ATTACHMENT 3C Wetland Delineation Report





Aquatic Resources Delineation

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

Prepared by:

Kyle Wear Botanical Consultant kyle_wear@suddenlink.net (707) 601-1725

Prepared for:

ETA Humboldt

June 2021

TABLE OF CONTENTS

1. INTRODUCTION	1
2. DEFINITIONS	1
2.1. Waters of the United States	1
2.2. Waters of the State	1
2.3. Streamside Management Areas	2
3. ENVIRONMENTAL SETTING	2
3.1. Project Location	2
3.2. Soil, Topography, and Hydrology	2
3.3. Vegetation	2
4. METHODS	4
4.1. Hydrophytic Vegetation	4
4.2. Hydric soil	4
4.3. Wetland Hydrology	5
4.4. Other Aquatic Resources	5
5. RESULTS	5
	5
7. REFERENCES	7
LIST OF FIGURES	
Figure 1. Location Map	3
Figure 2. Aquatic Resources Map	6

APPENDICES

- A. Site Plan
- B. National Wetland Inventory Map
- C. Wetland Determination Data Form

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).

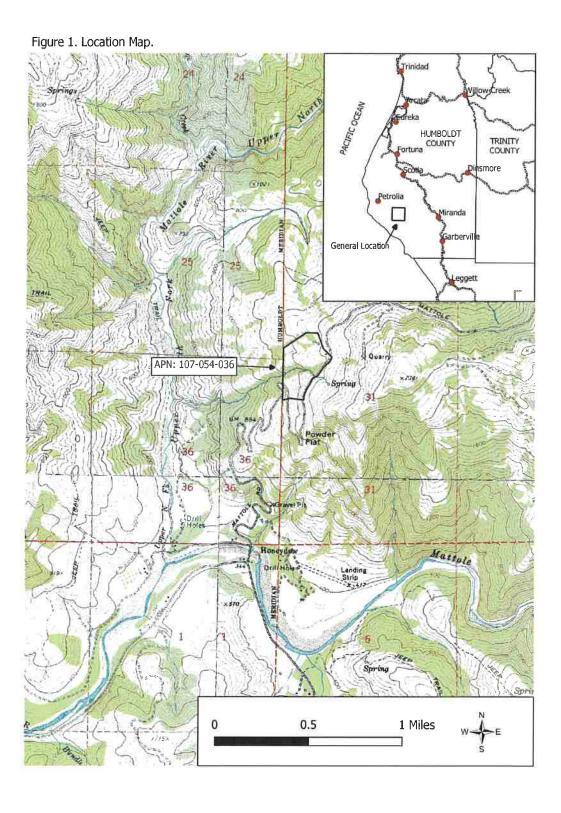
3.2. Soil, Topography, and Hydrology

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



Aquatic Resources Delineation -- High Point Honeydew Farm (APN: 107-054-036)

(Festuca myuros), with native grasses such as blue wildrye (Elymus glaucus ssp. glaucus) at relativity 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 in 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 indictors 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 pseudcorus* [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.

APN: 105-054-036 2020 NAIP Image ▲ Pond Overflow Perennial Spring Culvert --- Class II Watercourse Sample Point ····· Class III Watercourse Proposed Cultivation Areas ZZZ Pond 50 0 50 100 Feet County Parcel Layer — Streamside Managment Area

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.

GretagMacbeth. 2000. Munsell Soil Color Charts. New Winsdor, NY.

U.S. Army Corps of Engineers 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual. Western Mountains, Valleys, and Coast Region (Version 2.0),* ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/El TR-10-3. Vicksburg, MS. Army Corps of Engineer Research and Development Center.

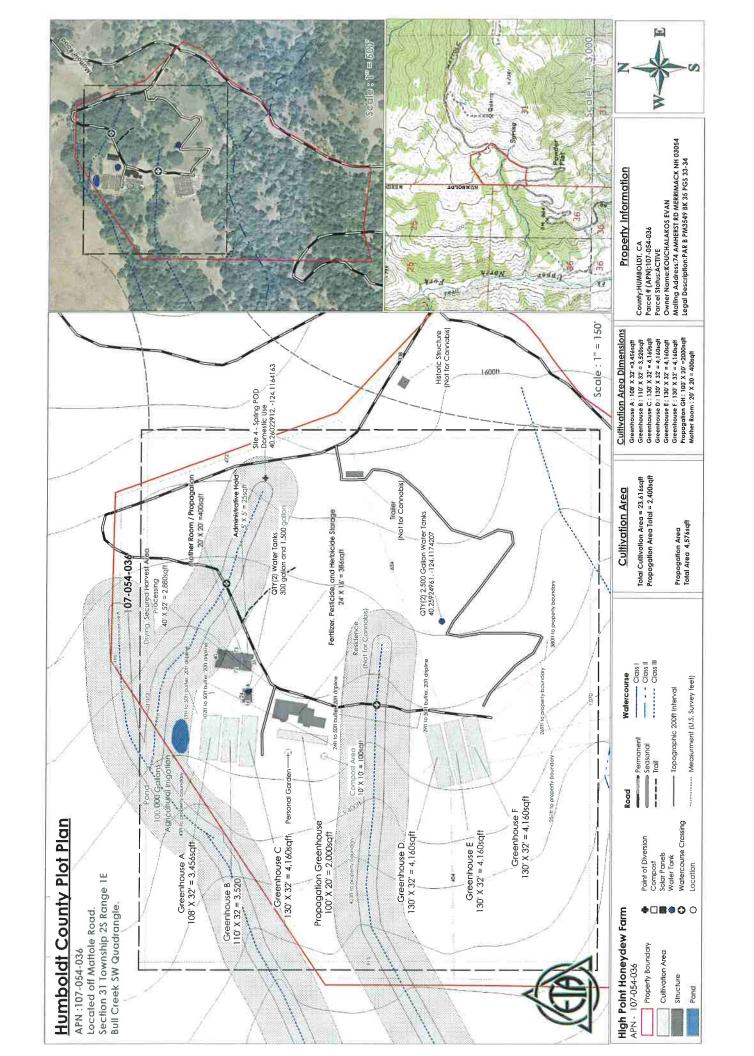
U.S. Army Corps of Engineers. 2018. Western Mountains, Valleys, and Coast 2018 Regional Wetland Plant List.

https://cwbiapp.sec.usace.army.mil/nwpl static/data/DOC/lists 2018/Regions/pdf/reg WMVC 2018v1.pdf

U.S. Fish and Wildlife Service (2021). *National Wetlands Inventory*. https://www.fws.gov/wetlands/

United States Department of Agriculture, Natural Resource Conservation Service. 2021. *Web Soil Survey*. https://websoilsurvey.sc.egov.usda.gov





APPENDIX B. National Wetlands Inventory Map	

Wetland Delineation - 1941 Elm Ave (APN: 509-095-012)

National Wetlands Inventory U.S. Fish and Wildlife Service

107-054-036



February 24, 2021

Wetlands

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Lake

Other

Riverine

National Wetlands Inventory (NWI) This page was produced by the NWI mapper





MAP INFORMATION

The soil surveys that comprise your AOI were mapped at

Warning: Soil Map may not be valid at this scale.

contrasting soils that could have been shown at a more detailed misunderstanding of the detail of mapping and accuracy of soil Enlargement of maps beyond the scale of mapping can cause line placement. The maps do not show the small areas of

Please rely on the bar scale on each map sheet for map measurements. Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator distance and area. A projection that preserves area, such as the projection, which preserves direction and shape but distorts Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required. This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, South Part, California Survey Area Data: Version 9, Jun 1, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger, Date(s) aerial images were photographed: May 8, 2019—Jun

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Slide or Slip

0 A Sodic Spot

Special Line Features Streams and Canals Interstate Highways Aerial Photography Very Stony Spot Major Roads Local Roads Stony Spot US Routes Spoil Area Wet Spot Other Rails Water Features Transportation Background MAP LEGEND Ш 8 Q ‡ Soil Map Unit Polygons Severely Eroded Spot Area of Interest (AOI) Miscellaneous Water Soil Map Unit Points Soil Map Unit Lines Closed Depression Marsh or swamp Perennial Water Mine or Quarry Special Point Features **Gravelly Spot** Rock Outcrop Saline Spot Sandy Spot Borrow Pit Lava Flow Area of Interest (AOI) Clay Spot Gravel Pit Blowout Sinkhole Landfill 9 X 民 0 Soils

Page 2 of 3 9/7/2021

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/Count	ty: <u>Humb</u>	oldt	_ Sampling Date: 9-2-21
Applicant/Owner: High Point Honeydew Farms	S			State: <u>CA</u>	Sampling Point:1
Investigator(s): Kyle Wear		Section, T	ownship, Ra	ange: 31, T2S, R1E	
Landform (hillslope, terrace, etc.): Terrace					
Subregion (LRR): A	Lat :	E 40494	11	_ Long: N 44572	287 Datum: NAD 83
Soil Map Unit Name: Crazycoyote-Windynip-				NWI classif	ication: PEM 1B
Are climatic / hydrologic conditions on the site typical for the	his time of ye	ar? Yes_	X 1 No_	(If no, explain in	Remarks.)
Are Vegetation, Soil, or Hydrology	_significantly	disturbed?	P Are	"Normal Circumstances"	present? Yes X No
Are Vegetation, Soil, or Hydrology	_naturally pro	oblematic?	(If ne	eeded, explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	ı sampliı	ng point l	ocations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes	No X				
Hydric Soil Present? Yes	No X	Is t	he Sampled	l Area nd?	No. X
Trouble Tryansiegy Freedom:					
Remarks: 1 Sample at normally dry time o					
Plot is in small grassland directly	y adjacen	t to stre	am chan	nel within NWI po	lygon
VEGETATION – Use scientific names of pla	nts.				
To a Object of CDL to be a	Absolute		t Indicator	Dominance Test wor	ksheet:
<u>Tree Stratum</u> (Plot size:) 1	% Cover			Number of Dominant S That Are OBL, FACW,	
2				Total Number of Domi	nant _
3				Species Across All Str	
4.		= Total Co		Percent of Dominant S That Are OBL, FACW,	
Sapling/Shrub Stratum (Plot size:)				Prevalence Index wo	
1				Total % Cover of:	Multiply by:
2				OBL species	x 1 =
3. 4.				FACW species	x 2 =
5					x 3 =
		= Total Co	over		x 4 =
Herb Stratum (Plot size5-foot radius) Avena barbata					x 5 =
I. Briza mavima		Y	UPL	Column Totals:	(A) (B)
Z,	_ 15	<u>Y</u>	UPL	Prevalence Index	x = B/A =
Laucanthamum mulgana	_ 10	<u> </u>	FACU	Hydrophytic Vegetati	on Indicators:
	_ 10	$\frac{\gamma}{\gamma}$	FACU	•	Hydrophytic Vegetation
6. <u>Festuca myuros</u> 6. Iris purdyii	<u>10</u> 2		<u>FACU</u>	2 - Dominance Tes	
7. Linum biene	$-\frac{2}{2}$	N	UPL_ UPL	3 - Prevalence Ind	* *
8. Luzula comosa	$-\frac{2}{2}$	N	FAC		Adaptations ¹ (Provide supporting sor on a separate sheet)
9. Vicia sativa		N N	UPL	5 - Wetland Non-V	
10.					phytic Vegetation¹ (Explain)
71.					il and wetland hydrology must
	72	= Total Co\	ver	be present, unless distu	urbed or problematic.
Woody Vine Stratum (Plot size:)					
1				Hydrophytic	
2				Vegetation Present? Ye	s No_X
% Bare Ground in Herb Stratum		= Total Cov	/er		
Remarks:					
² Difficult to ID some of the mow	ea grasse	s withou	ut flower	S	

Profile Description: (Describe to the depth needed to document the indicator or confirm Depth Matrix Redox Features (Inches) Color (molst) % Color (molst) % Type¹ Loc² 0-16 10 yr 2/2 100 Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grathydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Restrictive Layer (if present): Type: Depth (inches): Remarks:	Texture Remarks Clay loam Small to 1 inch angular rock
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grathydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	ins. Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
O-16 10 yr 2/2 100 Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Green Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Restrictive Layer (If present): Type: Depth (inches): Remarks:	ins. Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grathydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Restrictive Layer (If present): Type: Depth (Inches): Remarks:	ins. 2Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Solis3: 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Restrictive Layer (If present): Type: Depth (inches):	Indicators for Problematic Hydric Solis ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Restrictive Layer (If present): Type: Depth (inches): Remarks:	Indicators for Problematic Hydric Solis ³ : 2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) (except MLRA 1) Hydrogen Sulfide (A4) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Redox Dark Surface (F6) Redox Depressions (F8) Restrictive Layer (If present): Type: Depth (inches): Remarks:	2 cm Muck (A10) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Redox Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Restrictive Layer (if present): Type: Depth (inches): Remarks:	Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Black Histic (A3)	 Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Hydrogen Sulfide (A4) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Restrictive Layer (If present): Type: Depth (inches): Remarks: HYDROLOGY Depleted Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Redox Depressions (F8) Redox Depressions (F8)	Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Restrictive Layer (If present): Type: Depth (inches): Remarks: PDROLOGY	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Restrictive Layer (If present): Type: Depth (inches): Remarks: PAROLOGY Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Redox Dark Surface (F6) Depleted Dark Surface (F6) Redox Dark Surface (F6) Redox Dark Surface (F6) Redox Dark Surface (F6) Depleted Dark Surface (F6) Redox Dark Surface (F6)	wetland hydrology must be present, unless disturbed or problematic.
Sandy Gleyed Matrix (S4) Redox Depressions (F8) Restrictive Layer (If present): Type: Depth (inches): Remarks: YDROLOGY	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if present): Type: Depth (inches): Remarks:	unless disturbed or problematic.
Type: Depth (inches): Remarks: YDROLOGY	Hydric Soll Present? YesNo_X
Depth (inches):Remarks: YDROLOGY	Hydric Soll Present? YesNo_X
YDROLOGY	Hydric Soll Present? YesNo X
YDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1) Water-Stained Leaves (B9) (except	
High Water Table (A2) MLRA 1, 2, 4A, and 4B)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Saturation (A3) Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1) Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Oxidized Rhizospheres along Living Roots	
Algal Mat or Crust (B4) Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6)	FAC-Neutral Test (D5)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A)	Raised Ant Mounds (D6) (LRR A)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface (B8)	(2,7)
Field Observations:	
Surface Water Present? Yes No X Depth (inches):	
Vater Table Present? Yes No _X _ Depth (inches):	
Saturation Present? Yes No _X Depth (inches): Wetlan includes capillary fringe)	d Hydrology Present? Yes NoX
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if	
Remarks:	available: