Wetland Delineation Report

APN: 210-041-011

October 2019

Prepared For:

Credo RA, LLC

Permit Application No. 12215

Prepared By:

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Table of Contents

Appendices

List of Figure

1.0 Introduction

1.1 Purpose and Need

This document was prepared for Credo RA, LLC in response to a 6 May 2019 correspondence from the Humboldt County Cannabis Services Division requesting a wetland delineation for an area near a cultivation activity on the 160-acre property owned by Rados Milojkovic of Credo RA, LLC. The delineation was performed to evaluate the presence of jurisdictional wetlands and identify wetland boundaries within the study area. This report is based on the fieldwork performed on 16 October 2019.

1.2 Project Description

Credo RA, LLC currently holds an interim permit for 12,105 ft² of existing mixed light cultivation under Humboldt County's Commercial Medical Marijuana Land Use Ordinance (CMMLUO). Credo RA, LLC has also obtained a provisional cannabis cultivation license for a Medium Mixed-Light Tier 1 license type (License No. PAL18-0000269) under California Department of Food & Agriculture (CDFA). The applicant is seeking a Conditional Use Permit (CUP) (Case No.: PLN-12215-CUP) to move forward with the project, on which this wetland delineation report is contingent.

2.0 Environmental Setting

2.1 Project Location

The project is located approximately 2.46 miles south of a private drive south of State Hwy 36 in the Bridgeville area (Section 16, Township 1 North, Range 4 East) of Humboldt County, California (*Figure 1)*. The project is located on a property at APN: 210-041-011 within the U.S. Geological Survey's (USGS) Larabee Valley 7.5-minute quadrangle map. The USDA Forest Service CALVEG ("Classification and Assessment with Landsat of Visible Ecological Groupings") system classifies the property and project area as Douglas fir (DFR). The parcel is zoned Timber Production Zone (TPZ) and classified as Timberland (T) under the current general plan.

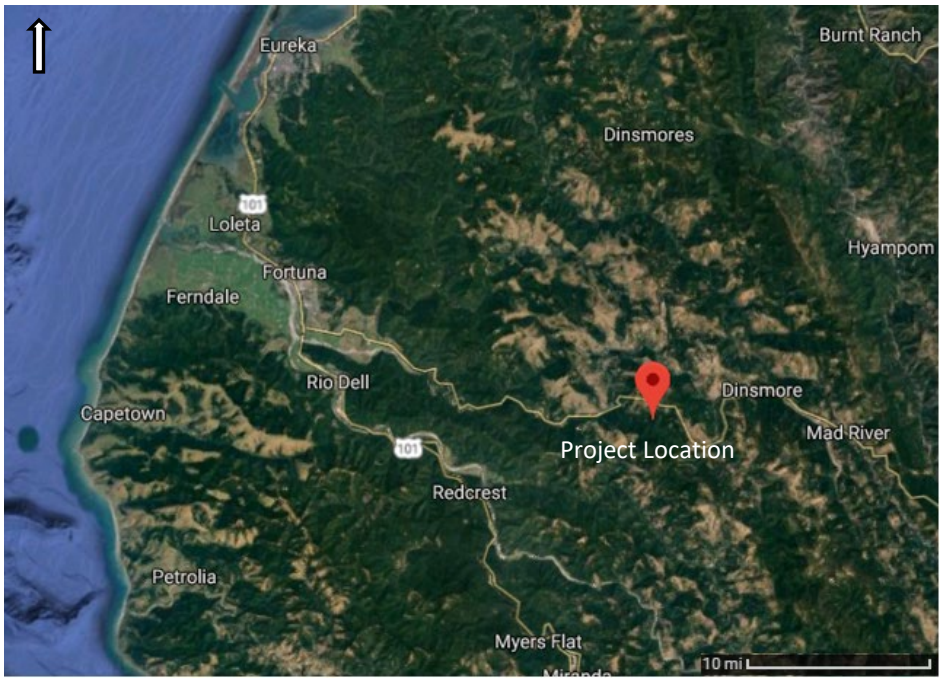

Figure 1. Project Location (accessed on Google Maps)

2.2 Soil, Topography, Hydrology

The soil complex of the project area is composed primarily of Hoagland-Chalkmountain-Pasturerock complex, 15 to 50 percent slopes (4412). These soils consist of very deep, well-drained soils formed in colluvium and residuum derived from sandstone and mudstone. The main component of this soil, the Hoagland series, is a gravelly loam typically found on southeast concave or convex positions on mountain slopes under Douglas-fir and Oregon white oak with a groundcover of western swordfern (*Figure 2)*. The other geographically associated soils, the Chalkmountain and Pasturerock soil series, also consist of very deep, well drained soils formed in colluvium and residuum derived from sandstone and mudstone and found on similar landscape positions. The soil complex in the study area is not considered to be hydric.

These soils are thought to be located in areas which were previously grasslands and oak woodlands that have been invaded by Douglas-fir. Vegetation often associated with these soils include Douglas fir, tanoak, California black oak, Pacific madrone, California laurel, California huckleberry and western swordfern.

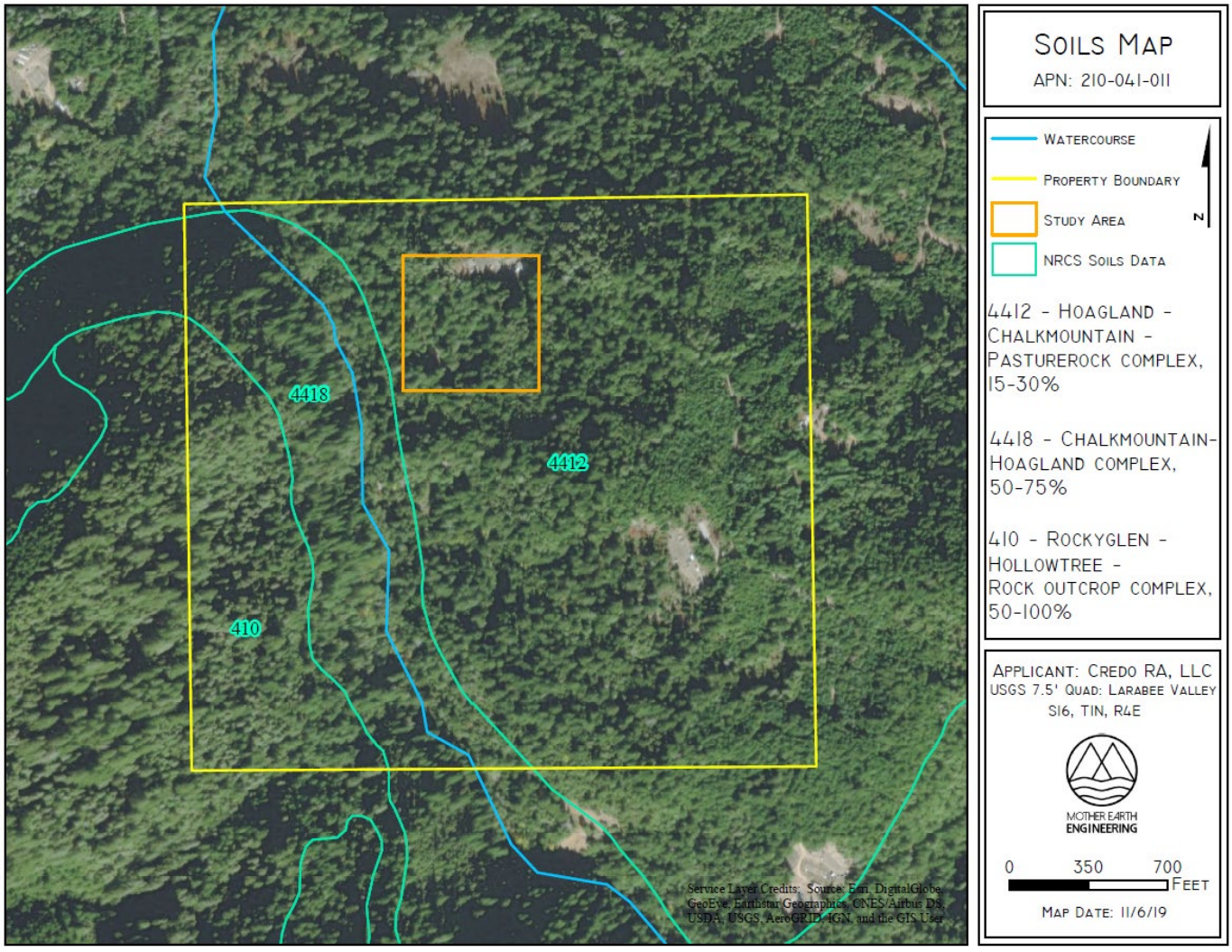

Figure 2. NRCS Soil Survey map of the subject property. The study area outlined in orange is composed primarily of the Hoagland-Chalkmountain-Pasturerock complex.

The study area is situated in a soft, open depression at the base of a hillside on a gently west facing aspect. The area is mapped as possessing high levels of instability in the Humboldt County GIS database. The study area is approximately 1,850 to 1,875 ft in elevation (*Figure 3)*.

A perennial, non-fish bearing stream (Class II watercourse) runs approximately 600 ft west of the study area flowing north towards Little Larabee Creek. The area is in the Lower Van Duzen River watershed and the Hoagland Creek – Van Duzen River subwatershed[1].

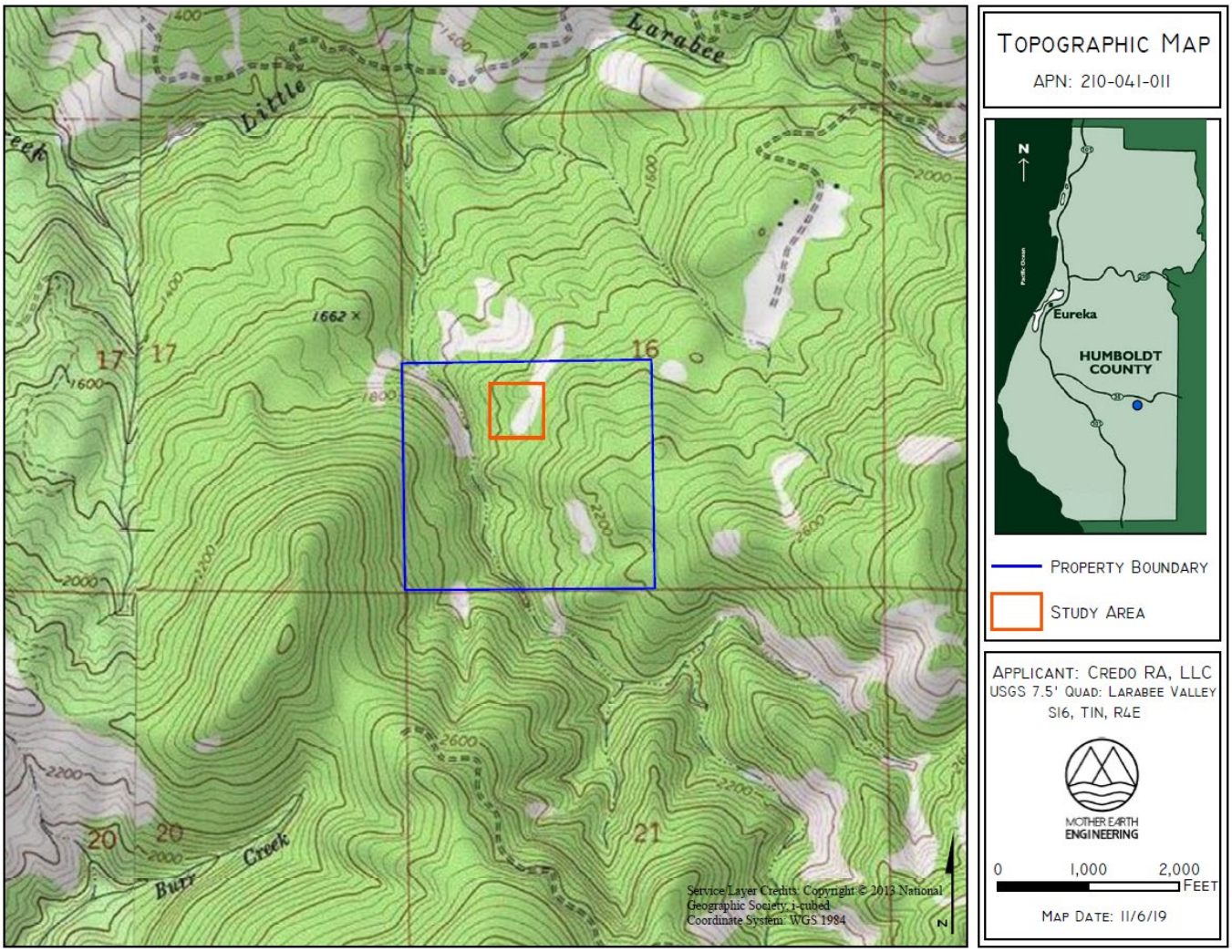

Figure 3. Topographic overview of subject property. Study area is outlined in orange.

3.0 Methods

Mother Earth Engineering staff conducted a site visit on 16 October 2019 to evaluate the presence of jurisdictional wetlands and identify wetland boundaries within the study area. Prior to the site visit, several sources of data were reviewed for any previously mapped wetlands in conjunction with soil type, weather records, and historic aerial photographs of the project area. The National Wetland Inventory (NWI) maps

[1] Caltrans Water Quality Planning Tool available at: http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx.

indicate a seasonally flooded, intermittent riverine wetland system along the Class II watercourse 600 ft west of the study area (*Figure 4*).

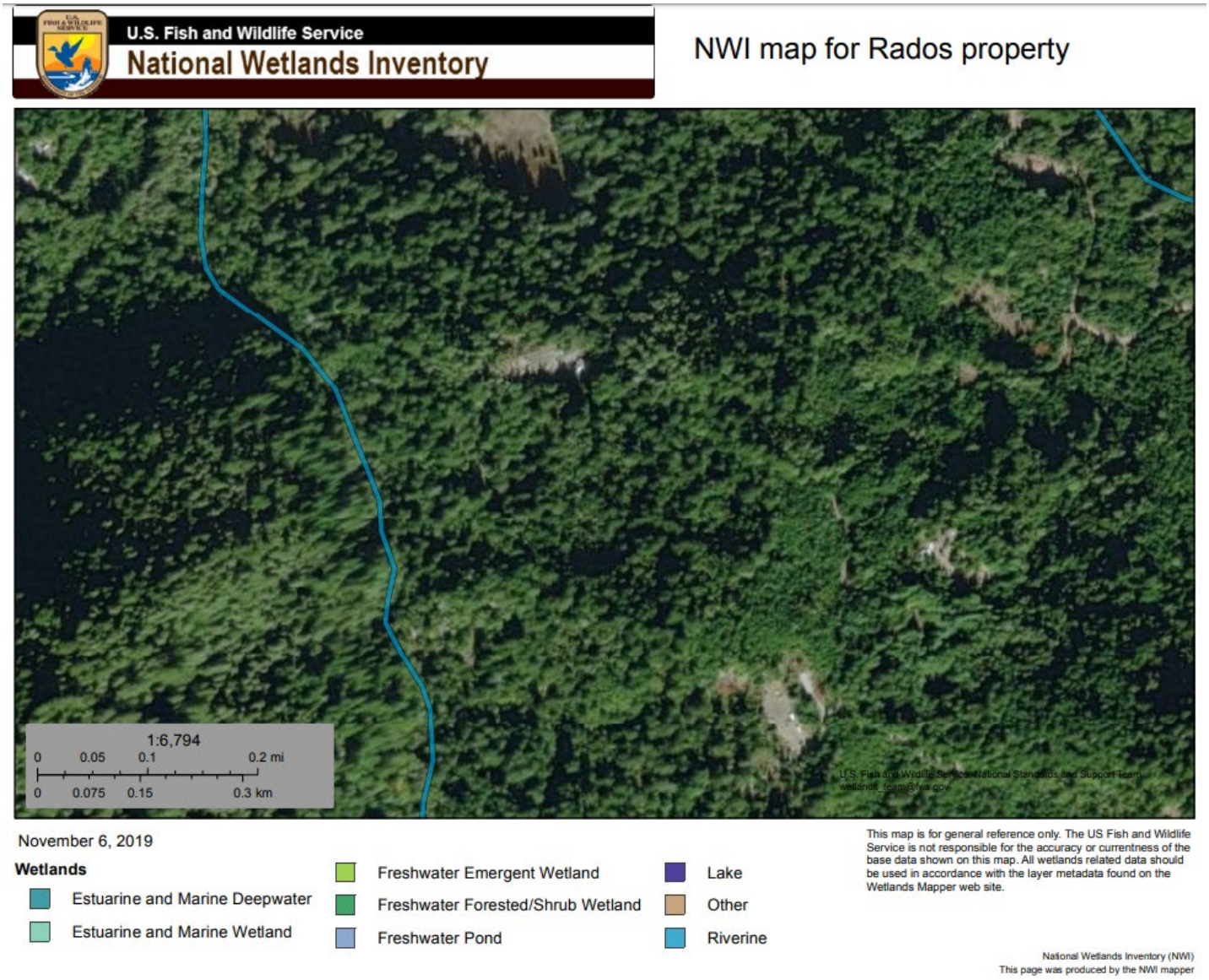

Figure 4. NWI map for Rados property. A seasonally flooded, intermittent Riverine wetland system is mapped along the Class II watercourse west of the study area. No other wetlands have been previously indicated.

The conditions on 16 October 2019 were overcast with partly cloudy skies. According to Oregon State University's PRISM Climate group[2], the last rain event in the area occurred on 30 September 2019 with 0.53 inches of precipitation. Approximately three (3) field hours were spent conducting routine on-site methods as described in the *Corps of Engineers Wetlands Delineation Manual* (1987 Manual), and the *Regional*

[2] Oregon State University's Northwest Alliance for Computational Science and Engineering (NACSE) PRISM Climate Group data accessed: http://www.prism.oregonstate.edu/

Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010; Regional Supplement).

Environmental criteria for wetlands, as defined in the 1987 Manual include:

- The prevalent vegetation is hydrophytic;
- The soils present have been classified as hydric or possess reducing soil characteristics; and,
- The area is either permanently or periodically inundated at mean water depths less than or equal to 6.6 feet, or the soil is permanently or periodically saturated to the surface during the growing season.

The Routine Determination method outlined in the 1987 Manual was used in conjunction with procedures outlined in the Regional Supplement to identify and delineate wetlands within the project limits. Routine determinations involve simple, rapidly applied methods that result in sufficient qualitative data for identifying wetland and non-wetland areas.

The study area was walked and observed for evidence of potential wetland hydrology based on local topography and presence of hydrophytic vegetation. Data sample points were chosen based on site features for potential wetland areas and distinct upland areas to show contrast between wetland and upland field conditions.

The criterion for wetland vegetation is a dominance of hydrophytic species. Vegetation data at each sample point is identified by strata (tree, shrub, herbaceous and vine layer) and percent cover to determine dominant species. Each plant is identified to species level and classified as to whether or not they were wetland indicators in accordance to National Wetland Plant List (NWPL) 2016 Final Ratings.

Soils pits were examined at the sample points for evidence of redoximorphic features for hydric soil indications. The 1987 Manual's procedures were combined with the Natural Resources Conservation Service's (NRCS) definition of hydric soils presented in Changes in Hydric Soils of the United States and Field Indicators of Hydric Soils in the United States, Version 6.0 [United States Department of Agriculture (U.S.D.A.) 1995 and 2006, respectively]. Soil color was evaluated using *Munsell Soil Color Charts* (Munsell 2000).

The project was examined for field indicators of wetland hydrology. According to USACE (1987 and 2012), wetland hydrology consists of permanent or periodic inundation, or soil saturation to the surface during the growing season. If these indicators were present within the sample plots, the hydrology criterion was met.

Once the boundary of the wetland is determined from the data sampling effort, the edge of the wetland is flagged in the field and surveyed in order to produce a map of the wetland that occurs in the study area. Representative photographs of the sample points and wetland area were taken during the assessment (*Appendix A*).

A Garmin Rino 755t GPS was used for GPS points and tracking, and ArcMap 10.6.1 was used to create wetland maps and buffers.

4.0 Results

The study area can be described as an open depression area at the base of a hillside on a gently west facing Douglas Fir habitat type. One (1) jurisdictional wetland was identified within the study area, covering approximately 0.20 acres. The 0.20-acre wetland can be classified as a small, palustrine freshwater wetland (Cowardin *et al,* 1979) located in a depressional flat area (*Figure 5).*

Upon investigation, the area appears to receive water from hillside sheet flow and an undersized 12-inch diameter corrugated plastic culvert on an intermittent (Class III) watercourse. A Timber Harvest Plan (THP 1-98-434 HUM) of this area reveals that the THP recommended installation of a new culvert (no specific diameter) to "divert watercourse into flat natural wet area". A CDFW Lake and Streambed Alteration Agreement notification provided by Timberland Resource Consultants recommended a culvert upgrade to a minimum 18-inch diameter culvert.

In the upland areas (SP-1 and SP-3), the dry soils supported an overstory of Douglas-fir (*Pseudotsuga menziesii*), tanoak (*Notholithocarpus densiflorus*) and California laurel (*Umbellaria californica*). The shrub and sapling layer consisted of western swordfern (*Polystichum munitum*) and saplings of big leaf maples (*Acer macrophyllum*), tanoaks and California laurels. The herb and vine layers were sparse and contained species such as redwood sorrel (*Oxalis oregana*), Pacific blackberry (*Rubus ursinus*), and poison oak (*Toxicodendron diversilobum*).

The transition line into the wet area was distinct with a noticeable shift in vegetation composition. The dominant plant species identified at both wet sample areas (SP-2 and SP-4) consisted of California laurel, slough sedge (*Carex obnupta*), poison oak, woodfern (*Dryopteris expansa*) and great horsetail (*Equisetum telmateia*).

The soil pits were analyzed for the presence of hydric soil indicators including the presence of redoximorphic features in soils with chromas of 2 or less and chromas of 1 or less that are not attributed to organic matter. Both soil pits at SP-2 and SP-4 had loamy clay textures, similar in color, and contained redox concentrations. Soil pits at SP-1 and SP-3 did not contain any redoximorphic features.

The hydrology of the area was based on evidence of sediment deposits and an observation of surface water present in a man-made ditch. No identifiable ordinary high water mark was found as an outlet of the area. The boundary of this wetland was identified and flagged due to presence of hydrophytic vegetation, hydric soils, and hydrology, in addition to topography of the landscape. Adjacent uplands were distinguished from the wetland by lack of hydric soils, lack of hydrology, lack of hydrophytic vegetation and/or the presence of upland plants.

Figure 5. Map of wetland extent and boundaries within the study area. A 50 ft buffer designated around the wetland is outside cultivation activities.

5.0 Regulatory Background

5.1 U.S. Army Corps of Engineers (USACE)

The USACE Regulatory Branch regulates activities that may discharge dredged or fill materials into "waters of the U.S." under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. This permitting authority applies to all "waters of the U.S." where the material (1) replaces any portion of a "waters of the U.S." with dry land or (2) changes the bottom elevation of any portion of any "waters of the U.S.". These fill materials include sand, rock, clay, construction debris, wood chips, and materials used to create any structure or infrastructure in these waters. The selection of disposal sites for dredged or fill material is done in accordance with guidelines specified in Section 404(b)(1) of the CWA, which were developed by the U.S. Environmental Protection Agency (USEPA).

5.2 Regional Water Quality Control Board (RWQCB)

The RWQCB is the primary agency responsible for protecting water quality in California through the regulation of discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The RWQCB's jurisdiction extends to all "waters of the State" and to all "waters of the U.S.," including wetlands (isolated and non-isolated).

Section 401 of the CWA provides the RWQCB with the authority to regulate, through a Water Quality Certification, any proposed, federally permitted activity that may affect water quality. Among such activities are discharges of dredged or fill material permitted by the USACE pursuant to Section 404 of the CWA. Section 401 requires the RWQCB to provide certification that there is reasonable assurance an activity with the potential for discharge into navigable waters will not violate water quality standards. Water Quality Certification must be based on findings that the proposed discharge will comply with water quality standards, which contain numeric and narrative objectives found in each of the nine RWQCBs' Basin Plans.

5.3 California Department of Fish and Wildlife

The CDFW has jurisdictional authority over wetland resources associated with rivers, streams, and lakes pursuant to the California Fish and Game Code (§§1600–1616). Activities of state and local agencies, as well as public utilities that are project proponents, are regulated by the CDFW under Section 1602 of the California Fish and Game Code.

Because the CDFW includes streamside habitats under its jurisdiction that, under the federal definition, may not qualify as wetlands on a project site, its jurisdiction may be broader than that of the USACE. Riparian forests in California often lie outside the plain of ordinary high water regulated under Section 404 of the CWA, and often do not have all three parameters (wetland hydrology, hydrophytic vegetation, and hydric soils) sufficiently present to be regulated as a wetland.

However, riparian forests are frequently included within CDFW regulatory jurisdiction under Section 1602 of the California Fish and Game Code.

The CDFW jurisdictional limits are not as clearly defined by regulation as those of the USACE. While they closely resemble the limits described by USACE regulations, they include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric and saturated soils conditions. In general, the CDFW extends jurisdiction from the top of a stream bank or to the outer limits of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place within or near a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish and other aquatic plant and/or wildlife species. It also includes watercourses that have a surface or subsurface flow that support or have supported riparian vegetation.

5.4 Humboldt County-Streamside Management Area

"Streamside Management Areas" (SMAs) [Section 3432(5) of the Humboldt County 1984 General Plan] are defined in the Humboldt County General Plan (Page G-8) and include a natural resource area along both sides

of streams containing the channel and adjacent land. Updates to the SMA guidance for cannabis activities are defined in the Environmental Impact Assessment Biological Resources Section[3].

Project applicants proposing development activities within a SMA or wetland areas are required to include a site-specific biological report prepared consistent with these regulations. The written report prepared by a qualified biologist is subsequently referred to CDFW for review and comment. If required, after agency review of the preliminary habitat assessment, protocol level surveys will be completed per recommendations by the Final Environmental Impact Report (FEIR) amendments to the Humboldt County Code Regulating Commercial Cannabis Activities[4].

5.5 Additional Laws and Policies

In addition to the above-mentioned policies, numerous other policies exist to protect wetlands, waters and biological resources including the California Environmental Quality Act (CEQA), California Endangered Species Act (CESA) and the Z'berg-Nejedly Forest Practice Act.

6.0 Conclusion and Discussion

Mother Earth Engineering staff conducted a site visit on 16 October 2019 to evaluate the presence of jurisdictional wetlands and identify wetland boundaries within the study area. This report is in response to a 6 May 2019 correspondence from the Humboldt County Cannabis Services Division requesting a wetland delineation for an area adjacent to cultivation activity on the 160-acre property owned by Rados Milojkovic of Credo RA, LLC.

Field observations were made in accordance with the *1987 Corps of Engineers Wetland Delineation Manual* and the *Regional Supplement: Western Mountains, Valleys, and Coast Region (Version 2.0)*. Upon site inspection, one (1) small 0.20-acre jurisdictional Palustrine Emergent wetland was identified within the study area. Palustrine Emergent Wetlands include all tidal and non-tidal wetlands dominated by persistent emergent vascular plants, emergent mosses or lichens, and all such wetlands that occur in tidal areas in which salinity due to ocean-derived salts is below 0.5 percent. The boundaries of the wetland were identified and flagged by the presence of hydrophytic vegetation, hydric soils, and hydrology, in addition to topography of the landscape. Adjacent uplands were distinguished from the wetland by lack of hydric soils, lack of hydrology, lack of hydrophytic vegetation and/or the presence of upland plants.

The subject wetland is designated with a 50 ft buffer around the delineation. It appears that all cultivation related activities are outside designated setbacks and buffers. All field pictures and data sheets for the wetland delineation area are included in *Appendix A* and *B* of this report. Additional consultation with agency staff including the California Department of Fish and Wildlife (CDFW), U.S. Army Corps of Engineers (USACE), Humboldt County and US Fish and Wildlife Service (USFW) will continue throughout the project application.

[3] https://humboldtgov.org/DocumentCenter/View/58840/Section-311-Biological-Resources-Revised-DEIRPDF

[4] Final Environmental Impact Report: Amendments to the Humboldt County Code Regulating Commercial Cannabis Activities. Prepared by Ascent Environmental. Accessed via https://humboldtgov.org/DocumentCenter/View/62689/Humboldt-County-Cannabis-Program-Final-EIR60mb-PDF. Accessed [September 2019]

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Appendix A

Field Pictures

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Picture No. 1	
October 16, 2019	
Description: Upland sample point SP-1 looking west.	

Picture No. 2	
October 16, 2019	
Description: North edge of wetland looking south.	

Picture No. 3	
October 16, 2019	
Description: View of wet area sample point SP-2 marked by red flag looking south.	

Picture No. 4	
October 16, 2019	
Description: View of upland area sample point SP-3 looking south with eastern edge of wetland on the right side.	

Picture No. 5	
October 16, 2019	
Description: View of wetland area sample point SP-4 looking west. Area dominated by slough sedge, poison oak and willows.	

Picture No. 6	
October 16, 2019	
Description: Another view of the subject wetland on the eastern edge looking southwest.	

