

ATTACHMENT 4C

Wetland Delineation Report



Aquatic Resources Delineation

High Point Honeydew Farms
(APN: 107-054-036)

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1. INTRODUCTION

The purpose of this report is to identify wetlands and other sensitive aquatic resources that could be impacted by commercial cannabis cultivation on APN: 107-054-036 near Honeydew (Appendix A). The Humboldt County Planning and Building Department has specifically raised concern (email to Austin Theriault, ETA Humboldt, on August 12, 2021) about an area mapped as wetland in the *National Wetlands Inventory* (NWI) (USFWS 2021) near the project area (Appendix B). The same polygon is shown on the Humboldt County *Web GIS* application.

2. DEFINITIONS

2.1. Waters of the United States

Waters of the United States are regulated by the U.S Army Corps of Engineers (Army Corps) under the Clean Water Act. Waters of the United States include, but are not limited to, territorial seas, waters used for interstate or foreign commerce and their tributaries, and waters adjacent to the aforementioned, including wetlands.

Army Corps jurisdiction in waters such as creeks and rivers includes the area below the ordinary high water mark, which is the line on the bank established by fluctuations of water that leave physical characteristics such as a distinct line on the bank, shelving, destruction of terrestrial vegetation, and presence of debris.

The Army Corps defines wetlands as:

“... areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

2.2. Waters of the State

Waters of the state are regulated by the State Water Resources Control Board (Water Board) under the Porter-Cologne Water Quality Control Act. Waters of the state are defined as:

"... any surface water or groundwater, including saline waters, within the boundaries of the state."

Waters of the State includes water in both natural and artificial channels.

The Water Board's definition of a wetland is:

"An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic

conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation."

2.3. Streamside Management Areas

The Humboldt County Streamside Management Areas and Wetlands Ordinance recognizes Streamside Management Areas (SMAs) along all streams and wetlands.

The SMAs for streams are defined as:

"One hundred (100) feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of perennial streams."

"Fifty (50) feet, measured as the horizontal distance from the top of bank or edge of riparian drip-line whichever is greater on either side of intermittent streams."

The SMAs for wetlands are defined as:

Seasonal wetlands = fifty (50) feet

Perennial wetlands = one hundred fifty (150) feet

3. ENVIRONMENTAL SETTING

3.1. Project Location

The parcel is located along Mattole Road approximately one mile north of Honeydew on the Bull Creek USGS quadrangle (Section 31, T2S, R1E) in Humboldt County (Figure 1).

3.2. Soil, Topography, and Hydrology

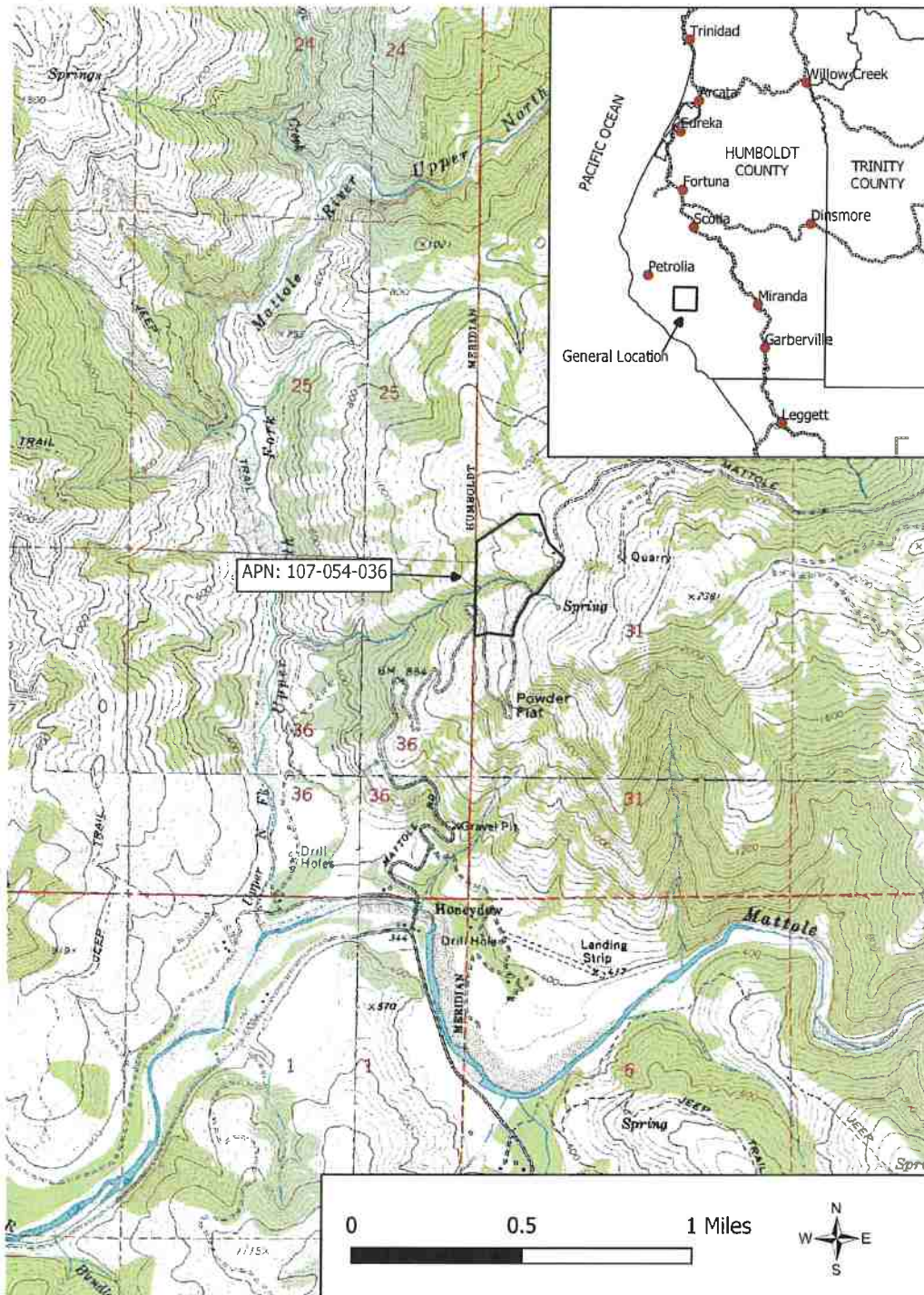
The soil types mapped on the parcel include Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes and Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes (United States Department of Agriculture, Natural Resource Conservation Service 2021) (Appendix C). These soil types are derived from sandstone and mudstone parent material. The major and minor soil components have non-hydric soil ratings.

The parcel is on a generally west-facing 25-50% slope. The development and cultivation areas are on flat graded terraces. The parcel includes a pond, a spring, and several small tributaries of the Upper North Fork Mattole River. The elevation ranges from approximately 1,200 to 1,600 feet above sea level.

3.3. Vegetation

The parcel is predominantly grassland and forests with a mix of Douglas-fir (*Pseudotsuga menziesii*) and hardwoods including canyon live oak (*Quercus chrysolepis*), and California bay (*Umbellularia californica*). The grasslands observed in the project area are generally dominated by non-native grasses such as wild oat (*Avena barbata*), rattlesnake grass (*Briza maxima*), soft chess (*Bromus hordeaceus*), Mediterranean barley (*Hordeum marinum*), and six weeks grass

Figure 1. Location Map.



(*Festuca myuros*), with native grasses such as blue wildrye (*Elymus glaucus* ssp. *glaucus*) at relatively low cover. The graded areas are also dominated by similar non-native grass and other herbaceous plants with occasional coyote brush (*Baccharis pilularis*). Plants associated with the spring and watercourses include giant chain fern (*Woodwardia fimbriata*) and lady fern (*Athyrium filix-femina*).

4. METHODS

Federal, State, and County wetland delineation methods follow the *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual Western Mountains, Valleys, and Coast Region (Version 2.0)* (Army Corps 2010). A positive wetland determination is made when all three wetland parameters (hydrophytic vegetation, hydric, soil, and wetland hydrology) are present.

The field work was conducted on September 2, 2021, by Kyle Wear, M.A. Mr. Wear is trained in wetland delineation by the Wetland Training Institute and has been conducting wetland delineations in northern California for over 15 years.

4.1. Hydrophytic Vegetation

The presence of hydrophytic vegetation is determined by the wetland indicator status of each plant species present using the *Western Mountains Valleys and Coast 2018 Regional Wetland Plant List* (Army Corps 2018). The indicator status of plants is based on the estimated probability of the species occurring in wetlands. The indicator status categories are:

Obligate Wetland Plants (OBL)	Almost always occur in wetlands	>99% frequency
Facultative Wetland Plants (FACW)	Usually occur in wetlands	67%-99%
Facultative Plants (FAC)	Equally occur wetlands and non-wetlands	33%-67%
Facultative Upland Plants (FACU)	Sometimes occur in wetlands	1%-33%
Obligate Upland Plants (UPL)	Rarely occur in wetlands	<1%

If more than 50% of the dominant plants across all vegetation strata (i.e. trees, shrubs, herbs) are OBL, FACW, or FAC, the vegetation is considered to be hydrophytic. Dominance of plants within the plots is determined using the "50/20" rule. This method involves estimating absolute cover of each plant in each vegetation stratum. Dominant plants include the plants with the highest cover that collectively or individually account for 50% of the total vegetation cover. Additional plants are considered dominant if their cover is at least 20%.

4.2. Hydric Soil

Indicators of hydric soil include, but are not limited to, redox concentrations, depleted matrix, a strong hydrogen sulfide (rotten egg) odor, and high organic matter content. Soil colors are determined by using a standard Munsell soil color chart (Gretag Macbeth 2000).

4.3. Wetland Hydrology

Indicators of wetland hydrology include, but are not limited to, surface water, high water table, soil saturation, sediment deposits, soil cracks, and oxidized root channels along living roots. Wetland hydrology criteria are met if there is surface water, or the water table is within 12 inches of the surface for more than 14 consecutive days during the growing season.

4.4. Other Aquatic Resources

Other aquatic resources include rivers, streams, ponds, lakes, and other waterbodies and any associated riparian vegetation.

5. RESULTS

The aquatic features in the vicinity of the NWI polygon include a perennial spring that flows into a watercourse that currently connects to a pond (Figure 2). There are three other main watercourses on the parcel.

The water from the spring was flowing on September 2, 2021, and down a portion of the stream channel, but became subsurface in the lower section of the channel toward the cultivation area. Plants associated with the spring include lady fern (*Athyrium filix-femina* [FAC]) and sword fern (*Polystichum munitum* [FACU]).

There are no wetlands associated with the stream channel below the spring. The upper portion of the stream flows through upland forest dominated by (*Pseudotsuga menziesii* [FACU]), canyon live oak (*Quercus chrysolepis* [UPL]), and California bay (*Umbellularia californica* [FAC]).

The lower portion of the stream just above the pond flows through upland grassland that is dominated by wild oat (*Avena barbata* [UPL]), rattlesnake grass (*Briza maxima* [UPL]), six weeks grass (*Festuca myuros* [FACU]), blue wildrye (*Elymus glaucus* ssp. *glaucus* [UPL]), and ox-eye daisy (*Lecanthemum vulgare* [FACU]) (Appendix D). There were no indicators of hydric soil and no indicators of wetland hydrology outside the channel in the lower (Class III) part of the stream near the cultivation area. There are also apple and other fruit trees in the lower part of the NWI polygon along the cultivation area.

The pond includes stands of non-native wetland plants including horticultural iris (*Iris pseudocorus* [OBL]) and umbrella plant (*Cyperus involuctraus* [FACU]) that were likely planted in the pond.

6. DISCUSSION AND RECOMMENDATIONS

The SMAs for the aquatic features include a 150-foot setback around the perennial spring, a 100-foot setback along the Class II watercourses, and a 50-foot setback along Class III watercourses. There is no riparian vegetation along the streams, thus the stream setbacks are measured from the top of the bank.

Figure 2. Aquatic Resources Map.



The lower portion of the stream channel adjacent to the northern cultivation area is proposed to be re-aligned and reconnected directly to the stream just to the north to bypass the pond. This will make it an off-stream, non-jurisdictional pond, and not subject to setbacks. A portion of the SMA along the stream will move north farther from the project area when the stream is re-aligned. The map (Figure 2) is based on GPS and hand mapping on aerial imagery and is considered approximate. Setbacks directly adjacent to the cultivation areas should be established by physically measuring from the top of the stream bank on the ground.

7. REFERENCES

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experimental Station.

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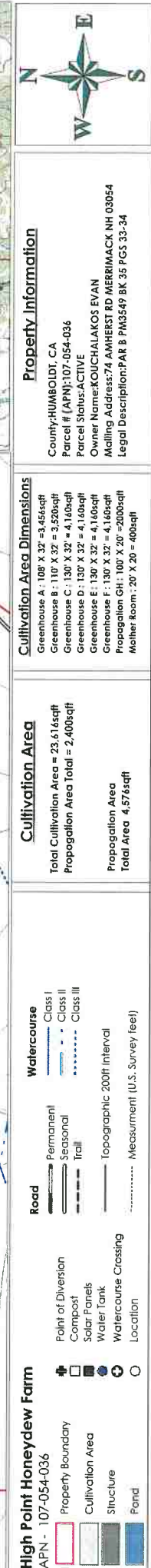
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APPENDIX A. Site Plan



APPENDIX B. National Wetlands Inventory Map



U.S. Fish and Wildlife Service
National Wetlands Inventory

107-054-036



February 24, 2021

Wetlands

- | | | | |
|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Lake |
|  | Estuarine and Marine Wetland |  | Other |
|  | Freshwater and Marine Deepwater |  | Riverine |
|  | Freshwater Emergent Wetland | | |
|  | Freshwater Forested/Shrub Wetland | | |
|  | Freshwater Pond | | |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

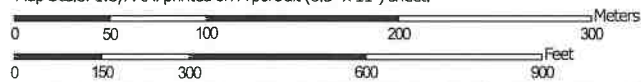
APPENDIX C. NRCS Soil Map

Soil Map—Humboldt County, South Part, California



Soil map may not be valid at this scale.

Map Scale: 1:3,770 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84











**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

9/7/2021
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MAP LEGEND

Area of Interest (AOI)		Area of Interest (AOI)	
Soils	   	Soil Map Unit Polygons	
	   	Soil Map Unit Lines	
	   	Soil Map Unit Points	
Special Point Features	                          		

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
569	Crazycoyote-Windynip-Caperidge complex, 15 to 50 percent slopes	41.2	63.8%
646	Wirefence-Windynip-Devilshole complex, 5 to 30 percent slopes	22.1	34.3%
649	Windynip-Wirefence-Devilshole complex, 30 to 50 percent slopes	1.2	1.9%
Totals for Area of Interest		64.5	100.0%

APPENDIX D. Wetland Determination Data Form

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

Project/Site: APN: 107-054-036 City/County: Humboldt Sampling Date: 9-2-21
 Applicant/Owner: High Point Honeydew Farms State: CA Sampling Point: 1
 Investigator(s): Kyle Wear Section, Township, Range: 31, T2S, R1E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 5
 Subregion (LRR): A Lat: E 404941 Long: N 4457287 Datum: NAD 83
 Soil Map Unit Name: Crazycoyote-Windynip-Caperidge NWI classification: PEM 1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X¹ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks: ¹ Sample at normally dry time of year followed by relatively dry spring 2021 Plot is in small grassland directly adjacent to stream channel within NWI polygon		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: 5-foot radius) 1. <u>Avena barbata</u> <u>20</u> <u>Y</u> <u>UPL</u> 2. <u>Briza maxima</u> <u>15</u> <u>Y</u> <u>UPL</u> 3. <u>Elymus glaucus</u> <u>10</u> <u>Y</u> <u>FACU</u> 4. <u>Leucanthemum vulgare</u> <u>10</u> <u>Y</u> <u>FACU</u> 5. <u>Festuca myuros</u> <u>10</u> <u>Y</u> <u>FACU</u> 6. <u>Iris purdyii</u> <u>2</u> <u>N</u> <u>UPL</u> 7. <u>Linum biene</u> <u>2</u> <u>N</u> <u>UPL</u> 8. <u>Luzula comosa</u> <u>2</u> <u>N</u> <u>FAC</u> 9. <u>Vicia sativa</u> <u>2</u> <u>N</u> <u>UPL</u> 10. _____ 11. _____ <u>73</u> = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____				

Remarks: ² Difficult to ID some of the mowed grasses without flowers

Sampling Point: **1**