# **CRITICAL AREA DETERMINATION**

**Guadagno Property King County, Washington** 

June 13, 2022

RAEDEKE ASSOCIATES, INC.



Report To:

Date:

•	14282 Olympic Drive SW Vashon Island, WA 98070
Title:	Critical Area Determination Guadagno Property King County, Washington
Project Number:	2022-043-001
Prepared by:	RAEDEKE ASSOCIATES, INC 2111 N. Northgate Way Ste. 219 Seattle, Washington, 98133 (206) 525-8122

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June 13, 2022



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### 1.0 INTRODUCTION

#### 1.1 Purpose

Raedeke Associates, Inc. was retained by Phil and Anne Guadagno to provide a critical area determination for the slope restoration and reconstruction of a deck on the property located along Olympic Drive SW in unincorporated King County on Vashon Island, Washington. As part of this project, we conducted a site visit to identify and delineate any wetlands, streams, or shorelines on or in the immediate vicinity of the project site. During our site visit, we collected information sufficient to characterize the existing site conditions as well as onsite wetlands. We delineated the Ordinary High Water Mark (OHWM) of the shoreline. We did not locate any wetlands on or adjacent to the site during our investigation.

This report presents the findings of our background information review and our April 22, 2022, site investigation of the project site.

## 1.2 PROJECT LOCATION

The Guadagno King County project site includes one 0.47-acre parcel located at 14282 Olympic Drive SW in unincorporated King County on Vashon Island, Washington (Figure 1). The project site is identified as King County Tax Parcel No. 888000055, which places the project site in a portion of Section 13, Township 23 North, Range 2 East, W.M. Parcel maps retrieved on-line from King County iMap depict the property boundaries.

The Guadagno King County project site is bordered to the north by the Puget Sound, and to the east, south, and west by single-family homes. The property is accessed from Olympic Drive SW to the south.

### 2.0 METHODS

### 2.1 DEFINITIONS AND METHODOLOGIES

Wetlands and streams are protected by federal law as well as by state and local regulations. Federal law (Section 404 of the Clean Water Act) prohibits the discharge of dredged or fill material into "Waters of the United States", including certain wetlands, without a permit from the U.S. Army Corps of Engineers (COE 2021, 2022). The COE makes the final determination as to whether an area meets the definition of a wetland and whether the wetland is under their jurisdiction.

The COE wetland definition was used to determine if any portions of the project area could be classified as wetland. A wetland is defined as an area "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Federal Register 1986:41251).

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers (COE) Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the COE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the COE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (COE 2010). The COE wetlands manual is required by state law (WAC 173-22-035, as revised) for all local jurisdictions.

Hydrophytic vegetation is defined as "macrophytic plant life growing in water, soil or substrate that is at least periodically deficient in oxygen as a result of excessive water content" (Environmental Laboratory 1987). The U.S. Army Corps of Engineers National Wetland Plant List wetland indicator status (WIS) ratings were used to make this determination (COE 2020). The WIS ratings "reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetland versus non-wetland across the entire distribution of the species" (Reed 1988:8). Plants are rated, from highest to lowest probability of occurrence in wetlands, as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL), respectively. In general, hydrophytic vegetation is present when the majority of the dominant species are rated OBL, FACW, and FAC.

A hydric soil is defined as "a soil that is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (Federal Register 1995: 35681). The morphological characteristics of the soils in the study area were examined to determine whether any could be classified as hydric.

According to the 1987 methodology, wetland hydrology could be present if the soils were saturated (sufficient to produce anaerobic conditions) within the majority of the rooting zone (usually the upper 12 inches) for at least 5% of the growing season, which in this

area is usually at least 2 weeks (COE 1991a). It should be noted, however, that areas having saturation to the surface between 5% and 12% of the growing season may or may not be wetland (COE 1991b). Depending on soil type and drainage characteristics, saturation to the surface would occur if water tables were shallower than about 12 inches below the soil surface during this time period. Positive indicators of wetland hydrology include direct observation of inundation or soil saturation, as well as indirect evidence such as driftlines, watermarks, surface encrustations, and drainage patterns (Environmental Laboratory 1987). Hydrology was further investigated by noting drainage patterns and surface water connections between wetlands and streams within and adjacent to the project area.

## 2.2 BACKGROUND RESEARCH

Prior to conducting our site visit, we reviewed existing background maps and information for the project site from the U.S.D.A. Natural Resource Conservation Service (NRCS 2022) Web Soil Survey, the U.S. Fish and Wildlife Service (USFWS 2022) National Wetland Inventory (NWI), and King County (2022b) iMap. We also reviewed the Washington Department of Fish Wildlife (2022) Priority Species database (PHS) in order to determine if any endangered or sensitive wildlife was present on or within the immediate vicinity of the project site. In addition, we reviewed current and historical aerial photographs (Google Earth 2022) to assist in the definition of existing plant communities, drainage patterns, and land use.

### 2.3 FIELD SAMPLING PROCEDURES

We conducted a site visit on April 22, 2022, to identify and delineate wetland and shoreline boundaries within the project site. During our site visit, we also collected information sufficient to describe the general site conditions.

Vegetation, soils, and hydrology were examined in representative portions of the study area according to the procedures described in the Regional Supplement (COE 2010). Plant communities were inventoried, classified, and described during our field investigation. We estimated the percent coverage of each species. Plant identifications were made according to standard taxonomic procedures described in Hitchcock and Cronquist (2018), with nomenclature as updated by the U.S. Army Corps of Engineers National Wetland Plant List (COE 2020). Wetland classification follows the USFWS wetland classification system (Cowardin et al. 1992). We determined the presence of a hydrophytic vegetation community using the procedure described in the Regional Supplement (COE 2010), which requires the use of the dominance test, unless positive indicators of hydric soils and wetland hydrology are also present, in which case the prevalence index or the use of other indicators of a hydrophytic vegetation community as described in the Regional Supplement (COE 2010) may also be required.

We excavated pits to at least 18 inches below the soil surface, where possible, in order to describe the soil and hydrologic conditions throughout the study area. We sampled

soil at locations that corresponded with vegetation sampling areas and potential wetland areas. Soil colors were determined using the Munsell Soil Color Chart (Munsell Color 2009). We used the indicators described in the Regional Supplement (COE 2010) to determine the presence of hydric soils and wetland hydrology.

#### 3.0 EXISTING CONDITIONS

### 3.1 RESULTS OF BACKGROUND INVESTIGATION

The U.S.D.A. NRCS (2022) Web Soil Survey shows the project site mapped as Alderwood gravelly sandy loam soils series (Figure 2). Alderwood gravelly sandy loam does not meet the criteria of a hydric soil but may contain hydric inclusions including Shalcar and Norma soils. Soil series boundaries are mapped using aerial photo interpretation with limited field verification. Thus, the mapping of soils within an area may vary from one location to another.

The USFWS (2022) NWI shows that the portion the project site in the intertidal area along the Puget Sound shoreline contains an estuarine, and marine wetland E2AB/USN (Figure 3). Wetlands shown on the NWI are general in terms of location and extent, as they are determined primarily from aerial photograph interpretation. Thus, the number and extent of existing wetlands located within the project area may differ from those marked on an NWI map.

King County (2022b) iMap depicts the intertidal area on the north end of the subject parcel as a wetland (Figure 4).

The WDFW (2022) PHS database map shows the beach at the project site as a breeding area for surf smelt (Figure 5). The PHS map also identifies the intertidal area at the north end of the subject parcel as an estuarine and marine wetland. The Washington Natural Heritage Program (2021) database does not identify a natural heritage feature within the section where the project is located.

### 3.2 RESULTS OF FIELD INVESTIGATIONS

The project site consists of one 0.47-acre parcel that contains a garage, house, deck, gardens, and a mowed lawn. The lawn area is dominated by Kentucky bluegrass (*Poa pratensis*, FAC), bentgrass (*Agrostis sp.*), and common dandelion (*Taraxacum officinale*, FACU). The slope contains native plantings including holly-leaf Oregon grape (*Mahonia aquifolium*, FACU), common snowberry (*Symphoricarpos albus*, FACU), blood currant (*Ribes sanguineum*, FACU), pineland sword fern (*Polystichum munitum*, FACU), salmon raspberry (*Rubus spectabilis*, FAC), and salal (*Gaultheria shallon*, FACU). The western property line is planted with a row of western red arborvitae (*Thuja plicata*, FAC). The eastern property line contains common snowberry (FACU) and pineland sword fern (FACU).

Soils across the project site vary between hydric and not hydric. The soil behind the bulkhead has over 5 inches of dark grayish brown (10YR 4/2) silt clay loam (Sample Plot 1). The soil at the top of the slope near the western property line consists of 6 inches of dark brown (10YR 3/3) gravelly sandy loam soils over olive brown (2.5Y 4/3) gravelly sandy loam with dark yellowish brown (10YR 3/6) redoximorphic concentrations within

the soil matrix (Sample Plot 2). Soil at the top of the slope near the eastern property line consists of 8 inches of olive brown (2.5Y 4/3) silt clay loam soils with dark yellowish brown (10YR 4/4) redoximorphic concentrations within the soil matrix over gray (2.5Y 5/1) silt clay loam soils with dark yellowish brown (10YR 4/4) redoximorphic concentrations within the soil matrix (Sample Plot 3). Soils near the shoreline and the eastern property line meet the hydric soil criteria depleted matrix (F3) as defined by the COE wetland delineation manual (Environmental Laboratory 1987) and the regional supplement (COE 2010) (Figure 6). During our site investigation, we did not observe any indicators of wetland hydrology such as a shallow groundwater table, soils saturation within the upper 12 inches of the soil profile, or any secondary indicators of wetland hydrology (water-stained leaves, drift deposits, areas of seasonal ponding, algal mats, etc.) within the project site.

## 3.2.1 Puget Sound Shoreline

As noted above, the property is bordered to the north by the Puget Sound (Figure 6). We marked the OHWM with pink and black flagging. A rock bulkhead is located along the Puget Sound OHWM. The bulkhead appears to correspond to the location of the marine OHWM with a more natural marine, cobble and substrate beach environment extending to the north. The Puget Sound shoreline is designated as a Type S water or "shoreline of the state."

### 4.0 REGULATORY CONSIDERATIONS

Wetlands are protected by Section 404 of the Federal Clean Water Act and other state and local policies and ordinances including King County (2022a) code. Regulatory considerations pertinent to wetlands identified within the study area are discussed below; however, this discussion should not be considered comprehensive. Additional information may be obtained from agencies with jurisdictional responsibility for, or interest in, the site. A brief review of the U.S. Army Corps of Engineers regulations and King County policy, relative to wetlands, is presented below.

## 4.1 FEDERAL CLEAN WATER ACT (U.S. ARMY CORPS OF ENGINEERS)

Federal law (Section 404 of the Clean Water Act) discourages the discharge of dredged or fill material into the nation's waters, including most wetlands and streams, without a permit from the U.S. Army Corps of Engineers (COE 2021, 2022). The COE makes the final determination as to whether an area meets the definition of "Waters of the U.S." as defined by the federal government (Federal Register 1986:41251), and thus, if it is under their jurisdiction.

We should caution that the placement of fill within wetlands or other "Waters of the U.S." without authorization from the COE is not advised, as the COE makes the final determination regarding whether any permits would be required for any proposed alteration (COE 2021, 2022). Because the COE makes the final determination regarding permitting under their jurisdiction, a jurisdictional determination from the COE is generally recommended prior to any construction activities, if any modification of wetlands is proposed. A jurisdictional determination would also provide evaluation and confirmation of the wetland delineations by the COE.

## 4.2 WASHINGTON STATE

Under Section 401 of the Clean Water Act, an activity involving a discharge in waters of the U.S. authorized by a federal permit must receive water quality certification by the affected certifying agency. In Washington State, the certifying agency is WDOE, which has regulatory authority over waters of the state, including streams and isolated wetlands, under the state Water Pollution Control Act (90.48 RCW) and the Shoreline Management Act (90.58 RCW).

## **4.3 KING COUNTY**

King County (2022a) code regulates wetlands, streams, and shorelines as critical areas. Alterations of critical areas and their buffers are generally prohibited, except as allowed under certain conditions. All direct impacts must be mitigated through creation, restoration, or enhancement. King County (2022a) has the final authority to determine ratings, buffers, and allowed uses of critical areas, their buffers, and other sensitive areas that are under their jurisdiction.

King County (2022a) provides a range of buffer widths for shorelines depending on the water type and location in relation to the Urban Growth Area. The King County (2022b) iMap Urban Growth Area layer identifies the project site as rural. King County (2022a) code Section 21A.24.358 requires a 165-foot-wide buffer for Type S waters outside the Urban Growth Area.

### 5.0 LIMITATIONS

We have prepared this report for the exclusive use of Phil and Anne Guadagno and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Phil and Anne Guadagno.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field, and prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

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# FIGURE 1 - Regional & Vicinity Map Guadagno, King County WA

14282 Olympic Drive SW, Vashon Island WA RAI PROJECT: 2022-043-001

PREPARED: 05/27/2022 BY: CLS





# FIGURE 2 - NRCS Web Soil Survey Map **Guadagno, King County WA**

14282 Olympic Drive SW, Vashon Island WA RAI PROJECT: 2022-043-001

PREPARED: 05/27/2022

BY: CLS









## Legend:

- dass 1

dass 2 perennial

dass 2 salmonid

— dass 3

· · · unclassified



Wetland (1990 SAO)

Lakes and large rivers

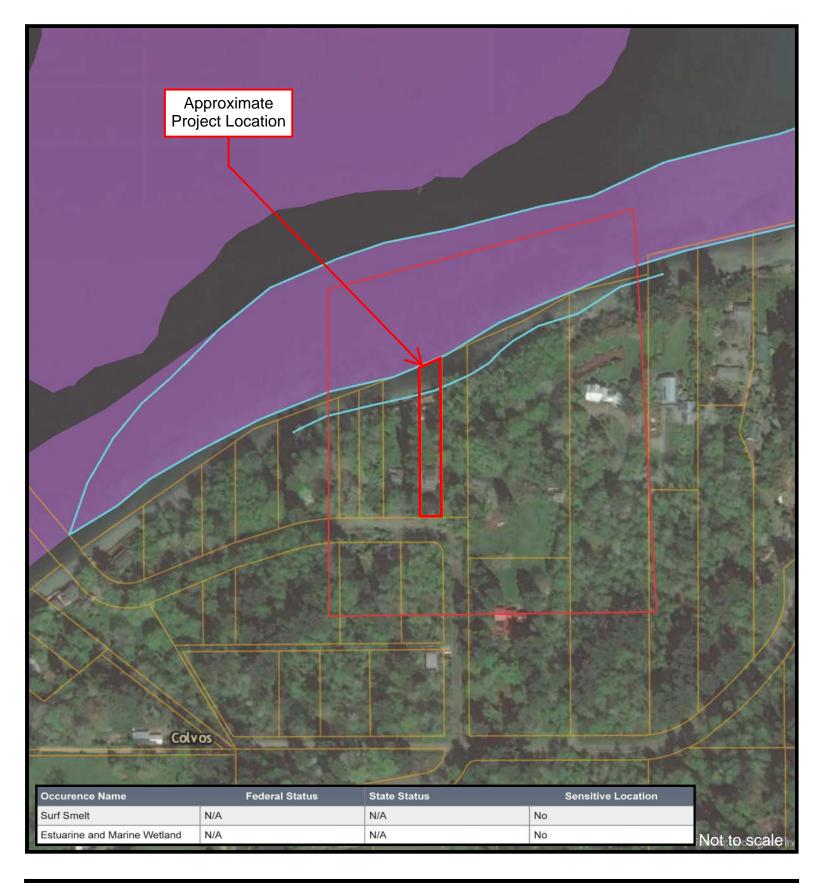
# FIGURE 4 - King County iMap Guadagno, King County WA

14282 Olympic Drive SW, Vashon Island WA RAI PROJECT: 2022-043-001

PREPARED: 05/27/2022 BY: CLS







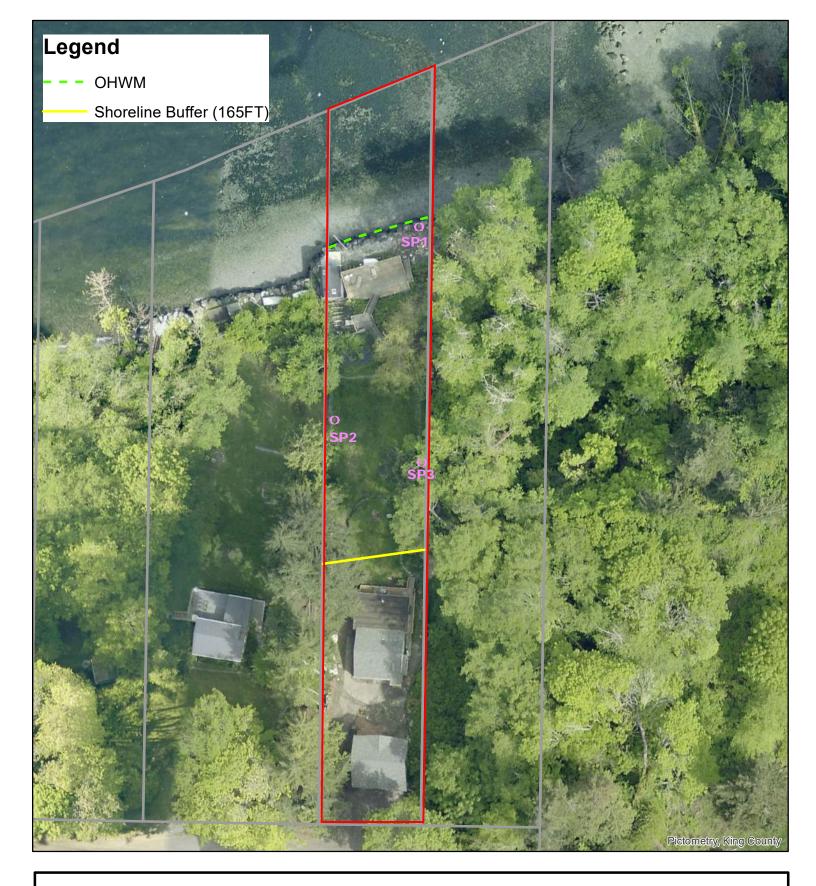


14282 Olympic Drive SW, Vashon Island WA RAI PROJECT: 2022-043-001

SOURCE INFORMATION: Washington Fish and Wildlife Priority Habitat & Species Online Mapping tool - http://apps.wdfw.wa.gov/phsontheweb/

PREPARED: 05/27/2022 BY: CLS





# FIGURE 6 - Guadagno King County - Existing Conditions

RAI Project #: 2022-043-001

Date: 05/27/2022

Created by: C. Straight

Note: Shoreline OHWM boundaries are based on GPS coordinates and interpretation of aerial imagery. Boundaries are approximate and for planning purposes only.

# APPENDIX A

Field Survey Data

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

Project/Site: Guadagno King County	(	City/County	y: <u>Vashon Is</u>	land, King County	Sampling Date: April 22, 2022
Applicant/Owner: Phil and Anne Guadagno				State: WA	Sampling Point: SP 1
Investigator(s): Annamaria Clark & Courtney Straight			Section, To	wnship, Range: <u>S13, T23</u>	N, R2E, W.M.
Landform (hillslope, terrace, etc.): Flat		Local relie	ef (concave,	convex, none): concave	Slope (%): <u>0-2</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)					
Soil Map Unit Name: Alderwood gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-				
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map			•		· ·
Hydrophytic Vegetation Present? Yes ☐ No ☒					
Hydric Soil Present? Yes ⊠ No □			e Sampled		
Wetland Hydrology Present? Yes ☐ No ☒		with	in a Wetlan	ıd? Yes ☐ N	0 🗵
Remarks: Sample Plot 1 is located in the northeast corner	of the shore	line above	the bulkhea	ad.	
VEGETATION – Use scientific names of plant					
Tree Stratum (Plot size: 5 m)	Absolute <u>% Cover</u>			Dominance Test works	
1				Number of Dominant Sp That Are OBL, FACW, o	ecies or FAC: <u>1</u> (A)
2				Total Number of Domina	not
3				Species Across All Strat	
4				Percent of Dominant Sp	eries
Sapling/Shrub Stratum (Plot size: 3 m)	0	= Total C	over		or FAC: <u>50</u> (A/B)
1. Rosa sp.	5	Y	Unk	Prevalence Index work	sheet:
2					Multiply by:
3					x 1 = 0
4				FACW species 0	x 2 = <u>0</u>
5				FAC species 40	x 3 = <u>120</u>
Harb Otratura (Distraina 4 m)	5	= Total C	over		x 4 = <u>40</u>
Herb Stratum (Plot size: 1 m)	40	V	<b>F</b> AC		x 5 = <u>0</u>
Poa pratensis (Kentucky bluegrass)     Taraxacum officinale (common dandelion)	· ·		· ·	Column Totals: 50	(A) <u>160</u> (B)
3				Prevalence Index	= B/A = 3.2
4				Hydrophytic Vegetatio	
5.				☐ 1 - Rapid Test for Hy	drophytic Vegetation
6				2 - Dominance Test	is >50%
7				3 - Prevalence Index	( is ≤3.0 <sup>1</sup>
8					daptations <sup>1</sup> (Provide supporting or on a separate sheet)
9				□ 5 - Wetland Non-Vas	
10				_	hytic Vegetation¹ (Explain)
11				_ , ,	and wetland hydrology must
Woody Vine Stratum (Plot size: 3 m)	50	= Total C	over	be present, unless distu	
1				Hydronby4:	
2				Hydrophytic Vegetation	
Of Page Crayed in Hart Office 45	0	= Total C	over		s □ No ⊠
% Bare Ground in Herb Stratum 15  Remarks: Rosa sp. not included in analsis as WIS unknow	n No indica	tors of byo	Ironhytic ver	retation observed	
Troniano. 1105a 5p. not moladed in anaisis as with difficient	ii. ivo iiiuica	action of flyc	aopinytic ve(	gotation observed.	

Profile Description: (Des	atrix		Red	dox Featur					,
(inches) Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	<u>e</u>	Remarks
<u>0 - 5+ 10YR 4/2</u>	90	<u>10Y</u>	R 4/4	10	C	M	Si. Cl.	<u>L</u>	
						<del></del>			
						· ———			
					-	<del></del>			
<u> </u>	<del></del>								
<sup>1</sup> Type: C=Concentration, E Hydric Soil Indicators: (A						ted Sand G			rs for Problematic Hydric Soils <sup>3</sup> :
	Applicable it				neu.)				•
☐ Histosol (A1) ☐ Histic Epipedon (A2)			Sandy Redox Stripped Matri				F		Muck (A10) Parent Material (TF2)
☐ Black Histic (A3)			_oamy Mucky	` '	-1) (excer	of MIRA 1)	_		Shallow Dark Surface (TF12)
☐ Hydrogen Sulfide (A4)			_oamy Gleyed			or MERCA 1)		_ ,	r (Explain in Remarks)
☐ Depleted Below Dark S	Surface (A11)		Depleted Mati		_/				(27)
☐ Thick Dark Surface (A1			Redox Dark S		i)		<sup>3</sup>  1	ndicato	rs of hydrophytic vegetation and
☐ Sandy Mucky Mineral (	(S1)		Depleted Dark	Surface (	F7)			wetla	nd hydrology must be present,
☐ Sandy Gleyed Matrix (\$			Redox Depres	ssions (F8)	)			unles	s disturbed or problematic.
Restrictive Layer (if prese	ent):								
Type: Refusal - hard pa	n								
Depth (inches): 5							Hydr	ic Soil	Present? Yes ⊠ No □
Remarks:									
HYDROLOGY	ators:								
HYDROLOGY Wetland Hydrology Indica		uired: ch	eck all that ap	volv)				Secor	ndary Indicators (2 or more required)
HYDROLOGY  Wetland Hydrology Indicators (minimu		uired; ch			ves (B9) (	excent MLF			ndary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1. 2.
HYDROLOGY  Wetland Hydrology Indicators (minimus Surface Water (A1)		uired; ch	☐ Water-St	ained Lea	, , ,	except MLF	RA		ater-Stained Leaves (B9) (MLRA 1, 2,
HYDROLOGY  Wetland Hydrology Indicators (minimum of the control of		uired; ch	☐ Water-St	tained Lea	, , ,	except MLI	RA	□ W	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
HYDROLOGY  Wetland Hydrology Indicators (minimum of the content of		uired; ch	☐ Water-St 1, 2, ☐ Salt Crus	tained Lea  4A, and 4  st (B11)	В)	except MLF	RA	□ W	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10)
HYDROLOGY  Wetland Hydrology Indicators (minimum of the content of	m of one req	uired; ch	☐ Water-St 1, 2, ☐ Salt Crus ☐ Aquatic I	tained Lea  4A, and 4  at (B11)  nvertebrat	<b>B)</b> es (B13)	except MLF	RA	□ W □ Dr □ Dr	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2)
HYDROLOGY  Wetland Hydrology Indicators (minimum of the control of	m of one req	uired; ch	Water-St 1, 2, Salt Crus Aquatic I Hydroge	tained Lea  4A, and 4  at (B11)  nvertebrat  n Sulfide C	es (B13) Odor (C1)	·		<ul><li></li></ul>	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9)
HYDROLOGY  Wetland Hydrology Indicators (minimus primary I	m of one req	uired; ch	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized	tained Lea  4A, and 4  at (B11)  nvertebrat  n Sulfide C	es (B13) Odor (C1) eres along	g Living Roc		☐ W ☐ Dr ☐ Dr ☐ Sa ☐ Ge	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) reomorphic Position (D2)
HYDROLOGY  Wetland Hydrology Indicators (minimus Primary Indicators (minimus Primary Indicators (minimus Primary Indicators (Minimus Primary Indicators (Material Primary Indicators (Minimus	m of one req	uired; ch	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduc	es (B13) Odor (C1) eres along red Iron (C	g Living Roc (34)	ots (C3)	W   Dr   Dr   Sa   Ge   Sh	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) recomorphic Position (D2) reallow Aquitard (D3)
HYDROLOGY  Wetland Hydrology Indicators (minimus primary I	m of one req	uired; ch	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II	tained Lea  4A, and 4  at (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduct  ron Reduct	es (B13) Odor (C1) eres along ed Iron (C	g Living Roc	ots (C3)		ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) reomorphic Position (D2) rallow Aquitard (D3) AC-Neutral Test (D5)
HYDROLOGY  Wetland Hydrology Indicators (minimumal primary Indicators (Material Primary Indicators	m of one req		Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II	tained Lea  4A, and 4  at (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduct  ron Reduct	es (B13) Odor (C1) eres alono red Iron (C tion in Tilled d Plants (I	g Living Roc (24) ed Soils (C6	ots (C3)		ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) recomorphic Position (D2) reallow Aquitard (D3)
HYDROLOGY  Wetland Hydrology Indicators (minimumal primary Indicators (Material Primary Indicators	m of one req	/ (B7)	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduct  ron Reduct  or Stresse	es (B13) Odor (C1) eres alono red Iron (C tion in Tilled d Plants (I	g Living Roc (24) ed Soils (C6	ots (C3)		ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) reomorphic Position (D2) rallow Aquitard (D3) AC-Neutral Test (D5) raised Ant Mounds (D6) (LRR A)
HYDROLOGY  Wetland Hydrology Indicators (minimumal primary Indicators (minimumal primary Indicators (minimumal primary Indicators (minimumal primary Indicators (Material Primary Indicators (	m of one req	/ (B7)	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduct  ron Reduct  or Stresse	es (B13) Odor (C1) eres alono red Iron (C tion in Tilled d Plants (I	g Living Roc (24) ed Soils (C6	ots (C3)		ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) reomorphic Position (D2) rallow Aquitard (D3) AC-Neutral Test (D5) raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Max))  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 (B1)  Inundation Visible on A1  Sparsely Vegetated Co	m of one req	/ (B7)	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II	arined Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduc  ron Reduc  or Stresse  xplain in R	es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	g Living Roc (24) ed Soils (C6	ots (C3)		ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) reomorphic Position (D2) rallow Aquitard (D3) AC-Neutral Test (D5) raised Ant Mounds (D6) (LRR A)
Wetland Hydrology Indicators (minimum Primary Indicators (minimum 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 (B1)  Inundation Visible on A1  Sparsely Vegetated Co	en of one req	/ (B7) ce (B8)	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II Stunted of	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduct  ron Reduct  or Stresse  xplain in R	es (B13) Ddor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	g Living Roc (24) ed Soils (C6	ots (C3)		ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) reomorphic Position (D2) rallow Aquitard (D3) AC-Neutral Test (D5) raised Ant Mounds (D6) (LRR A)
HYDROLOGY  Wetland Hydrology Indicators (minimumous Indicators (minimumous Indicators (minimumous Indicators (minimumous Indicators (minimumous Indicators (minimumous Indicators (Material Indicators (Material Indicators (Material Indicators Indicators (Material Indicators Indicators (Material Indicators Ind	en of one request.  6) Lerial Imagery Concave Surface Yes	/ (B7) ce (B8)	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II Stunted 6 Other (E:	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduc  ron Reduc  or Stresse  xplain in R  es):	es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	g Living Roc 24) ed Soils (C6 01) ( <b>LRR A</b>	ots (C3)	☐ W ☐ Dr ☐ Dr ☐ Sa ☐ GG ☐ St ☐ FA	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) reomorphic Position (D2) rallow Aquitard (D3) AC-Neutral Test (D5) raised Ant Mounds (D6) (LRR A)
HYDROLOGY  Wetland Hydrology Indicators (minimum primary Indicators (Maximum primary I	em of one request.  6) Aerial Imagery oncave Surfact Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	/ (B7) ce (B8) No ⊠ No ⊠ No ⊠	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II Stunted ( Other (E:	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduct  ron Reduct  or Stresse  xplain in R  es):  es):  es):	es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	g Living Roc (4) ed Soils (C6 (D1) (LRR A	ots (C3) S) )	☐ W ☐ Dr ☐ Dr ☐ Sa ☐ Ga ☐ St ☐ Fr ☐ Ra ☐ Fr	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) returnation Visible on Aerial Imagery (C9) recomorphic Position (D2) reallow Aquitard (D3) rainage Patterns (B10) ry-Season Water Table (C2) recomorphic Position (D2) recomorphic Position (D2) recomorphic Position (D3) rainage Patterns (D5) recomorphic Position (D5) recomorphic Position (D3) recomorphic Position (D5) recomorphic Posi
HYDROLOGY  Wetland Hydrology Indicators (minimus Primary Indicators (Max)  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 (Basical Cracks (Basical Control Cracks (Basical Cracks (Basical Control Cracks (Basical Cracks (Basical Control Co	em of one request.  6) Aerial Imagery oncave Surfact Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	/ (B7) ce (B8) No ⊠ No ⊠ No ⊠	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II Stunted ( Other (E:	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduct  ron Reduct  or Stresse  xplain in R  es):  es):  es):	es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	g Living Roc (4) ed Soils (C6 (D1) (LRR A	ots (C3) S) )	☐ W ☐ Dr ☐ Dr ☐ Sa ☐ Ga ☐ St ☐ Fr ☐ Ra ☐ Fr	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) returnation Visible on Aerial Imagery (C9) recomorphic Position (D2) reallow Aquitard (D3) rainage Patterns (B10) ry-Season Water Table (C2) recomorphic Position (D2) recomorphic Position (D2) recomorphic Position (D3) rainage Patterns (D5) recomorphic Position (D5) recomorphic Position (D3) recomorphic Position (D5) recomorphic Posi
Wetland Hydrology Indicators (minimum 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 (B1)  Sparsely Vegetated Construction Visible on A1  Sparsely Vegetated Construction Visible on A2  Field Observations:  Surface Water Present?  Water Table Present?  Saturation Present?  Saturation Present?  (includes capillary fringe)  Describe Recorded Data (see A2)	em of one req	/ (B7) ce (B8)  No ⊠ No ⊠ No ⊠	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II Stunted of Other (E:  Depth (inch Depth (inch	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduc  ron Reduc  or Stresse  xplain in R  es):  es):  al photos, I	es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	g Living Roc (4) ed Soils (C6 (D1) (LRR A	ots (C3) S) )	☐ W ☐ Dr ☐ Dr ☐ Sa ☐ Ga ☐ St ☐ Fr ☐ Ra ☐ Fr	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) returnation Visible on Aerial Imagery (C9) recomorphic Position (D2) reallow Aquitard (D3) rainage Patterns (B10) ry-Season Water Table (C2) recomorphic Position (D2) recomorphic Position (D2) recomorphic Position (D3) rainage Patterns (D5) recomorphic Position (D5) recomorphic Position (D3) recomorphic Position (D5) recomorphic Posi
Wetland Hydrology Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (minimumary Indicators (Material Indicators (Material Indicators Indicators (Material Indicators I	em of one req	/ (B7) ce (B8)  No ⊠ No ⊠ No ⊠	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II Stunted of Other (E:  Depth (inch Depth (inch	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduc  ron Reduc  or Stresse  xplain in R  es):  es):  al photos, I	es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	g Living Roc (4) ed Soils (C6 (D1) (LRR A	ots (C3) S) )	☐ W ☐ Dr ☐ Dr ☐ Sa ☐ Ga ☐ St ☐ Fr ☐ Ra ☐ Fr	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) returnation Visible on Aerial Imagery (C9) recomorphic Position (D2) reallow Aquitard (D3) rainage Patterns (B10) ry-Season Water Table (C2) recomorphic Position (D2) recomorphic Position (D2) recomorphic Position (D3) rainage Patterns (D5) recomorphic Position (D5) recomorphic Position (D3) recomorphic Position (D5) recomorphic Posi
Wetland Hydrology Indicators (minimumal Primary Indicators (minimumal 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 (B1)  Sparsely Vegetated Construction Present?  Water Table Present?  Saturation Present?  (includes capillary fringe)  Describe Recorded Data (see Primary Indicators)	em of one req	/ (B7) ce (B8)  No ⊠ No ⊠ No ⊠	Water-St 1, 2, Salt Crus Aquatic I Hydroge Oxidized Presence Recent II Stunted of Other (E:  Depth (inch Depth (inch	tained Lea  4A, and 4  st (B11)  nvertebrat  n Sulfide C  Rhizosph  e of Reduc  ron Reduc  or Stresse  xplain in R  es):  es):  al photos, I	es (B13) Odor (C1) eres along ed Iron (C tion in Tille d Plants (I emarks)	g Living Roc (4) ed Soils (C6 (D1) (LRR A	ots (C3) S) )	☐ W ☐ Dr ☐ Dr ☐ Sa ☐ Ga ☐ St ☐ Fr ☐ Ra ☐ Fr	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) rainage Patterns (B10) ry-Season Water Table (C2) returnation Visible on Aerial Imagery (C9) recomorphic Position (D2) reallow Aquitard (D3) rainage Patterns (B10) ry-Season Water Table (C2) recomorphic Position (D2) recomorphic Position (D2) recomorphic Position (D3) rainage Patterns (D5) recomorphic Position (D5) recomorphic Position (D3) recomorphic Position (D5) recomorphic Posi

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

Project/Site: Guadagno King County		City/County	: <u>Vashon Is</u>	sland, King County	Sampling Date: April 22, 2022
Applicant/Owner: Phil and Anne Guadagno				State: WA	Sampling Point: SP 2
Investigator(s): Annamaria Clark & Courtney Straight			Section, To	ownship, Range: <u>S13, T23</u>	N, R2E, W.M.
Landform (hillslope, terrace, etc.): Flat		Local relie	f (concave,	, convex, none): concave	Slope (%): <u>5-10</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)					
Soil Map Unit Name: Alderwood gravelly sandy loam					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	-				
Are Vegetation, Soil, or Hydrology natu				ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map s					
Hydrophytic Vegetation Present? Yes ⊠ No □					
Hydric Soil Present? Yes ☐ No ☒			e Sampled		- 17
Wetland Hydrology Present? Yes ☐ No ☒		with	in a Wetlar	nd? Yes □ N	0 🕅
Remarks: Sample Plot 2 is located at the top of the slope in	n the lawn n	ear wester	n property I	ine.	
VEGETATION II : (III )					
VEGETATION – Use scientific names of plant				1	<del>.</del>
Tree Stratum (Plot size: 5 m)	Absolute <u>% Cover</u>	Dominant Species?		Dominance Test works	
1. Thuja plicata (western red arborvitae)				Number of Dominant Sp That Are OBL, FACW, o	
2				Total Number of Domina	ant
3				Species Across All Strat	
4				Percent of Dominant Sp	ecies
Sapling/Shrub Stratum (Plot size: 3 m)	0	= Total C	over		or FAC: <u>100</u> (A/B)
Cratageous douglasii (black hawthorn)	2	Υ	FAC	Prevalence Index work	 ksheet:
2				Total % Cover of:	Multiply by:
3				OBL species	x 1 =
4				FACW species	x 2 =
5				FAC species	x 3 =
Harb Stratum (Plat size: 1 m)	2	= Total C	over		x 4 =
Herb Stratum (Plot size: 1 m)  1. Poa pratensis (Kentucky bluegrass)	50	V	FΔC		x 5 =
Agrostis sp.	15		Unk	Column Totals:	(A) (B)
Taraxacum officinale (common dandelion)			FACU	Prevalence Index	= B/A =
4. Equisteum arvense (field horsetail)	5	N	FAC	Hydrophytic Vegetatio	n Indicators:
5			-	☐ 1 - Rapid Test for Hy	
6				2 - Dominance Test	
7				3 - Prevalence Index	
8					daptations <sup>1</sup> (Provide supporting or on a separate sheet)
9				5 - Wetland Non-Vas	•
10				☐ Problematic Hydropl	hytic Vegetation¹ (Explain)
11		= Total C			and wetland hydrology must
Woody Vine Stratum (Plot size: 3 m)	<u>10</u>	= Total O	OVCI	be present, unless distu	rbed or problematic.
1				Hydrophytic	
2				Vegetation	
% Bare Ground in Herb Stratum 15	0	= Total C	over	Present? Yes	s⊠ No □
Remarks: Agrostis sp. not included in analsis as WIS unkn	own.			<u> </u>	

Color (moist)	Depth (inches)	Matrix	07		Ked	ox Featur		1 2	T	_		D I	
	·	· · · · · ·		Cold	or (moist)	%		LOC <sup>2</sup>					
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.	<u> - 6</u>	10YR 3/3	<u>100</u>						<u>Gr. S. L</u>		-		
Indicators: (Applicable to all LRRs, unless otherwise noted.)   Indicators for Problematic Hydric Soils   Histic Epipedon (A2)   Sandy Redox (S5)   2 cm Muck (A10)   Shaltow (A10)   Histic Epipedon (A2)   Loamy Mucky Mineral (F1) (except MLRA 1)   Very Shallow Dark Surface (TF12)   Hydrogen Sulfide (A4)   Loamy Gleyed Matrix (F2)   Other (Explain in Remarks)   Depleted Below Dark Surface (A11)   Depleted Markix (F3)   Other (Explain in Remarks)   Depleted Dark Surface (FF1)   Mode of the Company of the Compan	5-13+	2.5Y 4/3	90	<u>10Y</u>	R 3/6	10	<u>C</u>	<u>M</u>	Gr. S. L	<del></del>			
Histosol (A1)													
Histosol (A1)													
Histosol (A1)													
Maricators: (Applicable to all LRRs, unless otherwise noted.)   Indicators for Problematic Hydric Soils   Histoscoi (A1)   Sandy Redox (S5)   2 cm Muck (A1)   Histoscoi (A1)   Stripped Matrix (S6)   2 cm Muck (A1)   Very Shallow Dark Surface (TF12)   Hydrogen Sulfide (A4)   Loamy Gleyed Matrix (F2)   Very Shallow Dark Surface (TF12)   Depleted Below Dark Surface (A11)   Depleted Matrix (F3)   Thick Dark Surface (A12)   Redox Dark Surface (F6)   Problematic Hydrogen Sulfide (A4)   Depleted Dark Surface (F6)   Problematic Hydrogen Sulfide (A12)   Pedet Dark Surface (F7)   Problematic Hydrogen Sulfide (A12)   Problematic Hydrogen Sulface (F7)   Problematic Hydrogen Sulfa	 Гуре: C=Co	ncentration, D=De	pletion,	 RM=Red	luced Matrix, C	S=Cover	ed or Coa	ated Sand G	Grains.	<sup>2</sup> Loc	ation: PL:	=Pore Lining	g, M=Matrix.
Histic Epipedon (A2)	lydric Soil II	ndicators: (Appl	cable to	all LRR	s, unless oth	erwise no	oted.)		Inc				
Black Histic (A3)					Sandy Redox (	(S5)				] 2 cm	Muck (A1	0)	
Hydrogen Sulfide (A4)						. ,						, ,	
Depleted Below Dark Surface (A11)		, ,						pt MLRA 1)		-			. ,
Thick Dark Surface (A12)							2)			] Othe	r (Explain	in Remarks	)
Sandy Mucky Mineral (S1)			ce (A11)						31				tation and
Sandy Gleyed Matrix (S4)		, ,				•	•		٩In		-		
Type:   Depth (inches):   Hydric Soil Present?   Yes   No   No   More   Mor	•	• ' '			•		,						
Type:					redux Depies	510115 (1 0	)			unies	s distuibet	a or problem	iatic.
Port (inches):													
PROLOGY											_	Voc 🗆	No M
Company   Indicators   Indica	Depth (inc	hes):							Hydri	c Soil	Present?	162	NO 🖂
Primary Indicators (minimum of one required; check all that apply)  Surface Water (A1) High Water Table (A2) Saturation (A3) Saturation (A3) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Sediment Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Surface Soil Cracks (B6) Surface Water Present? Surface Water Present? Surface Water Present? Saturation Present? Saturation Present? Saturation Present? Saturation Present? Surface Soil Cracks (Pa) Sediment Deposits (Pa) Surface Soil Cracks (Pa) Surface Soil Cracks (Pa) Surface Soil Cracks (Pa) Surface Soil Cracks (Pa) Surface Water Present? Surface Water Present? Surface Water Present? Surface Water Present? Surface Soil Cracks (Pa) Surface Soil Cracks (Pa) Surface Soil Cracks (Pa) Surface Surface Surface Sur									Hydri	C SOII	Present?	res 🗀	NO 🖂
Surface Water (A1)	Remarks: No	indicators of hydri	c soils o						Hydri	ic Soil	Present?	ies 🗆	NO 🖂
High Water Table (A2)  Saturation (A3)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Presence of Reduced Iron (C4)  Iron Deposits (B5)  Surface Soil Cracks (B6)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Field Observations:  Surface Water Present?  Yes No Depth (inches):  Vater Table Present?  Yes No Depth (inches):  Saturation Vasible on Aerial Imagery (B7)  Depth (inches):  Saturation Visible on Aerial Imagery (Pasion (C4)  Drift Deposits (B5)  Adag Mat or Crust (B4)  Presence of Reduced Iron (C4)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)  Raised Ant Mounds (D6) (LRR A)  Frost-Heave Hummocks (D7)  Wetland Hydrology Present? Yes No Depth (inches):  Saturation Present?  Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):	YDROLOG	indicators of hydri	c soils o	bserved.	ook all that any								<del>-</del>
Saturation (A3)	YDROLOG Vetland Hyd	indicators of hydri  GY  Irology Indicators ators (minimum of	c soils o	bserved.				(overant MI		Secon	ndary Indic	ators (2 or r	more required)
Water Marks (B1)	PROLOCUTE TIME TO THE TIME TO	GY  Irology Indicators ators (minimum of	c soils o	bserved.	☐ Water-Sta	ained Lea		(except ML		Secon	ndary Indic ater-Staine	ators (2 or r	more required)
Sediment Deposits (B2)	PROLOCE TENNION OF THE PROPERTY OF THE PROPERT	GY  Irology Indicators ators (minimum of Vater (A1) er Table (A2)	c soils o	bserved.	☐ Water-Sta	ained Lea		(except ML	RA	Secon	ndary Indic ater-Staine 4A, and	ators (2 or reed Leaves (	more required) B9) ( <b>MLRA 1, 2</b>
Drift Deposits (B3)	PROLOCE  Petland Hydrimary Indicate  Surface V High Wate Saturation	GY Irology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3)	c soils o	bserved.	☐ Water-Sta  1, 2, 4 ☐ Salt Crus	ained Lea IA, and 4 t (B11)	В)	(except ML	RA	Secon W:	ndary Indic ater-Staine <b>4A, and</b> ainage Pa	ators (2 or red Leaves (4B)	more required) B9) ( <b>MLRA 1, 2</b>
Algal Mat or Crust (B4)	PROLOCE  Petland Hydrimary Indicate  Surface W High Wate Saturation Water Ma	GY Irology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) arks (B1)	c soils o	bserved.	☐ Water-Sta  1, 2, 4 ☐ Salt Crus ☐ Aquatic Ir	ained Lea IA, and 4 t (B11) nvertebrat	<b>B)</b> es (B13)		RA	Secon  Wi	ndary Indic ater-Staine <b>4A, and</b> ainage Pa y-Season	ators (2 or red Leaves (4B) tterns (B10) Water Table	more required) B9) ( <b>MLRA 1, 2</b> ) e (C2)
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)   ield Observations:   urface Water Present? Yes ☐ No ☒ Depth (inches):   /ater Table Present? Yes ☐ No ☒ Depth (inches):   aturation Present? Yes ☐ No ☒ Depth (inches):   ncludes capillary fringe) Wetland Hydrology Present? Yes ☐ No ☒	PROLOCE  Petland Hydrimary Indicate  Surface W High Wate Saturation Water Ma Sediment	indicators of hydridators of Irology Indicators ators (minimum of Vater (A1) er Table (A2) in (A3) arks (B1) in Deposits (B2)	c soils o	bserved.	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen	ained Lea  IA, and 4  t (B11)  nvertebrat  Sulfide C	<b>B)</b> es (B13) Odor (C1)		RA	Secon Wi	ndary Indic ater-Staine <b>4A, and</b> ainage Pa y-Season aturation V	ators (2 or red Leaves (4B) tterns (B10) Water Table	more required) B9) ( <b>MLRA 1, 2</b> ) e (C2) erial Imagery (C
Surface Soil Cracks (B6)	/DROLOG /etland Hyd rimary Indica   Surface V   High Wate   Saturation   Water Ma   Sediment   Drift Depo	GY Irology Indicators ators (minimum of Vater (A1) er Table (A2) n (A3) urks (B1) r Deposits (B2) osits (B3)	c soils o	bserved.	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized	ained Lea  IA, and 4  t (B11)  nvertebrat  Sulfide C  Rhizosph	es (B13) Odor (C1) eres alon	g Living Roo	RA oots (C3)	Secon War	ndary Indic ater-Staine <b>4A, and</b> ainage Pa y-Season aturation V eomorphic	ators (2 or red Leaves (4B) tterns (B10) Water Table isible on Ae	more required) B9) ( <b>MLRA 1, 2</b> ) e (C2) erial Imagery (C
Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Frost-Heave Hummocks (D7)  Sparsely Vegetated Concave Surface (B8)  ield Observations:  urface Water Present? Yes ☐ No ☒ Depth (inches):  /ater Table Present? Yes ☐ No ☒ Depth (inches):  aturation Present? Yes ☐ No ☒ Depth (inches):  moludes capillary fringe)  Wetland Hydrology Present? Yes ☐ No ☒ no ☒	PROLOCE  Tetland Hydrimary Indicate  Surface W High Wate Saturation Water Ma Sediment Drift Depo	Indicators of hydridators of hydridators (minimum of Vater (A1) er Table (A2) in (A3) arks (B1) er Deposits (B2) posits (B3) or Crust (B4)	c soils o	bserved.	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence	ined Lea IA, and 4 t (B11) overtebrat Sulfide C Rhizosph of Reduc	es (B13) Odor (C1) eres alon	g Living Roo C4)	RA ots (C3)	Secon  Wa  Dr  Dr  Sa  Ge  Sr	adary Indic ater-Staine 4A, and ainage Pa y-Season aturation V eomorphic nallow Aqu	ators (2 or red Leaves (4B) Itterns (B10) Water Table isible on Ae Position (D	more required) B9) ( <b>MLRA 1, 2</b> ) e (C2) erial Imagery (C
Sparsely Vegetated Concave Surface (B8)  ield Observations:  surface Water Present? Yes □ No ☒ Depth (inches):  Vater Table Present? Yes □ No ☒ Depth (inches):  ieaturation Present? Yes □ No ☒ Depth (inches):  includes capillary fringe)  Wetland Hydrology Present? Yes □ No ☒ No ☒	Property of the control of the contr	Indicators of hydridicators of hydridicators of hydridicators ators (minimum of Vater (A1) er Table (A2) er (A3) er (A3) er (B1) er (B2) osits (B3) or Crust (B4) osits (B5)	c soils o	bserved.	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ire	ined Lea  IA, and 4  t (B11)  nvertebrat  Sulfide C  Rhizosph  of Reduct  on Reduct	es (B13) Odor (C1) eres alon eed Iron (Contion in Til	g Living Roo C4) led Soils (C6	RA ots (C3)	Secon  W:  Dr  Dr  Ge	adary Indic ater-Staine 4A, and ainage Pa y-Season aturation V eomorphic nallow Aqu	ators (2 or red Leaves (4B) tterns (B10) Water Table isible on Ae Position (D itard (D3)	more required) B9) (MLRA 1, 2 ) e (C2) rial Imagery (C
Field Observations:  Surface Water Present? Yes □ No ☒ Depth (inches):  Vater Table Present? Yes □ No ☒ Depth (inches):  Saturation Present? Yes □ No ☒ Depth (inches):  Subject of the control of t	YDROLOG Vetland Hyd Crimary Indicator Surface V High Water Saturation Water Ma Sediment Drift Depo	Indicators of hydridicators of hydridicators of hydridicators ators (minimum of Vater (A1) er Table (A2) er (A3) er (B1) er Deposits (B2) posits (B3) or Crust (B4) posits (B5) Goil Cracks (B6)	c soils o	bserved.	Water-Start, 2, 4  1, 2, 4  Salt Crus  Aquatic Ir  Hydrogen  Oxidized  Presence  Recent Ire  Stunted o	ined Lea IA, and 4 t (B11) nvertebrat a Sulfide C Rhizosph of Reduc on Reduc or Stresse	es (B13) Odor (C1) eres alon ed Iron (I tion in Til d Plants (	g Living Roo C4) led Soils (C6	RA ots (C3)	Secon Wi Dr Dr Cr Se	adary Indice ater-Staine 4A, and rainage Pa ry-Season aturation Vecomorphice allow Aquental acc-Neutral	ators (2 or red Leaves (4B) tterns (B10) Water Table isible on Ae Position (D itard (D3) Test (D5) Mounds (D6	more required) B9) (MLRA 1, 2 ) e (C2) vial Imagery (C2) ) (LRR A)
Surface Water Present? Yes □ No ☒ Depth (inches):	YDROLOG Vetland Hyd Surface V High Wate Saturation Water Ma Sediment Drift Depo	indicators of hydridators of hydridators (minimum of Vater (A1) er Table (A2) er (A3) er (B1) er (B2) osits (B3) er Crust (B4) osits (B5) or Crust (B6) er Visible on Aerial	c soils o	uired; ch	Water-Start, 2, 4  1, 2, 4  Salt Crus  Aquatic Ir  Hydrogen  Oxidized  Presence  Recent Ire  Stunted o	ined Lea IA, and 4 t (B11) nvertebrat a Sulfide C Rhizosph of Reduc on Reduc or Stresse	es (B13) Odor (C1) eres alon ed Iron (I tion in Til d Plants (	g Living Roo C4) led Soils (C6	RA ots (C3)	Secon Wi Dr Dr Cr Se	adary Indice ater-Staine 4A, and rainage Pa ry-Season aturation Vecomorphice allow Aquental acc-Neutral	ators (2 or red Leaves (4B) tterns (B10) Water Table isible on Ae Position (D itard (D3) Test (D5) Mounds (D6	more required) B9) (MLRA 1, 2 ) e (C2) vial Imagery (C2) ) (LRR A)
Vater Table Present?       Yes □ No ☒ Depth (inches):         Saturation Present?       Yes □ No ☒ Depth (inches):         Includes capillary fringe)       Wetland Hydrology Present? Yes □ No ☒	YDROLOC Vetland Hyde Primary Indication Surface V High Water Mater	Indicators of hydricators of hydricators (minimum of Vater (A1) er Table (A2) er (A3) er (B1) er Deposits (B2) osits (B3) or Crust (B4) osits (B5) Soil Cracks (B6) er Visible on Aerial Vegetated Concav	c soils o	uired; ch	Water-Start, 2, 4  1, 2, 4  Salt Crus  Aquatic Ir  Hydrogen  Oxidized  Presence  Recent Ire  Stunted o	ined Lea IA, and 4 t (B11) nvertebrat a Sulfide C Rhizosph of Reduc on Reduc or Stresse	es (B13) Odor (C1) eres alon ed Iron (I tion in Til d Plants (	g Living Roo C4) led Soils (C6	RA ots (C3)	Secon Wi Dr Dr Cr Se	adary Indice ater-Staine 4A, and rainage Pa ry-Season aturation Vecomorphice allow Aquental acc-Neutral	ators (2 or red Leaves (4B) tterns (B10) Water Table isible on Ae Position (D itard (D3) Test (D5) Mounds (D6	more required) B9) (MLRA 1, 2 ) e (C2) vial Imagery (C2) ) (LRR A)
Saturation Present? Yes \( \Boxed{\omega} \) No \( \Boxed{\omega} \) Depth (inches): \( \boxed{\omega} \) Wetland Hydrology Present? Yes \( \Boxed{\omega} \) No \( \Boxed{\omega} \) includes capillary fringe)	YDROLOG Vetland Hyd Primary Indication Surface V High Water Ma Sediment Drift Depot Algal Mat Iron Depot Surface S Inundation Sparsely Visited Observ	Indicators of hydricators of hydricators (minimum of Vater (A1) er Table (A2) er (A3) er (B4) er (B3) or Crust (B4) er (B5) soil Cracks (B6) er Visible on Aerial Vegetated Concaverations:	s: one required Surface	uired; ch	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o	ained Lea IA, and 4 t (B11) overtebrat a Sulfide ( Rhizosph of Reduc on Reduc or Stresse plain in R	es (B13) Odor (C1) eres alon eed Iron (Ction in Til d Plants (emarks)	g Living Roo C4) led Soils (C6	RA ots (C3)	Secon Wi Dr Dr Cr Se	adary Indice ater-Staine 4A, and rainage Pa ry-Season aturation Vecomorphice allow Aquental acc-Neutral	ators (2 or red Leaves (4B) tterns (B10) Water Table isible on Ae Position (D itard (D3) Test (D5) Mounds (D6	more required) B9) (MLRA 1, 2 ) e (C2) vial Imagery (C2) ) (LRR A)
includes capillary fringe)	YDROLOG Vetland Hyd Primary Indica Surface V High Wate Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely Field Observ	indicators of hydricators of hydricators of hydricators ators (minimum of Vater (A1) er Table (A2) er (A3) er (B4) er (B4) er (B5) er (B5) er (B5) er (B6) er	c soils o	uired; chu	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Lea  IA, and 4  I (B11)  Invertebrat  I Sulfide C  Rhizosph  of Reduct  on Reduct  or Stresse  plain in R	es (B13) Odor (C1) eres alon ed Iron (tion in Til d Plants ( emarks)	g Living Roo C4) led Soils (C6 D1) ( <b>LRR A</b>	RA ots (C3)	Secon Wi Dr Dr Cr Se	adary Indice ater-Staine 4A, and rainage Pa ry-Season aturation Vecomorphice allow Aquental acc-Neutral	ators (2 or red Leaves (4B) tterns (B10) Water Table isible on Ae Position (D itard (D3) Test (D5) Mounds (D6	more required) B9) (MLRA 1, 2 ) e (C2) vial Imagery (C2) ) (LRR A)
	YDROLOG Vetland Hyd Primary Indica Surface V High Water Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely Field Observ Surface Water	Indicators of hydricators of hydricators of hydricators ators (minimum of Vater (A1) er Table (A2) er (A3) er (B4) er (B4) er (B4) er (B4) er (B5) er	Imagery	uired; chured;	Water-Sta 1, 2, 4 Salt Crusi Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Lea  IA, and 4  I (B11)  Invertebrate I Sulfide C Rhizosph I Reduct I Stresse I Stresse I Splain in R  I Ses):	es (B13) Odor (C1) eres alon ced Iron (i tion in Til d Plants ( emarks)	g Living Roo C4) led Soils (Co D1) ( <b>LRR A</b>	RA (C3)	Secon War Dr Dr Sa Ge Sh FA	adary Indic ater-Staine 4A, and ainage Pa y-Season aturation V eomorphic nallow Aqu AC-Neutral aised Ant N ost-Heave	ators (2 or red Leaves (4B)  Water Table isible on Ae Position (D3) Test (D5)  Mounds (D6 Hummocks	more required) B9) (MLRA 1, 2 ) e (C2) erial Imagery (C 2) ) (LRR A) s (D7)
	YDROLOG  Vetland Hyd  Primary Indication  Surface Water Mater  Drift Depote Surface Surface Surface Surface Surface Water Mater Surface Water Table Featuration Pro-	Indicators of hydricators of hydricators of hydricators ators (minimum of Vater (A1) er Table (A2) er (A3) er (B4) er (B4) er (B4) er (B4) er (B5) er	Imagery	uired; chured;	Water-Sta 1, 2, 4 Salt Crusi Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Lea  IA, and 4  I (B11)  Invertebrate I Sulfide C Rhizosph I Reduct I Stresse I Stresse I Splain in R  I Ses):	es (B13) Odor (C1) eres alon ced Iron (i tion in Til d Plants ( emarks)	g Living Roo C4) led Soils (Co D1) ( <b>LRR A</b>	RA (C3)	Secon War Dr Dr Sa Ge Sh FA	adary Indic ater-Staine 4A, and ainage Pa y-Season aturation V eomorphic nallow Aqu AC-Neutral aised Ant N ost-Heave	ators (2 or red Leaves (4B)  Water Table isible on Ae Position (D3) Test (D5)  Mounds (D6 Hummocks	more required) B9) (MLRA 1, 2 ) e (C2) erial Imagery (C 2) ) (LRR A) s (D7)
Remarks: No primary or secondary indicators of wetland hydrology observed.	YDROLOG Wetland Hyd Primary Indica Surface W High Water Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely Field Observ Surface Water Water Table F Saturation Profincludes cap	indicators of hydricators of hydricators of hydricators actors (minimum of Vater (A1) er Table (A2) er (A3) er (B4) er (B4) er (B4) er (B5) er	Imagery ve Surface Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes	uired; chuired; chuir	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex	ained Lea  IA, and 4  I (B11)  Invertebrat  I Sulfide C  Rhizosph  I Reduct  I Stresse  I plain in R  I Ses):  I Ses):	es (B13) Odor (C1) eres alon ed Iron (tion in Til d Plants ( emarks)	g Living Roo C4) led Soils (C6 D1) (LRR A	RA  ots (C3) 6)	Secon Wi Dr Dr Sa Ge Sr FA	adary Indic ater-Staine 4A, and ainage Pa y-Season aturation V eomorphic nallow Aqu AC-Neutral aised Ant N ost-Heave	ators (2 or red Leaves (4B)  Water Table isible on Ae Position (D3) Test (D5)  Mounds (D6 Hummocks	more required) B9) (MLRA 1, 2 ) e (C2) erial Imagery (C 2) ) (LRR A) s (D7)
tomand. No primary or secondary indicators of welland hydrology observed.	YDROLOG Wetland Hyde Primary Indication Surface V High Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely Field Observ Surface Water Water Table F Saturation Profincludes cap Describe Rec	Indicators of hydricators ators (minimum of Vater (A1) er Table (A2) in (A3) arks (B1) er Deposits (B2) osits (B3) or Crust (B4) osits (B5) soil Cracks (B6) in Visible on Aerial Vegetated Concavorations:  er Present?  Present?  Present?  ersent?  ersent?  ersent?  ersent?  ersent?  ersent?	Imagery ve Surface Yes  Yes  Yes  m gauge	uired; chuired; chuir	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydrogen Oxidized Presence Recent Ir Stunted o Other (Ex  Depth (inche Depth (inche	ained Lea  IA, and 4  I (B11)  Invertebrat  I Sulfide C  Rhizosph  of Reduct  on Reduct  on Reduct  r Stresse  plain in R  es):  es):  I photos, I	es (B13) Odor (C1) eres alon eed Iron (Cition in Til d Plants (emarks)	g Living Roo C4) led Soils (C6 D1) (LRR A	RA  ots (C3) 6)	Secon Wi Dr Dr Sa Ge Sr FA	adary Indic ater-Staine 4A, and ainage Pa y-Season aturation V eomorphic nallow Aqu AC-Neutral aised Ant N ost-Heave	ators (2 or red Leaves (4B)  Water Table isible on Ae Position (D3) Test (D5)  Mounds (D6 Hummocks	more required) B9) (MLRA 1, 2 ) e (C2) erial Imagery (C 2) ) (LRR A) s (D7)
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# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Guadagno King County	(	City/Cour	nty: <u>Vashon Is</u>	sland, King County	Sampling Date: April 22, 2022
Applicant/Owner: Phil and Anne Guadagno			Sampling Point: SP 3		
Investigator(s): Annamaria Clark & Courtney Straight			_ Section, To	wnship, Range: <u>S13, T23ľ</u>	N, R2E, W.M.
Landform (hillslope, terrace, etc.): Flat		Local re	lief (concave,	convex, none): concave	Slope (%): <u>5-10</u>
Subregion (LRR): Northwest Forests & Coasts (LRR A)	Lat: 47.47	7851		Long: <u>-122.49055</u>	Datum:
Soil Map Unit Name: Alderwood gravelly sandy loam				NWI classificat	tion: None
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sign	nificantly dist	turbed?	Are "No	ormal Circumstances" pres	ent? Yes 🛛 No 🗌
Are Vegetation, Soil, or Hydrology natu	-			ed, explain any answers in	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present? Yes ⊠ No □					
Hydric Soil Present? Yes ⊠ No □			the Sampled		_
Wetland Hydrology Present? Yes ☐ No ☒		wit	thin a Wetlan	nd? Yes □ No	o ⊠
Remarks: Sample Plot 3 is located at the top of the slope i	n a depresio	on near th	e eastern pro	perty line.	
<b>VEGETATION</b> – Use scientific names of plan	ts.				
Trace Observations (Distractors 5 or)			nt Indicator	Dominance Test works	heet:
Tree Stratum (Plot size: 5 m)			Status	Number of Dominant Sp	
1. Alnus rubra (red alder)				That Are OBL, FACW, o	r FAC: <u>3</u> (A)
2. Sorbus aucuparia (European moutain ash)				Total Number of Domina	
3				Species Across All Strate	a: <u>3</u> (B)
7.	40			Percent of Dominant Spo	
Sapling/Shrub Stratum (Plot size: 3 m)		- rotar	00101	That Are OBL, FACW, o	r FAC: <u>100</u> (A/B)
Prunus laurocerasus (cherry laurel)	30	<u>Y</u>	<u>NI</u>	Prevalence Index work	sheet:
Malus fusca (Oregon crabapple)	30	Y	FACW	Total % Cover of:	Multiply by:
Rubus ursinus (California dewberry)	<u>10</u>	N	FACU	OBL species	x 1 =
Rubus armeniacus (Himalayan blackberry)	5	N	FAC		x 2 =
5. <u>Ilex aquifolium (English holly)</u>	<u>5</u> 5	N	<u>FACU</u>	· · · · · · · · · · · · · · · · · · ·	x 3 =
6. Lonicera ciliosa (orange honeysuckle) 7. Hedera helix (English ivy)	5 5	N N	NI FACU		x 4 =
8. Rubus spectabilis (salmon raspberry)	3	N	FAC		x 5 =
Harb Stratum (Plot size: 1 m)	93	= Total	Cover	Column Totals:	(A) (B)
Herb Stratum (Plot size: 1 m)  1. Ranunculus repense (creeping buttercup)	50	Y	FAC	Prevalence Index	= B/A =
Narianculus repense (creeping buttercup)     Vinca minor (common periwinkle)				Hydrophytic Vegetation	
Equisteum arvense (field horsetail)	20			☐ 1 - Rapid Test for Hy	drophytic Vegetation
Equipment arvenue (northern bracken fern)  4. Pteridium aquilinum (northern bracken fern)				□ 2 - Dominance Test	is >50%
Polysticum munitum (pineland sword fern)				☐ 3 - Prevalence Index	( is ≤3.0¹
6					daptations1 (Provide supporting
7					or on a separate sheet)
8				5 - Wetland Non-Vas	
9				-	nytic Vegetation¹ (Explain)
10				be present, unless distur	and wetland hydrology must rbed or problematic.
11		-			·
	102	= Total	Cover		
Woody Vine Stratum (Plot size: 3 m)				Hydrophytic	
1				Vegetation Present? Yes	s ⊠ No □
2	0			11030111: 163	
% Bare Ground in Herb Stratum	<u>U</u>	= 10(8)	COVEI		

Remarks: Sorbus acuparia, Pruns laurocerasus, Lonicera ciliosa, and Vinca	a minor not included in analsis as WIS unknown.

Depth	Matrix			Red	lox Featur	es				
(inches)	Color (moist)	%	Colo	or (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	<u>e</u> _	Remarks
0 - 8	2.5Y 4/3	90	10Y	R 4/4	10	<u>C</u>	<u>M.</u>	Si. Cl. L		
8-14+	2.5Y 5/1	90	10Y	R 4/4	10	<u>C</u>	M	Si. Cl. L		
	-							-		
¹Type: C=C	Concentration, D=D	epletion,	RM=Red	uced Matrix, C	CS=Covere	ed or Coat	ed Sand Gr	rains.	<sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
	Indicators: (App								dicato	rs for Problematic Hydric Soils <sup>3</sup> :
☐ Histosol	I (A1)			Sandy Redox	(S5)				2 cm	Muck (A10)
	pipedon (A2)			Stripped Matrix	` '					Parent Material (TF2)
	istic (A3)			_oamy Mucky			t MLRA 1)		-	Shallow Dark Surface (TF12)
	en Sulfide (A4)	(0.4.4)		_oamy Gleyed		2)			Othe	r (Explain in Remarks)
	d Below Dark Surfa ark Surface (A12)	ice (A11)		Depleted Matri Redox Dark Si	, ,	١		31,-	diaata	rs of hydrophytic vegetation and
	Mucky Mineral (S1)			Depleted Dark	•	•		-11		nd hydrology must be present,
	Gleyed Matrix (S4)			Redox Depres						s disturbed or problematic.
•	Layer (if present)	:	<u> </u>							
Type:										
	nches):							Hydri	c Soil	Present? Yes ⊠ No □
Remarks:	<u> </u>									
HYDROLO	OGY									
•	drology Indicator	s:								
i ililiaiv IIIQI	drology Indicator		uired: ch	eck all that ap	olv)				Secon	dary Indicators (2 or more required)
	icators (minimum o		uired; che			/es (B9) (€	except MLR	RA		dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2,
Surface	icators (minimum o Water (A1)		uired; che	☐ Water-Sta	ained Leav		except MLR	RA		ater-Stained Leaves (B9) (MLRA 1, 2,
Surface	icators (minimum o Water (A1) ater Table (A2)		uired; ch	☐ Water-Sta	ained Leav		xcept MLR	RA	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Surface High Wa	icators (minimum o Water (A1) ater Table (A2) on (A3)		uired; che	☐ Water-Sta  1, 2, 4 ☐ Salt Crus	ained Leav <b>1A, and 4I</b> t (B11)	3)	except MLR	RA	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10)
Surface High Wa Saturatio Water M	icators (minimum o Water (A1) ater Table (A2) on (A3)		uired; cho	☐ Water-Sta	ained Leav 1A, and 4I t (B11) nvertebrate	<b>3)</b> es (B13)	except MLR		☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Surface High Wa Saturatio Water M	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1)		uired; ch	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger	ained Leaven AA, and 4I (B11)  nivertebrate Sulfide C	es (B13) Odor (C1)			☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2)
Surface High Wa Saturati Water M Sedimer Drift De	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2)		uired; cho	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger	ained Leave 1A, and 4I t (B11) nvertebrate n Sulfide C Rhizosphe	es (B13) odor (C1) eres along	Living Roo		☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9)
Surface High Wa Saturati Water M Sedimet Drift Dep Algal Ma	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3)		uired; che	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence	ained Leaver AA, and 4l t (B11) invertebrate Sulfide Control Rhizospher of Reduction	es (B13) odor (C1) eres along ed Iron (C	Living Roo	ots (C3)	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2)
Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		uired; che	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir	ained Leaver 44, and 41 trick (B11) invertebrate and Sulfide Critical Rhizospher of Reduction Reduction	es (B13) odor (C1) eres along ed Iron (C- ion in Tille	Living Roo 4)	ots (C3)	☐ Wa	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) ecomorphic Position (D2) allow Aquitard (D3)
Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	f one req		Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir	ained Leaven And All And And All And And All And	es (B13) odor (C1) eres along ed Iron (Cion in Tille d Plants (D	Living Roo 4) d Soils (C6	ots (C3)	Dra Dra Sa Ge Sh Ra	Atter-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)  ainage Patterns (B10)  y-Season Water Table (C2)  turation Visible on Aerial Imagery (C9)  eomorphic Position (D2)  allow Aquitard (D3)  C-Neutral Test (D5)
Surface High Wa Saturati Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6)	f one req	γ (B7)	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o	ained Leaven And All And And All And And All And	es (B13) odor (C1) eres along ed Iron (Cion in Tille d Plants (D	Living Roo 4) d Soils (C6	ots (C3)	Dra Dra Sa Ge Sh Ra	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) emorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Surface	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria	f one req	γ (B7)	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o	ained Leaven And All And And All And And All And	es (B13) odor (C1) eres along ed Iron (Cion in Tille d Plants (D	Living Roo 4) d Soils (C6	ots (C3)	Dra Dra Sa Ge Sh Ra	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) emorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria	f one req	γ (B7)	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o	ained Leaven And All the (B11) invertebrate Sulfide Control Rhizosphor of Reduction Reductor Stressed splain in R	es (B13) dor (C1) eres along ed Iron (Ci ion in Tille d Plants (Ci emarks)	Living Roo 4) d Soils (C6	ots (C3)	Dra Dra Sa Ge Sh Ra	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) emorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
Surface High Wa Saturati Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely	icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria by Vegetated Concastructions:	I Imagery ve Surfac	/ (B7) ce (B8)	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of	ained Leaven And All the (B11) invertebrate in Sulfide Control Reduction Reduction Stressed (splain in Reduction Stressed (spl	es (B13) ador (C1) ares along ed Iron (C- ion in Tille d Plants (D- emarks)	Living Roo 4) d Soils (C6	ots (C3)	Dra Dra Sa Ge Sh Ra	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) emorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
Surface High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Surface Inundati Sparsely Field Observation	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria by Vegetated Conca rvations: ter Present?	f one req I Imagery ve Surfac	/ (B7) ce (B8) No ⊠	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leaver AA, and 41 trice (B11) invertebrate in Sulfide Control Reduction Reduction Reduction Stressed (splain in Reductio	es (B13) codor (C1) eres along ed Iron (C ion in Tille d Plants (C emarks)	Living Roo 4) d Soils (C6 11) (LRR A)	ots (C3)	☐ Wa ☐ Dra ☐ Dra ☐ Sa ☐ Ge ☐ Sh ☐ FA	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) emorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
Surface High Wa Saturatio Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obset Surface Wa Water Table Saturation F (includes ca	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ter Present? e Present?	I Imagery ve Surface Yes  Yes  Yes  Yes  Yes  Yes	/ (B7) ce (B8) No ⊠ No ⊠ No ⊠	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leaven And All the (B11) invertebrate in Sulfide Con Reduction Reduction Stressed (Splain in Reseas):	es (B13) bdor (C1) eres along ed Iron (C ion in Tille d Plants (C emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ots (C3)	☐ Wa ☐ Dra ☐ Dn ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Fro	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)
Surface High Wa Saturatio Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obset Surface Wa Water Table Saturation F (includes ca	icators (minimum of Water (A1) ater Table (A2) on (A3) Marks (B1) at the Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria by Vegetated Concarvations:  ter Present?  Present?	I Imagery ve Surface Yes  Yes  Yes  Yes  Yes  Yes	/ (B7) ce (B8) No ⊠ No ⊠ No ⊠	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leaven And All the (B11) invertebrate in Sulfide Con Reduction Reduction Stressed (Splain in Reseas):	es (B13) bdor (C1) eres along ed Iron (C ion in Tille d Plants (C emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ots (C3)	☐ Wa ☐ Dra ☐ Dn ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Fro	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)
Surface High Wa Saturatio Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Wa Water Table Saturation F (includes ca	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ter Present? e Present? Present? apillary fringe) ecorded Data (streat	I Imagery ve Surfac Yes  Yes  Yes  Am gauge	/ (B7) ce (B8)  No ⊠ No ⊠ No ⊠ one in the interval is a second in the interval in the interval is a second in the interval in the interval is a second in the interval in	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leaven And All to (B11) invertebrate in Sulfide Con Reduction Reduction Stressed (plain in Resease):	es (B13) ador (C1) ares along ed Iron (C ion in Tille d Plants (C emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ots (C3)	☐ Wa ☐ Dra ☐ Dn ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Fro	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)
Surface High Wa Saturatio Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Wa Water Table Saturation F (includes ca	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ter Present? e Present?	I Imagery ve Surfac Yes  Yes  Yes  Am gauge	/ (B7) ce (B8)  No ⊠ No ⊠ No ⊠ one in the interval is a second in the interval in the interval is a second in the interval in the interval is a second in the interval in	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leaven And All to (B11) invertebrate in Sulfide Con Reduction Reduction Stressed (plain in Resease):	es (B13) ador (C1) ares along ed Iron (C ion in Tille d Plants (C emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ots (C3)	☐ Wa ☐ Dra ☐ Dn ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Fro	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)
Surface High Wa Saturatio Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Wa Water Table Saturation F (includes ca	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ter Present? e Present? Present? apillary fringe) ecorded Data (streat	I Imagery ve Surfac Yes  Yes  Yes  Am gauge	/ (B7) ce (B8)  No ⊠ No ⊠ No ⊠ one in the interval is a second in the interval in the interval is a second in the interval in the interval is a second in the interval in	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leaven And All to (B11) invertebrate in Sulfide Con Reduction Reduction Stressed (plain in Resease):	es (B13) ador (C1) ares along ed Iron (C ion in Tille d Plants (C emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ots (C3)	☐ Wa ☐ Dra ☐ Dn ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Fro	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)
Surface High Wa Saturatio Water M Sedimer Drift Der Algal Ma Iron Der Surface Inundati Sparsely Field Obser Surface Wa Water Table Saturation F (includes ca	icators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) ion Visible on Aeria y Vegetated Conca rvations: ter Present? e Present? Present? apillary fringe) ecorded Data (streat	I Imagery ve Surfac Yes  Yes  Yes  Am gauge	/ (B7) ce (B8)  No ⊠ No ⊠ No ⊠ one in the interval is a second in the interval in the interval is a second in the interval in the interval is a second in the interval in	Water-Sta 1, 2, 4 Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Leaven And All to (B11) invertebrate in Sulfide Con Reduction Reduction Stressed (plain in Resease):	es (B13) ador (C1) ares along ed Iron (C ion in Tille d Plants (C emarks)	Living Roo 4) d Soils (C6 1) (LRR A)	ots (C3)	☐ Wa ☐ Dra ☐ Dn ☐ Sa ☐ Ge ☐ Sh ☐ FA ☐ Fro	ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C9) comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)