Appendix B

Data Forms

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Rados site City/County: Bridgeville, Humboldt Sampling Date: ~~SP-1~~ 10/16/19

Applicant/Owner: Rados Milojkovic State: CA Sampling Point: SP-1

Investigator(s): R. Okuyama Section, Township, Range: S16, T1N, R4E

Landform (hillslope, terrace, etc.): hillslope - toe Local relief (concave, convex, none): concave Slope (%): <10

Subregion (LRR): A Lat: 40.46215 Long: -123.73611 Datum: WGS 84

Soil Map Unit Name: Hoagland - Chalkmaintain - Pasturerock complex NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	30	Y	FacU
2. Notholithocarpus densiflorus	12	No	–
3. Umbellaria californica	8	No	Fac
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 ft)			
1. Polystichum munitum	35	Y	FacU
2. Umbellaria californica	15	No	Fac
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Oxalis oregana	30	Y	FacU
2. Toxicodendron diversilobum	15	No	Fac
3. Rubus ursinus	10	No	FacU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 5 ft)			
1. –			
2. –			
	–	= Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10"	10YR 2/2	100	—	—	—	—		
10-20"	10YR 2/2	100	—	—	—	—	Fine Loamy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Rados site City/County: Bridgeville, Humboldt Sampling Date: 10/16/19

Applicant/Owner: Rados Milojkovic State: CA Sampling Point: SP-2

Investigator(s): R. Okuyama Section, Township, Range: S16, T1N, R1E

Landform (hillslope, terrace, etc.): hillslope - toe Local relief (concave, convex, none): concave Slope (%): 210

Subregion (LRR): A Lat: 40.46191 Long: -123.7367 Datum: WGS84

Soil Map Unit Name: Hoagland - Chalkmountain - Pastureрock complex NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Umbellaria californicus	20	Y	Fac
2. Pseudotsuga menziesii	5	NO	FacU
3.			
4.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 ft)			
1. Pryopteris exposa	10	Y	FacW
2. Equisetum telmateia	30	Y	FacW
3. Rubus ursinus	10	Y	Fac
4. ~~Toxicodendron diversilobum~~			
5.			
	58	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Toxicodendron diversilobum	25	Y	Fac
2. oxalis oregana	10	N	FacU
3. Carex obnupta	20	Y	Obl
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55	= Total Cover	
Woody Vine Stratum (Plot size: 5)			
1. Toxicodendron diversilobum	15	Y	Fac
2.			
	15	= Total Cover	

% Bare Ground in Herb Stratum 3

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/1	80	7.5YR 5/8	20	C	PL	loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- X Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- J FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water observed in pit ~ 3' away from sample point SP-2.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Rados Site City/County: Bridgeville, Humboldt Sampling Date: 10/16/19
Applicant/Owner: Rados Milojkovic State: CA Sampling Point: SP-3
Investigator(s): R. Okuyama Section, Township, Range: S16, T1N, R4E
Landform (hillslope, terrace, etc.): hillslope - toe Local relief (concave, convex, none): concave Slope (%): 10
Subregion (LRR): A Lat: 40.4181 Long: -123.73588 Datum: WGS84
Soil Map Unit Name: Hoagland-Chalkmountain-Pasturerock complex NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pseudotsuga menziesii	15	✓	FacU
2. Acer macrophyllum	20	✓	FacU
3. Umbellaria californica	15	✓	Fac
4. Notholithocarpus densiflorus	10	✓	NL
	60 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10 ft)			
1. Polystichum munitum	10	✓	FacU
2. ~~Umbel~~ Acer macrophyllum	3	No	FacU
3. Notholithocarpus densiflorus	2	No	NL
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)
Total Number of Dominant Species Across All Strata: ____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: SP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 4/2	100	-	-	-	-	Fine loamy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Rados Site City/County: Bridgeville, Humboldt Sampling Date: 10/16/19

Applicant/Owner: Rados Milojkovic State: CA Sampling Point: SP-4

Investigator(s): R. Okuyama Section, Township, Range: S16, T1N, R4E

Landform (hillslope, terrace, etc.): hillslope-toe Local relief (concave, convex, none): concave Slope (%): 2 to

Subregion (LRR): A Lat: 40.46161 Long: -123.73611 Datum: WGS84

Soil Map Unit Name: Hoagland-Chalkmountain-Pasturerock complex NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Umbellaria californicus	20	✓	FAC
2. Salix scouleriana	10	✓	FAC
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10 ft)			
1. Toxicodendron diversilobum	65	✓	FAC
2. Dryopteris expansa	35	✓	FACW
3.			
4.			
5.			
	100 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Carex obnupta	80	✓	OBL
2. Toxicodendron diversilobum	30	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/1	80	7.5YR 5/8	20	C	PL	loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): _____

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: