the 24 inch diameter culvert crossing at Map Point 4. The picture on the left is the inlet. The picture on the right is taken looking upstream from the inlet. Photo date 2/23/2016

Pictures

Pictures 9 and 10: These are pictures of the outlet of the 24 inch diameter culvert crossing at Map Point 4. The picture on the left shows the outlet. The picture on the right shows the same outlet as well as the outlet of the crossing at Map Point 5 in the distance. Photo date 2/23/2016

Pictures



Pictures 11 and 12: These are pictures taken at the 24 inch diameter culvert crossing at Map Point 5. The picture on the left is looking upstream from the inlet. The picture on the right is looking downstream from the outlet. Photo date 2/23/2016

Pictures

Pictures 13 and 14: These are pictures taken at the 24 inch diameter culvert crossing at Map Point 5. The picture on the left shows the inlet. The picture on the right is taken looking upstream from the crossing inlet and shows the 15 foot tall bank that is adjacent to the watercourse channel. Photo date 2/23/2016

Pictures

Pictures 15: This is a picture taken at the 24 inch diameter culvert crossing at Map Point 6. The picture shows the inlet. The waterline in the picture is from the POD described above which is located a short distance upstream. Photo date 2/23/2016

Pictures

Pictures 16: This is a picture taken at the 24 inch diameter culvert crossing at Map Point 6. The picture shows the outlet. The waterline in the picture is from the POD described above which is located a short distance upstream. Photo date 2/23/2016

Pictures

Picture 17: This is a picture taken at Map Point 8. It is a pulled crossing on a road that is not used by the landowner. No mitigation or monitoring is required at this site. Photo date 2/23/2016

Pictures

Picture 18: This is a picture taken at the surface point of diversion, just above Map Point 6. Photo date 2/23/2016

Pictures

Pictures 19 and 20: These are pictures of the two small generator / fuel can storage areas. These should be enclosed with wood, metal, or plastic sheeting to provide protection from side wind protection if they are to be used to store gas cans through the rainy season. As an alternative gas cans can be stored indoors, in the garage or many covered sheds on the property. Photo date 2/23/2016

Addendum 12A – Erosion Control Measures for Culvert Installation

Use a combination of mechanical and vegetative measures to minimize accelerated erosion from culvert installation. Erosion control measures may include the following:

1. Timing for soil stabilization measures within 100 feet of a watercourse or lake: For areas disturbed from May 1 through October 15, treatment shall be completed prior to the start of any rain that causes overland flow across or along the disturbed surface. For areas disturbed from October 16 through April 30, treatment shall be completed prior to any day for which a chance of rain of 30 percent or greater is forecast by the National Weather Service or within 10 days, whichever is earlier.

2. Within 100 feet of a watercourse or lake, the traveled surface of roads shall be treated to prevent waterborne transport of sediment and concentration of runoff that results from operations. Treatment may consist of, but not limited to, rocking, outsloping, rolling dips, cross drains, waterbars, slope stabilization measures, or other practices appropriate to site-specific conditions.

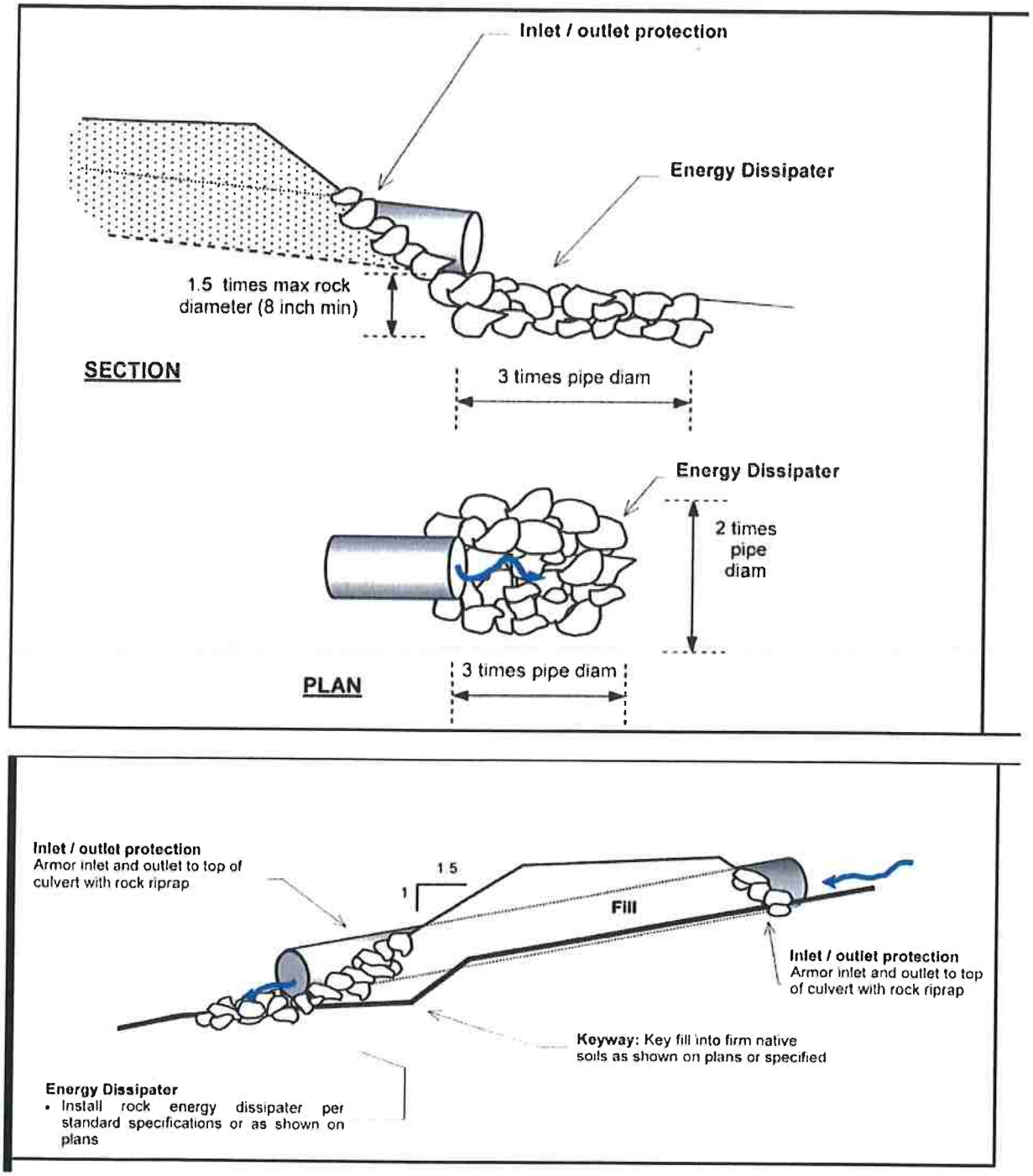
3. The treatment for other disturbed areas within 100 feet of a watercourse or lake, including: (A) areas exceeding 100 contiguous square feet where operations have exposed bare soil, (B) road cut banks and fills, and (C) any other area of disturbed soil that threatens to discharge sediment into waters in amounts deleterious to the quality and beneficial uses of water, shall be grass seeded and mulched with straw. Grass seed shall be applied at a rate exceeding 100 pounds per acre. Straw mulch shall be applied in amounts sufficient to provide at least 2- 4 inch depth of straw with minimum 90% coverage. Slash may be substituted for straw mulch provided the depth, texture, and ground contact are equivalent to at least 2 – 4 inches of straw mulch. Any treated area that has been subject to reuse or has less than 90% surface cover shall be treated again prior to the end of operations.

4. Within 100 feet of a watercourse or lake, where the undisturbed natural ground cover cannot effectively protect beneficial uses of water from sediment introduction, the ground shall be treated with slope stabilization measures described in #3 above per timing described in #1 above.

5. Sidecast or fill material extending more than 20 feet in slope distance from the outside edge of a roadbed, which has access to a watercourse or lake, shall be treated with slope stabilization measures described in #3 above. Timing shall occur per #1 above unless outside 100 feet of a watercourse or lake, in which completion date is October 15.

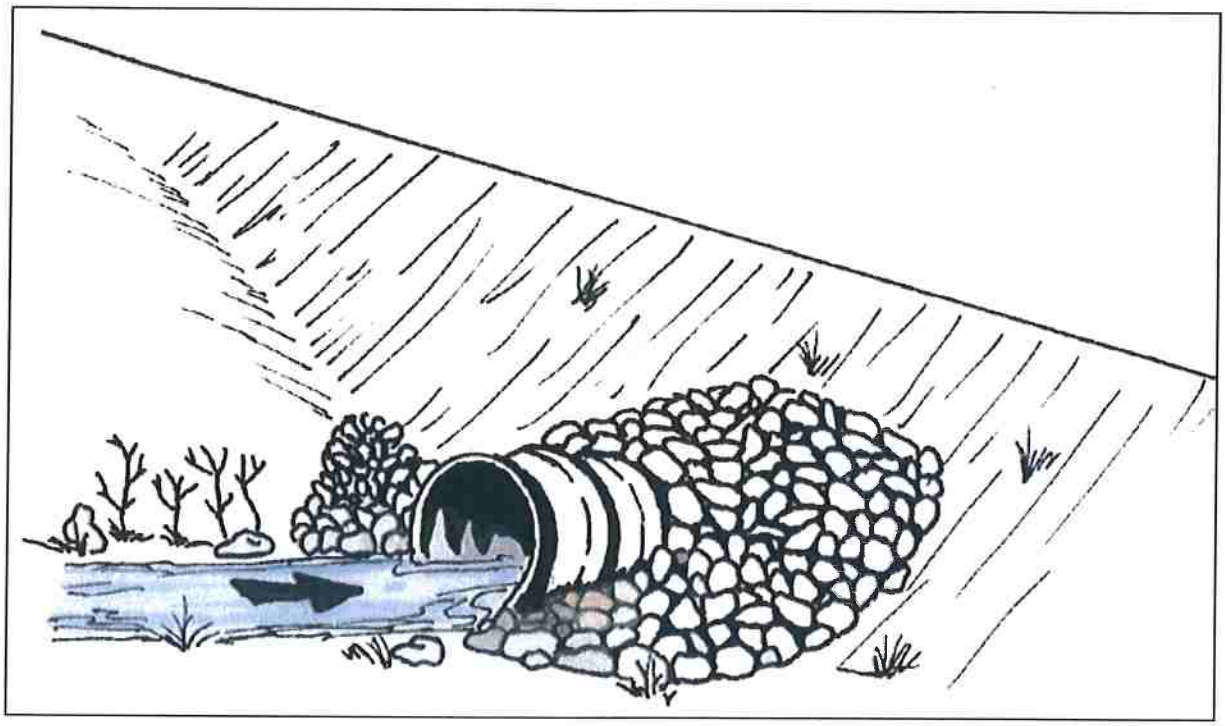
6. All roads shall have drainage and/or drainage collection and storage facilities installed as soon as practical following operations and prior to either (1) the start of any rain which causes overland flow across or along the disturbed surface within 100 feet of a watercourse or lake protection, or (2) any day with a National Weather Service forecast of a chance of rain of 30 percent or more, a flash flood warning, or a flash flood watch.

Culvert Installation Specifications



Riprap installed to protect the inlet and outlet of a stream crossing culvert from erosion or for energy dissipation should be keyed into the natural channel bed and banks to an approximate depth of about 1.5x the maximum rock thickness. Riprap should be placed at least up to the top of the culvert at both the inlet and outlet to protect them from splash erosion and to trap any sediment eroded from the newly constructed fill slope above.

Culvert Installation Specifications



Rock armor used for inlet and outlet protection (i.e., not as energy dissipation) does not have to be sized to protect against high velocity scour. If the culvert is properly sized and its length is adequate, it should be able to transmit flood flows without scouring the inlet or eroding the outlet around the culvert. Armor shown here is designed to protect the culvert outlet and basal fill from splash erosion and from occasional submergence and currents within standing water (at the inlet) when the culvert plugs. Importantly, inlet and outlet armor also serves to trap sediment that has been eroded or slides down the new constructed fill face in its first several years, until the slope becomes well vegetated.

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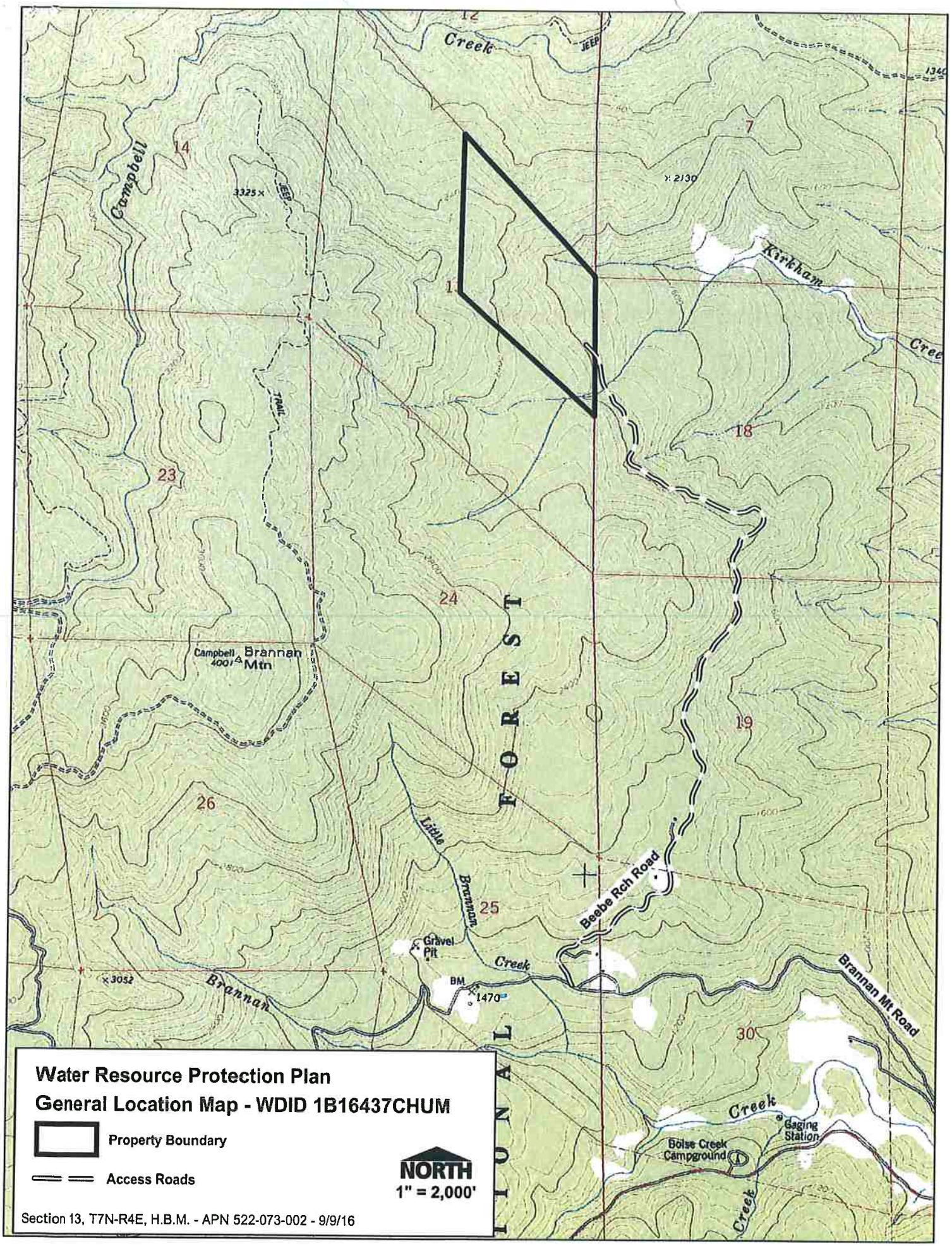
Culvert Installation Specifications

- New culvert installations shall be sized to accommodate a 100-year storm.
- New culverts shall be placed at stream gradient, or have downspouts, or have energy dissipaters at outfall.
  - Align culverts with the natural stream channel orientation to ensure proper function, prevent bank erosion and minimize debris plugging.
  - Place culverts at the base of the fill and at the grade of the original streambed or install a downspout past the base of the fill. Downspouts should only be installed if there are no other options.
  - Culverts should be set slightly below the original stream grade so that the water drops several inches as it enters the pipe.
  - Culvert beds should be composed of rock-free soil or gravel, evenly distributed under the length of the pipe.
  - Compact the base and sidewall material before placing the pipe in its bed.
  - Lay the pipe on a well-compacted base. Poor basal compaction will cause settling or deflection in the pipe and can result in separation at a coupling or rupture in the pipe wall.
  - Backfill material should be free of rocks, limbs or other debris that could dent or puncture the pipe or allow water to seep around the pipe.
  - Cover one end of the culvert pipe, then the other end. Once the ends are secure, cover the center.
  - Tamp and compact backfill material throughout the entire process, using water as necessary for compaction.
  - Backfill compacting will be done in 0.5 – 1.0 foot lifts until 1/3 of the diameter of the culvert has been covered.
  - Push layers of fill over the crossing to achieve the final design road grade, at a minimum of one-third to one-half the culvert diameter.
- Critical dips shall be installed on culvert crossings to eliminate diversion potential.
- Road approaches to crossings shall be treated out to the first drainage structure (i.e. waterbar) or hydrologic divide to prevent transport of sediment.
- Road surfaces and ditches shall be disconnected from streams and stream crossings to the greatest extent feasible. Ditches and road surfaces that cannot be feasible disconnected from streams or stream crossings shall be treated to reduce sediment transport to streams.
- If downspouts are used they shall be secured to the culvert outlet and shall be secure on fill slopes.
- Culverts shall be long enough so that road fill does not extend or slough past the culvert ends.
- Inlet of culverts and associate fill shall be protected with appropriate measures that extend at least as high as the top of the culvert.
- Outlet of culverts shall be armored with rock if road fill sloughing into channel can occur.
- Armor inlets and outlets with rock, or mulch and seed with grass as needed (not all stream crossings need to be armored).
- Where debris loads could endanger the crossing a debris catchment structure shall be constructed upstream of the culvert inlet.
- Bank and channel armoring may occur when appropriate to provide channel and bank stabilization. Stabilize the site pursuant to Addendum 12A.



Water Resource Protection Plan

General Location Map - WDID 1B16437CHUM

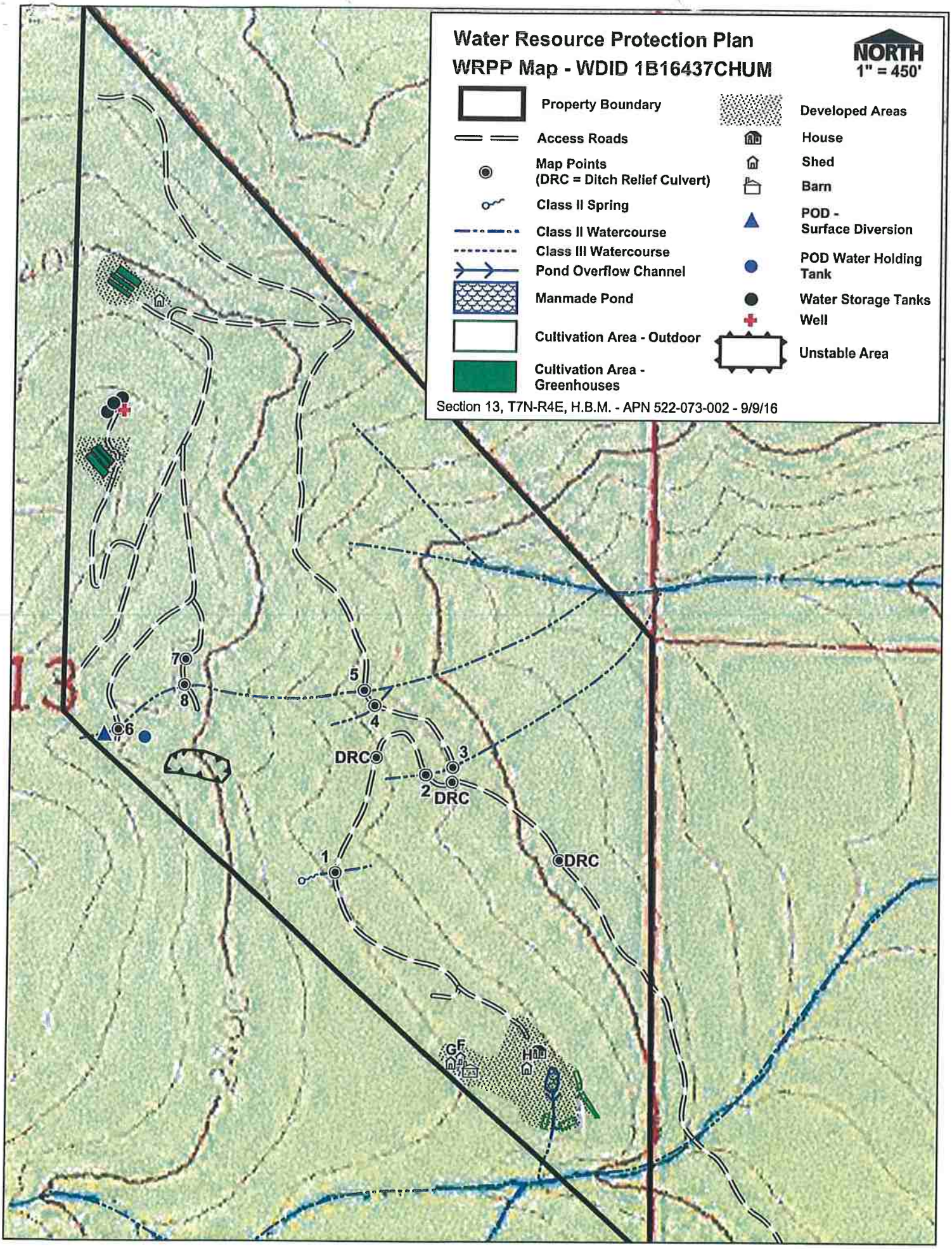
Property Boundary

Access Roads

NORTH

1" = 2,000'

Section 13, T7N-R4E, H.B.M. - APN 522-073-002 - 9/9/16


Water Resource Protection Plan
WRPP Map - WDID 1B16437CHUM
NORTH
1" = 450'
Property Boundary
Access Roads
Map Points
(DRC = Ditch Relief Culvert)
Class II Spring
Class II Watercourse
Class III Watercourse
Pond Overflow Channel
Manmade Pond
Cultivation Area - Outdoor
Cultivation Area - Greenhouses
Developed Areas
House
Shed
Barn
POD - Surface Diversion
POD Water Holding Tank
Water Storage Tanks
Well
Unstable Area
Section 13, T7N-R4E, H.B.M. - APN 522-073-002 - 9/9/16
13
1
2
3
4
5
6
7
8
DRC
DRC
DRC
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