



Sewall Wetland Consulting, Inc.

PO Box 880
Fall City, WA 98024

Phone: 253-859-0515

June 6, 2022

Matt Willard
Haybrook Landholdings, LLC
PO Box 1359
Ellensburg, Washington 98926

RECEIVED
JUN 24 2022
Kittitas County CDS

RE: Critical Area Report – Parcel #639136
Kittitas County, Washington
SWC Job #22-142

Dear Matt,

This report describes our observations of any jurisdictional wetlands, streams and/or buffers on or within 250' of Parcel #639136.



Above: Vicinity Map of site (Parcel #639136)

The irregular shaped 14.09 acre parcel is located on the east side of Look Road and within portions of Sections 25, Township 18 North, Range 18, and Section 30, Township 18 North, Range 19 East of the W.M in Kittitas County, Washington.



Above: Aerial photograph of the study area from Kittitas Mapsifter website.

METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site and areas within 250' of the site on May 24, 2022.

The site was reviewed using methodology described in the **Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)** (USACOE September 2008) as required by the US Army Corps of Engineers starting in June of 2009. This is the methodology currently recognized by Kittitas County for wetland determinations and delineations. The site was also reviewed using methodology described in Soil colors were identified using the 1990

Edited and Revised Edition of the ***Munsell Soil Color Charts***
(Kollmorgen Instruments Corp. 1990).

Wetlands in Kittitas County are rated using the 2014 Washington State Department of Ecology Washington State *Wetland Rating System for Eastern Washington, 2014 Update* dated June 2014 Publication No. 14-06-018.

The ordinary high water mark (OHWM) of any streams was located based upon the criteria described in the *Washington Department of Ecology draft publication Determining The Ordinary High Water Mark on Streams In Washington State* (WADOE Publication 08-06-001, March 2008).

OBSERVATIONS

Existing Site Documentation.

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the Kittitas Taxsifter website, National Wetland Inventory Map, WDNR Fpars Stream Typing Map, Kittitas County flood & critical areas mapping, WDFW Priority Habitats and Species Maps, and the NRCS Soil Survey online mapping and Data.

Kittitas Taxsifter Website

The Kittitas Taxsifter website with streams and wetland layers activated depicts a serpentine, narrow emergent wetland in the location of Wilson Creek on the east side of the site. This was taken from the USFWS NWI map.



Above: Kittitas County TaxSifter with wetland and stream layers activated.

National Wetlands Inventory (NWI)

The NWI map depicts the same wetland as the Kittitas County website. In fact the TaxSifter mapping was taken from the NWI maps. These wetlands were interpreted from aerial photographs by the US Fish and Wildlife Service using 2017 aerial photographs with no ground-truthing.



Above: NWI map of the area of the site

Soil Survey

According to the NRCS Soil Mapper website, the site is mapped as containing Brickmill gravelly, and Nanum ashy loam. Nanum soils are “somewhat poorly drained” and Brickmill soils are moderately well drained. All of these soils are formed in alluvium with some volcanic ash in the upper part. None of these soils are considered “hydric” or wetland soils according to the publication Hydric Soils of the United States (USDA NTCHS Pub No.1491, 1991).



Above: NRCS soil map of the site.

WADNR FPARS website

According to the WADNR FPARS website with stream types layers activated depicts Wilson Creek on the eastern edge of the site as a Type S (Shoreline) water.



Above: WDNR Fpars Stream Mapping of the area of the site.

Field observations

The site consists of a agricultural pasture used to grow timothy hay and alfalfa. The site is bordered by an alfalfa field to the west and north, actively grazed pasture to the south, and Wilson Creek on the eastern edge of the site.

The site is routinely flood irrigated. However, flood irrigation was not being conducted on the site during our site inspection.

The site at the time of our field inspection was planted in timothy hay. The eastern side of the site contains a narrow forested area along Wilson Creek. This area contains black cottonwood, crack willow, Hawthorne, rose, snowberry and Oregon grape.



Above: Gps mapping of the west ordinary high water mark of Wilson Creek, a Type S water. The 100' buffer is also depicted in yellow.

Soil pits excavated throughout the site revealed a moist, silt loam with a color of 10YR 2/2. No evidence of wetland hydrology was present on the site.

No wetlands were found on or near the site. Wilson Creek is a mapped Shoreline of the State (Type S water). The western OHWM of the creek was gps located with points 887-912. No flags were placed as the stream edge is actively grazed by cattle which would remove the flagging.

According to the Kittitas County Shoreline Master Program, Wilson Creek has a shoreline designation of Rural Conservancy. Shoreline waters with the Rural Conservancy designation have a 100' buffer measured from the ordinary high water mark of the creek.

Table 5.5-1. Standard Shoreline Buffers (Type S Waters)

Shoreline Environment Designation	Type S Standard Shoreline Buffer Width (feet)
Urban Conservancy	100
Shoreline Residential	100
Rural Conservancy	100
Natural	150

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at esewall@sewallwc.com .

Sincerely,
Sewall Wetland Consulting, Inc.



Ed Sewall
Senior Wetlands Ecologist PWS #212

Attached: Data sheets

REFERENCES

Cowardin, L., V. Carter, F. Golet, and E. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, FWS/OBS-79-31, Washington, D. C.

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

Kittitas County Municipal Code

Muller-Dombois, D. and H. Ellenberg. 1974. Aims and Methods of Vegetation Ecology. John Wiley & Sons, Inc. New York, New York.

Munsell Color. 1988. Munsell Soil Color Charts. Kollmorgen Instruments Corp., Baltimore, Maryland.

National Technical Committee for Hydric Soils. 1991. Hydric Soils of the United States. USDA Misc. Publ. No. 1491.

Reed, P., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). 1988. U. S. Fish and Wildlife Service, Inland Freshwater Ecology Section, St. Petersburg, Florida.

Reed, P.B. Jr. 1993. 1993 Supplement to the list of plant species that occur in wetlands: Northwest (Region 9). USFWS supplement to Biol. Rpt. 88(26.9) May 1988.

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1

WETLAND DETERMINATION DATA FORM - Arid West Region

SW side of site

Project/Site: Haybrook City/County: Kittitas Sampling Date: 5-19-22
 Applicant/Owner: _____ State: WA Sampling Point: DP#1
 Investigator(s): Ed Sewell Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <u>- above normal rainfall</u> <u>- agricultural field</u>	

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
= Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>Phleum pratense</u>	<u>100</u>		<u>FAC</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
2. _____				<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. _____				<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

Remarks: _____

SOIL

Sampling Point: DP 1

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
16	10YR 2/2						silt loam	

¹Type: 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)
 - Stratified Layers (A5) (LRR C)
 - 1 cm Muck (A9) (LRR D)
 - Depleted Below Dark Surface (A11)
 - Thick Dark Surface (A12)
 - Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
 - Loamy Mucky Mineral (F1)
 - Loamy Gleyed Matrix (F2)
 - Depleted Matrix (F3)
 - Redox Dark Surface (F5)
 - Depleted Dark Surface (F7)
 - Redox Depressions (F8)
 - Vernal Pools (F9)

- Indicators for Problematic Hydric Soils³:**
- 1 cm Muck (A9) (LRR C)
 - 2 cm Muck (A10) (LRR B)
 - Reduced Vertic (F18)
 - Red Parent Material (TF2)
 - Other (Explain in Remarks)
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

- Wetland Hydrology Indicators:**
- | | |
|--|--|
| Primary Indicators (minimum of one required; check all that apply) | Secondary Indicators (2 or more required) |
| <input type="checkbox"/> Surface Water (A1)
<input type="checkbox"/> High Water Table (A2)
<input type="checkbox"/> Saturation (A3)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)
<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)
<input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Other (Explain in Remarks) |
| | <input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

west side of site

Project/Site: Haybrook City/County: Kittitas Sampling Date: 5-17-22
 Applicant/Owner: _____ State: WA Sampling Point: DP#2
 Investigator(s): SI Summ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <u>above normal rainfall</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
= Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>Phlox pilosa</u>	<u>100</u>		<u>FAC</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
2. _____	_____	_____	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
= Total Cover				
Woody Vine Stratum (Plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Remarks:				

SOIL

Sampling Point: DPD2

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

Depth (Inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
16	10 YR 3/2						silt loam	

¹Type: 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.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (Inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

center of site

Project/Site: Haybrook City/County: Kittitas Sampling Date: 5-19-22
 Applicant/Owner: _____ State: WA Sampling Point: D#3
 Investigator(s): Ed Sevall Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <u>above road mainly</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Phlox pilularis</u>	<u>60</u>	<u>FAC</u>	<u>NI</u>	
2. <u>Bromus tectorum</u>	<u>20</u>	<u>NI</u>	<u>NI</u>	
3. <u>Sisymbrium irio</u>	<u>10</u>	<u>NI</u>	<u>NI</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
= Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____	% Cover of Biotic Crust _____			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species 60 x 3 = 180
 FACU species _____ x 4 = _____
 UPL species 20 x 5 = 100
 Column Totals: 80 (A) 280 (B)
 Prevalence Index = B/A = 2.25

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 _____ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

Remarks: _____

SOIL

Sampling Point: DP#3

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
14	16M 2/2						S. 7 th loc	

¹Type: 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.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F5) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Just west of Wilson Creek

Project/Site: Hagbrook City/County: Kittitas Sampling Date: 5-14-22

Applicant/Owner: _____ State: WA Sampling Point: DP #4

Investigator(s): Ed Smith Section, Township, Range: _____

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

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <u>above normal range</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. <u>Populus balsamifera</u>	<u>40</u>		<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)																
2. _____																				
3. _____																				
4. _____																				
= Total Cover				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>360</u> (B)</td> </tr> <tr> <td align="center" colspan="2">Prevalence Index = B/A = <u>3.6</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species _____	x 5 = _____	Column Totals: <u>100</u> (A)	<u>360</u> (B)	Prevalence Index = B/A = <u>3.6</u>	
Total % Cover of:	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species <u>40</u>	x 3 = <u>120</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species _____	x 5 = _____																			
Column Totals: <u>100</u> (A)	<u>360</u> (B)																			
Prevalence Index = B/A = <u>3.6</u>																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. <u>Symphoricarpos albus</u>	<u>60</u>		<u>FACU</u>																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
= Total Cover																				
Herb Stratum (Plot size: _____)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
= Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____																				
2. _____																				
= Total Cover																				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____																		
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>																				
Remarks: _____																				

SOIL

Sampling Point: D#4

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
14	10M3L3						SW 1m	

¹Type: 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)
 - Stratified Layers (A5) (LRR C)
 - 1 cm Muck (A9) (LRR D)
 - Depleted Below Dark Surface (A11)
 - Thick Dark Surface (A12)
 - Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
 - Loamy Mucky Mineral (F1)
 - Loamy Gleyed Matrix (F2)
 - Depleted Matrix (F3)
 - Redox Dark Surface (F5)
 - Depleted Dark Surface (F7)
 - Redox Depressions (F8)
 - Vernal Pools (F9)

- Indicators for Problematic Hydric Soils³:**
- 1 cm Muck (A9) (LRR C)
 - 2 cm Muck (A10) (LRR B)
 - Reduced Vertic (F18)
 - Red Parent Material (TF2)
 - Other (Explain in Remarks)
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (Inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			Secondary Indicators (2 or more required)
<u>Primary Indicators (minimum of one required; check all that apply)</u>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)		<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)		<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)		<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)		<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)		<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)		<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

*west of
willow creek*

Project/Site: Hog Creek City/County: Kittitas Sampling Date: DP#5
 Applicant/Owner: _____ State: WA Sampling Point: _____
 Investigator(s): SA Sand Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: <u>above normal on all</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Crataegus sp</u>	<u>40</u>	<u>FACW</u>	<u>FACW</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Rosa pratincola</u>	<u>60</u>	<u>FACW</u>	<u>FACW</u>	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
= Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Dibaea picta</u>	<u>30</u>	<u>FAC</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Dominance Test is >50%
2. _____	_____	_____	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
= Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks: _____				

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

SOIL

Sampling Point: DP #5

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
14	10YR 3/2						silt loam	

¹Type: 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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No

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

Remarks: