Wetland Report

Prepared For: Port of Chehalis

Site Address: 123 Habein Road, Chehalis

Tax Parcel Number: 017539006000

Date: November 17, 2020

Prepared By:

Environmental Design, LLC.

Septic Design • Wetlands • Mapping

901 L Street, Centralia, WA 98531

(360) 219-3343

Table of Contents

Introduction:

Environmental Design, LLC conducted a Wetland Study on November 13, 2020 to determine if wetland habitat is present on the property located 123 Habein Road in Chehalis. The site is currently used as industrial land and will remain being used as industrial land.

In order to conduct a thorough review of the site to determine if wetlands are present on the site several resources were reviewed. The project started by pulling research and reviewing the research from several sources. After review of the research it was noted that wetlands were mapped on the site. A site visit was then conducted in order to test in areas for wetland habitat. Since the site has been primarily used and maintained as residential use, test sites were completed in areas where vegetation, elevation or other characteristics changed that indicated a possible presence of wetland habitat.

Site Description:

The site is located at 123 Habein Road in Chehalis, Washington. The site is identified by Lewis County by the parcel number 01739006000. The site is located in Section 04 of Township 13 North, Range 02 West. The property is about 6.43 acres in size and is relatively flat. The site is currently and will remained being used as industrial property. According to the research pulled wetlands are mapped on the site and in the surrounding areas.

The area around the site is primarily industrial area with mapped wetlands and hydric soils located throughout the sites.

Methodology:

A site visit was conducted on November 17, 2020 where Environmental Design walked the property and tested in various areas where vegetation seemed to have changed or where wetland habitat could be present. The site is consistent with the hydrology, vegetation, and soils at each test plot location.

Environmental Design, LLC completed the wetland study of this site by using the Routine Determination Method according to the 1987 U.S. Army Corp of Engineers Wetland Delineation Manual and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region.

In order to complete this method first research was conducted by pulling information and maps from the National Wetland Inventory website, the Lewis County Website, the NRCS website to find out what the soils were and also further information was pulled from the Department of Natural Resources website. After reviewing the research a site visit was conducted and areas were tested where vegetation, elevation, or the soil may have changed.

When using the Routine Approach, a wetland area must meet three specific parameters. These three parameters are hydrology, vegetation and hydric soils. Hydrology can be difficult to assess because it may or may not be present, depending on the time of year. Vegetation and soils are important to assess if there has been hydrology present in the past. If the site meets the hydrology, vegetative and hydric soil parameters then the site is considered a wetland. If one parameter is not met then the area is not considered a wetland.

Observations:

Vegetation:

Wetland Vegetation has been classified into indicator statuses of how likely the plant is to be found in a wetland habitat. The indicator status of each plant species can be found on the data forms. The different indicator statuses are listed below:

- Obligate Wetland (OBL) – highly likely to be in a natural wetland environment
- Facultative Wetland (FACW) –most likely to be present in a natural wetland environment
- Facultative (FAC) – can be present in both a natural wetland and non-wetland environment
- Facultative Upland (FACU) –may be present in a natural wetland, but most likely to be seen in non-wetland conditions
- Obligate Upland (UPL) – most likely to occur in non-wetland conditions
- No Indicator – the plant does not have enough data to determine the indicator status yet

The site is primarily vegetated with field grass varieties, Oxeye Daisies, Cats Ear and Canadian Thistle.

The surrounding areas are similar in vegetation.

Soils:

The site is mapped as Lacamas Silt Loam and Prather Silty Clay Loam according to the U.S.D.A Natural Resources Conservation Service *Soil Survey of Lewis County, Washington (1980)*. The Lacamas series is listed on the hydric soils list produced by the U.S.D.A Natural Resources Conservation. The areas where test plots were conducted, the soil appeared to be consistent with the profile of the Newberg Fine Sandy Loam series.

The NRCS describes the Lacamas Silt Loam series as a very deep, poorly drained soil located on broad plains, terraces and bottom lands. In a typical profile, the upper portion of the surface layer extends to a depth of about 7 inches and is very dark grayish brown silt loam. The lower portion of the surface layer is mottled, dark grayish brown and grayish brown silt loam extending to a depth of about 10 inches. The subsoil is mottled, olive gray silty clay for the upper 19 inches and the lower portion is mottled, olive gray clay extending to a depth of 60 inches or more.

The NRCS describes the Prather Silty Clay Loam series is described as a very deep moderately drained soil that can be found on broad till plains and terraces. In a representative profile, the surface is generally covered with a mat of partially decomposed organic litter about 2 inches thick. The upper part of the surface layer is very dark brown silty clay loam that extends about 7 inches. The lower portion of the surface layer about 7 inches thick and is a dark brown silty clay loam. The following 12 inches of the subsoil is dark brown silty clay and the next 25 inches is mottled, dark brown silty clay and yellowish brown clay. The substratum of the profile extends to a depth of 60 inches or more and is mottled, dark reddish brown, gray and brown clay.

The soil appeared to be well drained in the upland areas and not so well drained in the lower test plot locations. The soil was evaluated to a depth of about 16-20 inches at each test plot location. See Appendix C for the Test Plot Data Form.

Hydrology:

The site appears to be well drained; however, evidence of hydrology was present in the lower area. See Appendix C for the Test Plot Data Form.

Wildlife:

The area is shown not to have species listed on the Priority Habitat Species Map produced by Fish and Wildlife. The vegetation surrounding the agricultural fields does provide great habitat for amphibians, birds and other mammals, as well as a sound barrier from surrounding activities.

Topography:

The topography at the site is relatively flat with slopes measuring between 0 to 3%.

Surrounding Wetlands and Impacts:

The National Wetlands Inventory (NWI) map and other maps do depict mapped wetlands within the area. It needs to be noted that the NWI maps and GeoData Center needs to be used cautiously as they compile general wetland data.

Environmental Design did not find wetland habitat located on the site within 300 feet of the parcel. Environmental Design conducted a further site investigation by site visit and by the use of mapping resources to determine if any wetland buffers or habitats would impact the client’s project.

Conclusions:

Environmental Design, LLC concludes that wetland habitat is not present on the site or within 300 feet of the parcel.

References:

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

Lewis County. Critical Areas Map. Online map. https://fortress.wa.gov/lewisco/home/.

Soil Conservation Service. 1995. Hydric Soils for Washington. Online document: http://www.statlab.iastate.edy:80/soils/hydric/wa/html.

Soil Conservation Service. 1980. Soil Survey of Lewis County, Washington. U.S. Department of Agriculture, Washington DC.

Soil Conservation Service. 1990. Soil Survey of Thurston County, Washington. U.S. Department of Agriculture, Washington DC.

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-103. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Washington State Department of Ecology. 1997. Washington State Wetlands Identification and Delineation Manual. Publication # 96-94. Olympia, Washington.

Washington State Department of Ecology. 2004. Washington State Wetlands Rating System: Western Washington Revised. Publ. # 04-06-025. Olympia, Washington.

Washington Department of Fish and Wildlife. Priority Habitat Species (PHS) Database. (August 2014)

The determination of this wetland was completed by Environmental Design, LLC. The determination of this wetland is based on scientific method and our best professional judgment. Environmental Design, LLC agrees that the conclusion should agree with the local, state, and federal regulatory agencies.

Completed By:

Becky Rieger
Wetland Specialist

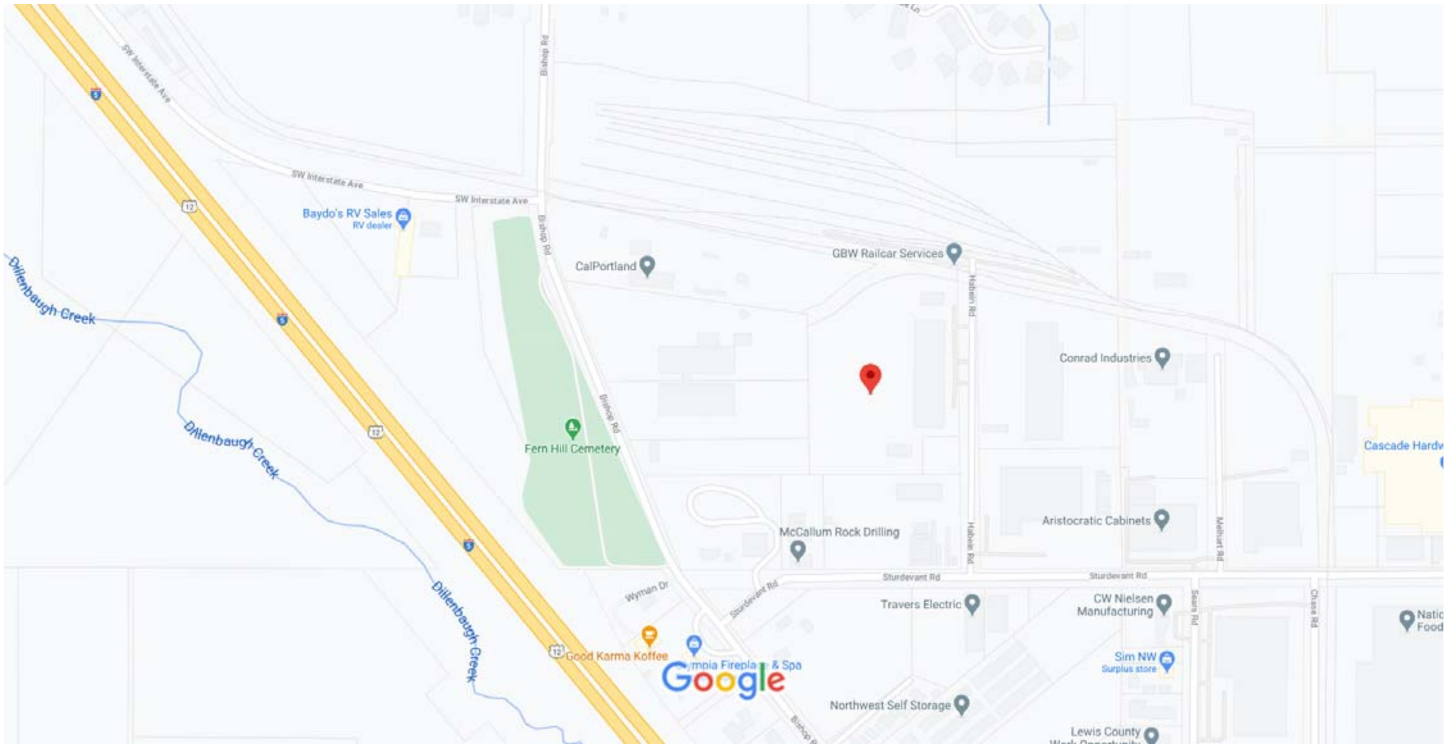
Appendix A:

Wetland Maps

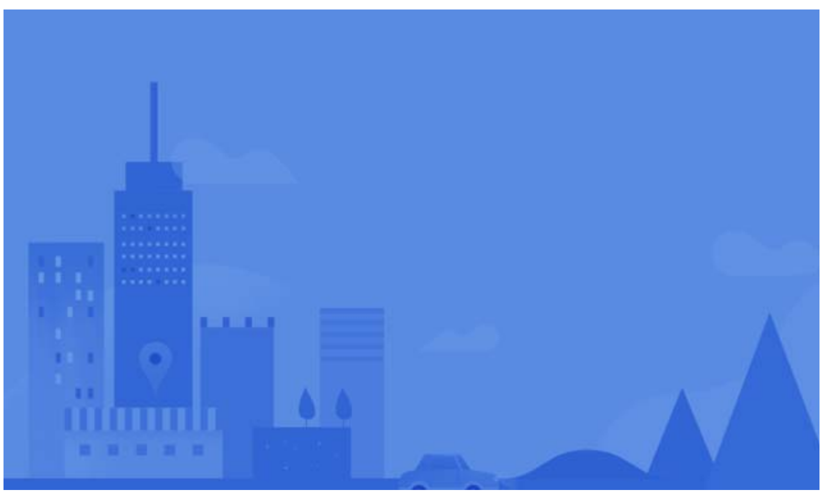
Google Maps

123 Habein Rd

Figure 1: Site Location Map



Map data ©2020 200 ft



123 Habein Rd

Chehalis, WA 98532

Directions Save Nearby Send to your phone Share

At this location

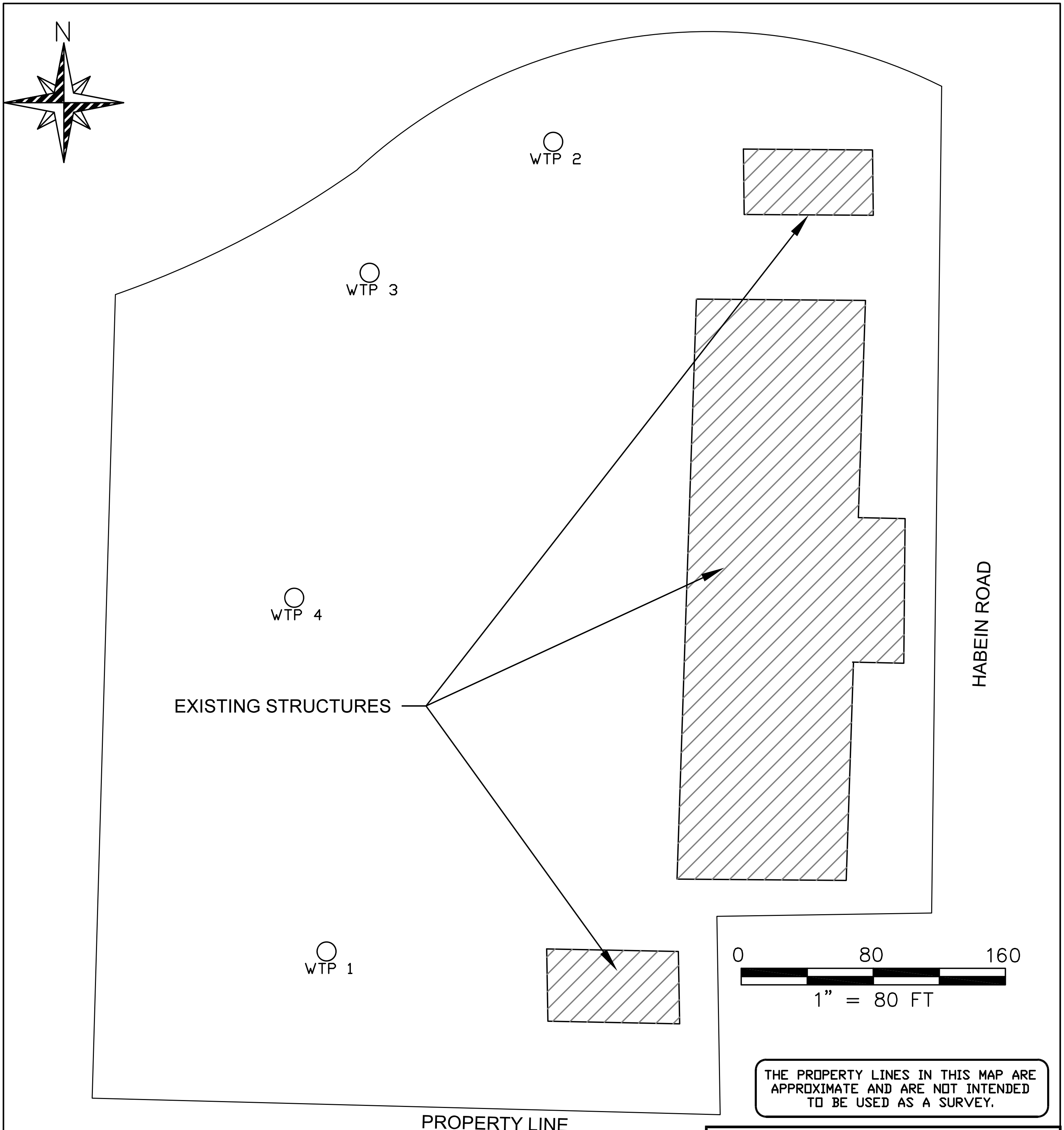
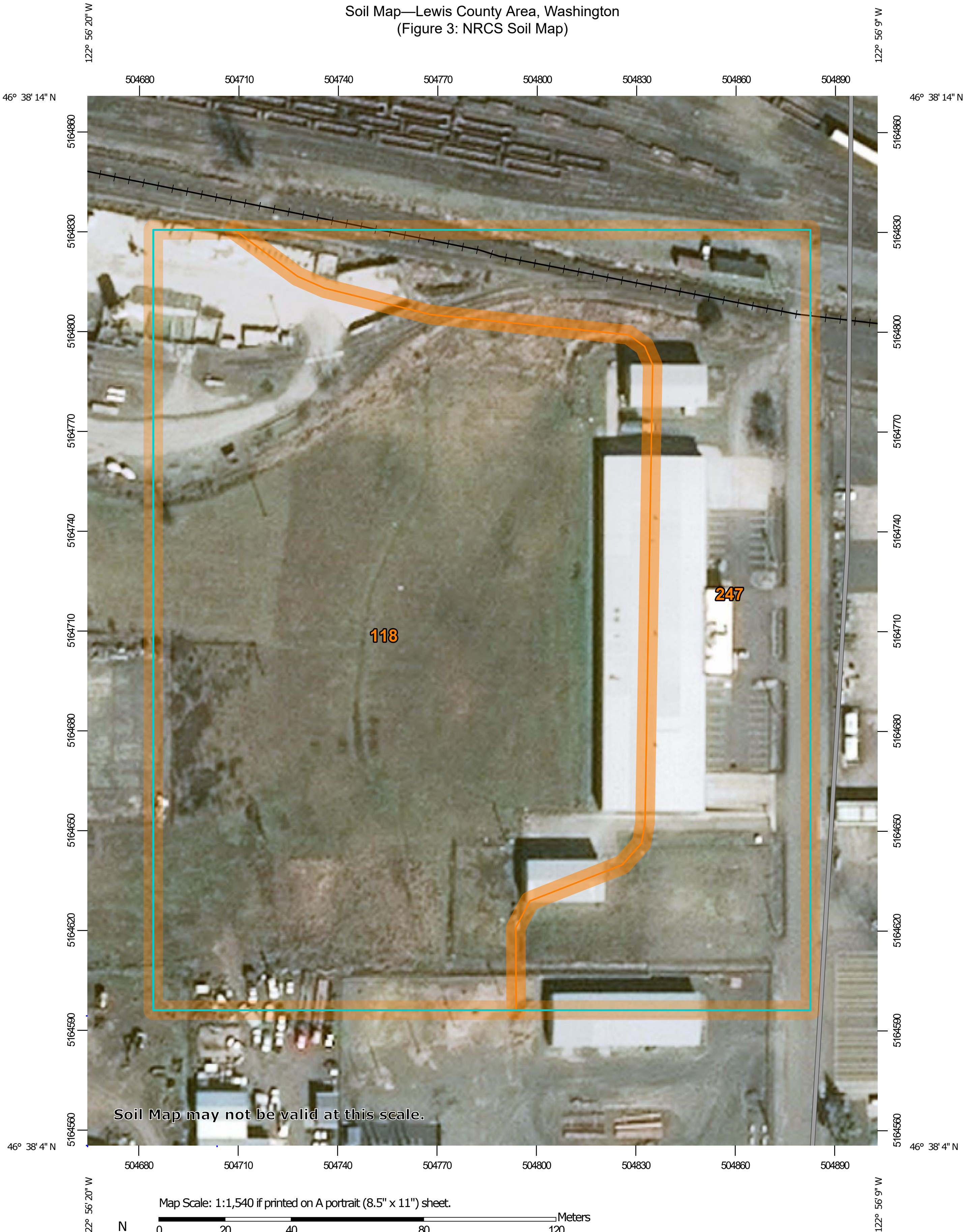


FIGURE 2: SITE MAP
TEST PLOT LOCATIONS

Environmental Design, LLC.
Septic Design • Wetlands • Mapping
901 L Street
Centralia, Wa. 98531
(360) 219-3343

CLIENT NAME:	PORT OF CHEHALIS	SITE ADDRESS:	123 HABEIN ROAD	JOB NUMBER: 2020-309
MAILING ADDRESS:	321 MAURIN RD		CHEHALIS, WA	DATE: 11/17/2020
	CHEHALIS, WA 98532	PARCEL NUMBER:	017539006000	DRAFTED BY: BJR
PHONE NUMBER:	----	SEC-TWN-RNG:	04-13N-02W	REVIEWED BY: BJR

Soil Map—Lewis County Area, Washington
(Figure 3: NRCS Soil Map)



Map Scale: 1:1,540 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 20, 40, 80, 120

Feet: 0, 50, 100, 200, 300

N

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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 projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the 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: Lewis County Area, Washington
Survey Area Data: Version 20, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 30, 2019—May 10, 2019

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
118	Lacamas silt loam, 0 to 3 percent slopes	7.6	65.9%
247	Xerorthents, spoils	3.9	34.1%
Totals for Area of Interest		**11.5**	**100.0%**

U.S. Fish and Wildlife Service

National Wetlands Inventory

Figure 4: NWI Map

November 17, 2020

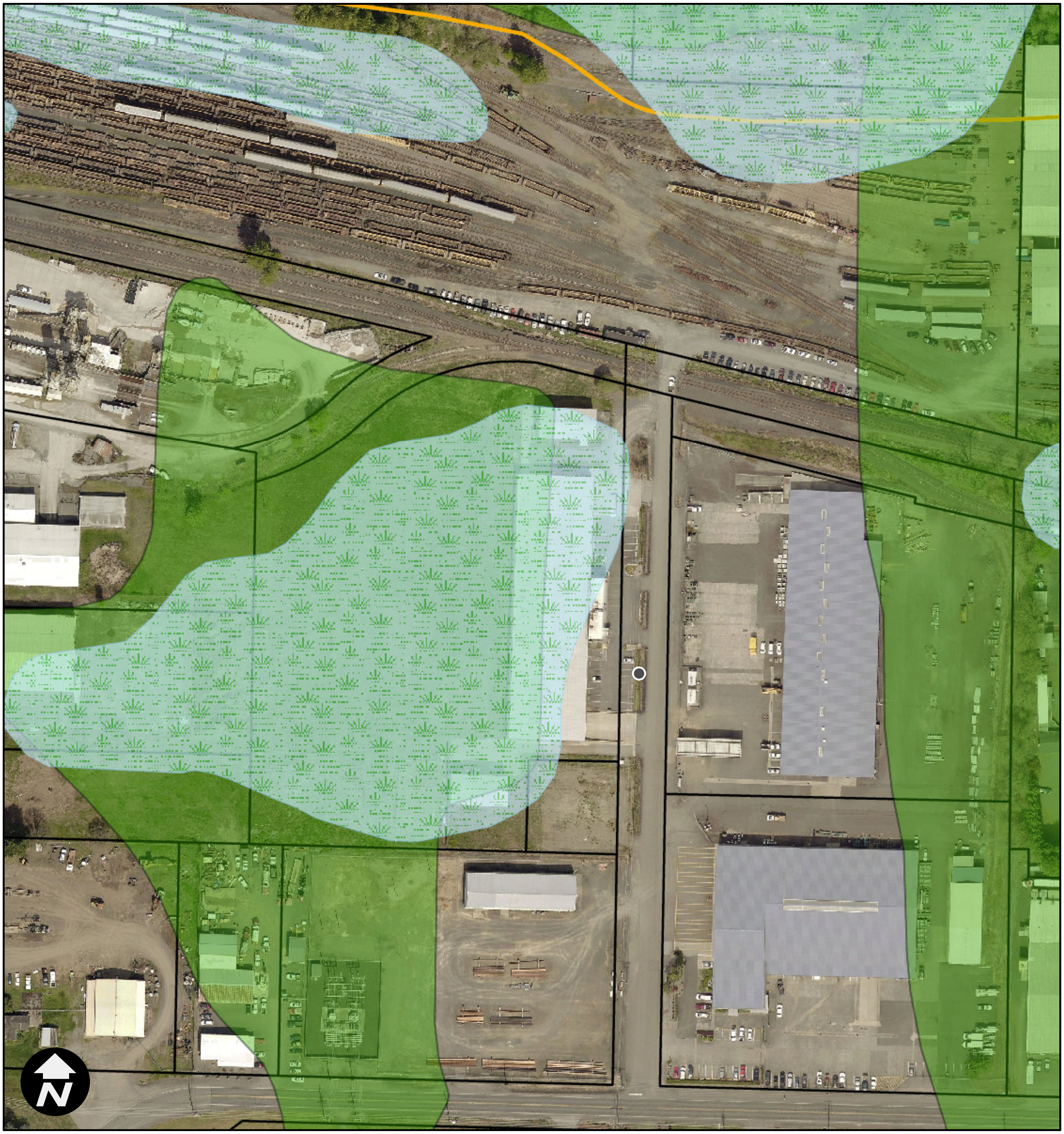
Wetlands

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

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

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

Figure 5: Lewis County Critical Area Map



11/17/2020, 3:16:47 PM

1:2,257

Wetlands

Hydric Soils

Shoreline Environments

Aquatic

Natural

Rural or Urban Conservancy

Shoreline Residential

High Intensity

Stream Buffers

Shoreline 150'

Fish 150'

Non-Fish 75'

Parcels

0 100 200 400 ft

NAD 1983 StatePlane Washington South FIPS 4602 Feet

LEWIS COUNTY — est. 1845 —

Lewis County G.I.S.

Lewis County does not guarantee the accuracy of the information shown on this map and is not responsible for any use or misuse by others regarding this material. It is provided for general informational purposes only. This map does not meet legal, engineering, or survey standards. Please practice due diligence and consult with licensed experts before making decisions.

Priority Habitats and Species on the Web

Report Date: 11/17/2020, Parcel ID: 017539006000

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Generalized Location
Freshwater Emergent Wetland	N/A	N/A	No
Big brown bat	N/A	N/A	Yes

PHS Species/Habitats Details:

Freshwater Emergent Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: PALUSTRINE - NWI Code: PEMC
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	N
SGCN	N
Display Resolution	AS MAPPED
ManagementRecommendations	http://www.ecy.wa.gov/programs/sea/wetlands/bas/index.html
Geometry Type	Polygons

Big brown bat	
Scientific Name	*Eptesicus fuscus*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release (360-902-2543) for obtaining information about masked sensitive species and habitats.
Federal Status	N/A
State Status	N/A
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	N
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00605

Appendix B:

Site Pictures

View of the Site

View of Site

View of the site

Appendix C:

Test Plot Data Forms

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

Project/Site: 123 Habein Road **City/County:** Chehalis / Lewis **Sampling Date:** 13-Nov-20

Applicant/Owner: Port of Chehalis **State:** Washington **Sampling Point:** **WTP 1**

Investigator(s): Becky Rieger **Section, Township, Range: S** 04 **T** 13 N **R** 02 W

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** **Slope:** 0.0 **% /** 0.0 **°**

Subregion (LRR): **Lat.:** **Long.:** **Datum:**

Soil Map Unit Name: **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
Site does not meet criteria

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Leucanthemum vulgare	20	☑ 22.2%	FACU
2. Holcus lanatus	40	☑ 44.4%	FAC
3. Poa annua	30	☑ 33.3%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	90	= Total Cover	
Herb Stratum (Plot size:)			
1. Hypochaeris radicata	30	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	30	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	50.0%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	120 (A)		410 (B)

Prevalence Index = B/A = 3.417

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
Vegetatation does not meet criteria

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: WTP 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc²	Texture	Remarks
0-21	10YR 4/3						Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes No ●

Remarks:

Soil does not appear to be hydric

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	No ●	Depth (inches):
Water Table Present?	Yes	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No ●	Depth (inches):

Wetland Hydrology Present? Yes No ●

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

Aerial Photos / Previous Inspections

Remarks:

Hydrology does not appear to be present

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

Project/Site: 123 Habein Road **City/County:** Chehalis / Lewis **Sampling Date:** 13-Nov-20

Applicant/Owner: Port of Chehalis **State:** Washington **Sampling Point:** **WTP 2**

Investigator(s): Becky Rieger **Section, Township, Range:** **S** 04 **T** 13 N **R** 02 W

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** **Slope:** 0.0 **% /** 0.0 **°**

Subregion (LRR): **Lat.:** **Long.:** **Datum:**

Soil Map Unit Name: **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes (selected) No

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No (selected)
Hydric Soil Present?	Yes (selected)	No
Wetland Hydrology Present?	Yes	No (selected)

Is the Sampled Area within a Wetland? Yes No (selected)

Remarks:

Site does not meet criteria

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1. Leucanthemum vulgare	20	☑	22.2%	FACU
2. Holcus lanatus	40	☑	44.4%	FAC
3. Poa annua	30	☑	33.3%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	90	= Total Cover		
Herb Stratum (Plot size:)				
1. Hypochaeris radicata	30	☑	100.0%	FACU
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
	30	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	50.0%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	120 (A)		410 (B)

Prevalence Index = B/A = 3.417

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes No (selected)

Remarks:

Vegetatation does not meet criteria

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: WTP 2

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

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR	6/1	80	10YR	6/6	20	C	M	Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Soil does appear to be hydric

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Aerial Photos / Previous Inspections

Remarks:

Hydrology does not appear to be present

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

Project/Site: 123 Habein Road **City/County:** Chehalis / Lewis **Sampling Date:** 13-Nov-20

Applicant/Owner: Port of Chehalis **State:** Washington **Sampling Point:** WTP 3

Investigator(s): Becky Rieger **Section, Township, Range:** S 04 T 13 N R 02 W

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** **Slope:** 0.0 % / 0.0 °

Subregion (LRR): **Lat.:** **Long.:** **Datum:**

Soil Map Unit Name: **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
Site does not meet criteria

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Leucanthemum vulgare	20	☑ 22.2%	FACU
2. Holcus lanatus	40	☑ 44.4%	FAC
3. Poa annua	30	☑ 33.3%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	90	= Total Cover	
Herb Stratum (Plot size:)			
1. Hypochaeris radicata	30	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	30	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	50.0%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	120 (A)		410 (B)

Prevalence Index = B/A = 3.417

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
Vegetatation does not meet criteria

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: WTP 3

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

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR	6/1	80	10YR	6/6	20	C	M	Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Soil does appear to be hydric

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Aerial Photos / Previous Inspections

Remarks:

Hydrology does not appear to be present

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

Project/Site: 123 Habein Road **City/County:** Chehalis / Lewis **Sampling Date:** 13-Nov-20

Applicant/Owner: Port of Chehalis **State:** Washington **Sampling Point:** WTP 4

Investigator(s): Becky Rieger **Section, Township, Range: S** 04 **T** 13 N **R** 02 W

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** **Slope:** 0.0 **% /** 0.0 **°**

Subregion (LRR): **Lat.:** **Long.:** **Datum:**

Soil Map Unit Name: **NWI classification:** PEMC

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

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

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

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks:
Site does not meet criteria

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Leucanthemum vulgare	20	☑ 22.2%	FACU
2. Holcus lanatus	40	☑ 44.4%	FAC
3. Poa annua	30	☑ 33.3%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	90	= Total Cover	
Herb Stratum (Plot size:)			
1. Hypochaeris radicata	30	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	30	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	50.0%	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	70	x 3 =	210
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	120 (A)		410 (B)

Prevalence Index = B/A = 3.417

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:
Vegetatation does not meet criteria

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: WTP 4

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

Depth (inches)	Matrix Color (moist)		Matrix %	Redox Features Color (moist)		Redox %	Type[1]	Loc²	Texture	Remarks
0-22	10YR	4/3	100						Clay Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Soil does not appear to be hydric

Hydrology

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Aerial Photos / Previous Inspections

Remarks:

Hydrology does not appear to be present

Credentials

Becky Rieger

Home Address:
901 L Street | Phone: (360) 219-3343
Centralia, WA 98531

Education

Associates Degree in Arts
Centralia Community College — Centralia, Washington
Date of Graduation: June 2007

Associates Degree in Applied Science
Major in Geographic Information Systems
Grays Harbor Community College — Aberdeen, Washington
Date of Graduation: June 2002

Continuing Education / Awards / Organizations

Coastal Training Program
- Certificate in Using the Revised Wetland Rating System (2014)
- Certificate in Identifying Hydric Soils (2012)
- Certificate in Using the Revised Wetland Rating System (2007)

Oregon State University (2006)
- Certificate in Soil Identification

Portland State University Wetland Program (2006)
- Certificate in Wetland Delineation Course
- Certificate in Advanced Hydric Soils and Hydrology Course
- Certificate in Hydrophytic Vegetation Identification Coarse

Licensed On-Site Wastewater Designer (2009-Current) License # 5100369

Olympia Master Builders
- Lewis County Chapter Vice President
- Olympia Master Builders Associate Vice President

Washington On-Site Sewage Association
- SW Washington Designer Rep. (2018 – Current)

Professional Experience

Licensed Designer / Wetland Specialist / Owner May 5, 2010 - Current
Environmental Design, LLC
- Complete Site and Soil Evaluations, Site Consultations, Topography Field Work
- Complete Septic Designs and mapping projects using MicroSurvey
- Complete Wetland and other Critical Area Reports per regulations in multiple jurisdictions
- Perform presentations to educate people about wetlands and septic systems

Assistant Designer / Certified Wetland Specialist Feb. 24, 2005 – Oct. 30, 2007
Goode & Associates Supervisor: Jeannie Yackley
- Complete designs of on-site wastewater designs for county submittal
- Communicate with county regulators, installers, and clients
- Conduct wetland determinations, delineations, mitigations and consultations
- Research projects, apply for permits, and conduct final inspections on installed septic systems
- Perform presentations to educate people about wetlands and septic systems