Sewall Wetland Consulting, Inc.
PO Box 880
Fall City, WA 98024
Phone: 253-859-0515

RECEIVED
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Kittitas County CDS

March 11, 2023

Pat Deneen
Teanaway Ridge LLC
1890 Nelson Siding Road
Cle Elum, Washington 98922

RE: Critical Area Report – Tax Parcel #346534 & 19132
Unincorporated Kittitas County, Washington
SWC Job #19-157

1.0 INTRODUCTION

This report describes our observations of jurisdictional wetlands, streams and buffers on Tax Parcel #346534 & 19132, located east of the City of Cle Elum and south of SR 10 near its junction with SR97 in unincorporated Kittitas County, Washington (the "site").

Above: Vicinity Map of the site.

Specifically, the site is an 86.58 acre, irregular shaped property located in a portion of Section 4, Township 19 North, Range 16 East of the W.M. in Kittitas County Washington. The site is bordered by the Burlington Northern railroad tracks on the north (located just south of SR 10), a single family parcel, which is part of a four lot short plat to the west containing a man-made pond. The remaining site boundaries are defined by the Yakima River along the east, south, and portions of the western side of the site as well as undeveloped forest land.

Above: Aerial photograph of the site.

The site consists of an area on the north containing several outbuildings as well as a single-family home and the foundations of old cabins which have been removed since our 2009 study. This area is characterized by landscaped areas around the home as well as a large grass field with the structures located around the perimeter of the field. This area also contains the previously approved community sites septic systems as well as a community well.

South of this area and separated by a wetland and associated Type F stream, is an old campground area with cleared areas, utility hookups, gravel and dirt roads and camping sites, as well as open campfire areas, a paved basketball court and other recreational areas. This area is accessed by a gravel road with a bridge over the stream and wetland from the east. A gravel road leads through the campground to the east along a northern

reach of the Yakima River accessing an old camping and beach area located along the southeast portion of the site. The site extends to the south of the southern channel of the Yakima River. However, no site work was conducted for this study south of the northern ordinary high water mark of the northern channel of the Yakima River.

It should be noted two main channels of the Yakima River pass through the site around a large forested island of land. These channels have been depicted on the attached map as the Northern Channel and the Southern Channel of the Yakima River.

2.0 METHODOLOGY

2.1 Wetland Delineation Methods

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site in October of 2007, November of 2008 and January of 2009. The sites wetlands and stream ordinary high water marks were reflagged in October of 2019. The site was then inspected in June of 2022 and all of the delineations remain the same as the 2019 delineation. 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 the 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.

2.2 Wetland Rating Methods

The wetlands on the site were 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,.

2.3 Ordinary High Water Mark Delineation Methods

The ordinary high water mark (OHWM) of any streams was located based upon the criteria described in the Washington Department of Ecology publication *Determining The Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (WADOE Publication 16-06-029, March 2010 revised October 2016).

2.4 Wetland and Stream Location Methods

Following delineations of wetlands on the site, the flags were surveyed by Encompass Engineering and transferred to the site survey (see attached).

3.0 OBSERVATIONS

3.1 Existing Site Documentation.

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the National Wetland Inventory Map, the Washington State Department of Natural Resources (WADNR) FPARS stream mapping website, the Kittitas County Mapsifter website with Wetland layers, and the NRCS soil mapping website.

3.1.1 Soil Survey

According to data on file with the NRCS Soil Mapper website, the site contains two (2) soil types. The two soil types encountered include Xerofluvents 0%-5% slopes (map unit #205) and Patnish-Mippon-Myzel complex, 0%-3% slopes (map unit #208).

Above: NRCS Soil Map of the area of the site.

Xerofluvents

Xerofluvents comprise approximately 81% of the site and include all those areas south of the wetland/slough that passes through the site. These soils are found on floodplain and stream terraces with the parent material being alluvium. This soil type is considered somewhat excessively drained with a seasonal high water table of -36". However, in this area this soil type floods frequently due to its proximity to the Yakima River as well as low lying topography. Xerofluvents are not considered hydric or wetland soils.

Patnish-Mippon-Myzel complex

This soil type is a moderately well drained ashy loam formed in alluvium, often times in floodplain areas. The water table is typically found at a depth of 36"-60" below the surface, with occasional flooding. This soil complex, as well as the individual soil series comprising this complex, are not considered hydric or wetland soils.

3.1.2 National Wetlands Inventory (NWI)

According to the NWI map for the site, there is forested wetland located on the south side of the northern channel of the Yakima River on the site. Several ditch-like forested wetland areas are depicted going through the site in the general area of the site's wetlands. The excavated pond to the north of the site is depicted as an unconsolidated bottom excavated water body (PUBHx). No wetlands or streams are depicted within the northern study area of the site on this map. The NWI map does not accurately depict the wetlands we identified in this study.

Above: National Wetlands Inventory Map of the site.

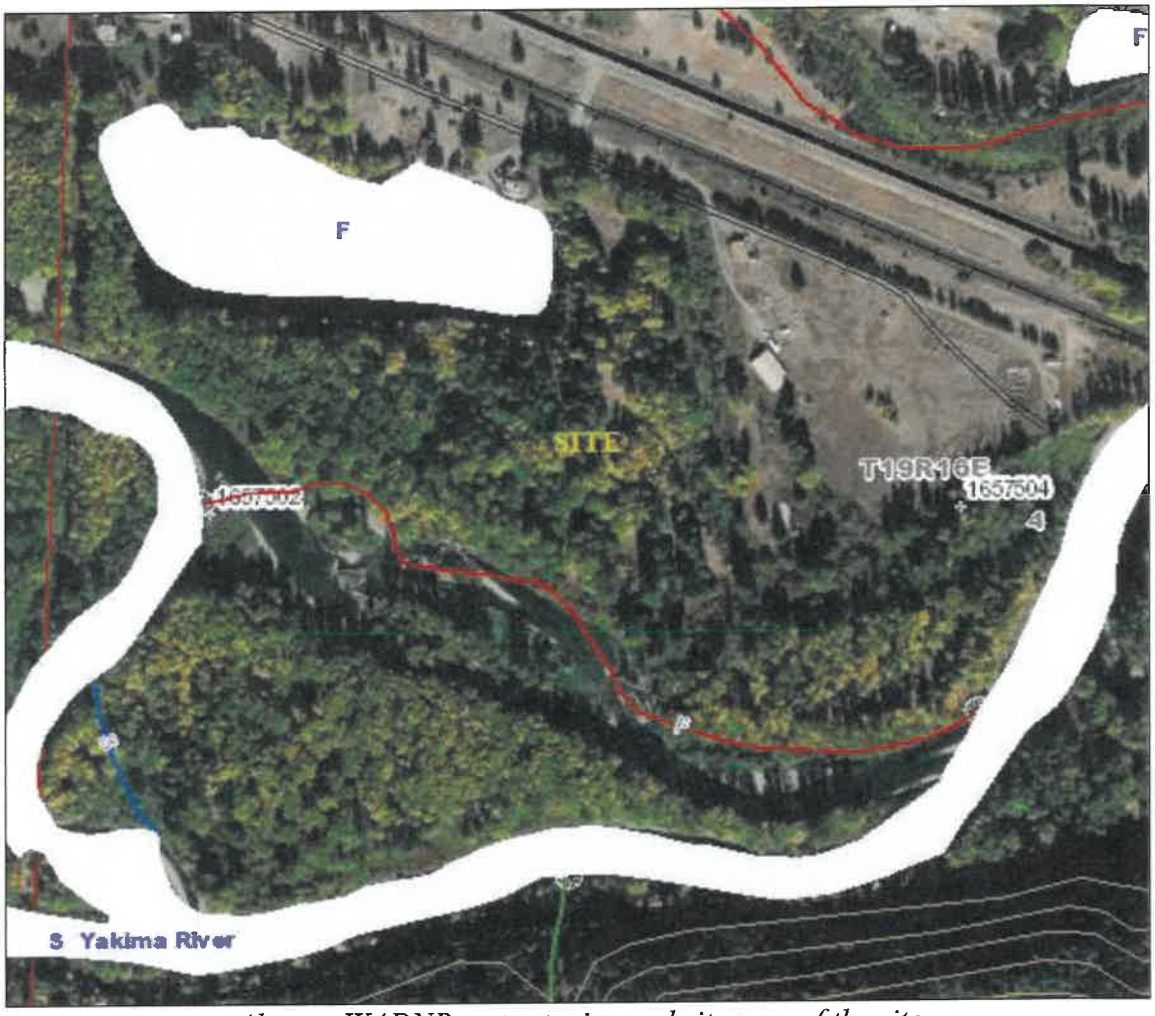
3.1.3 Kittitas County Mapsifter – Wetland Layer

The Kittitas County Mapsifter website depicts wetlands along the south side of the northern reach of the Yakima River on the site in the same configuration as the NWI map.

Above: Kittitas County wetland mapping of the site.

3.1.4 WADNR FPARS website

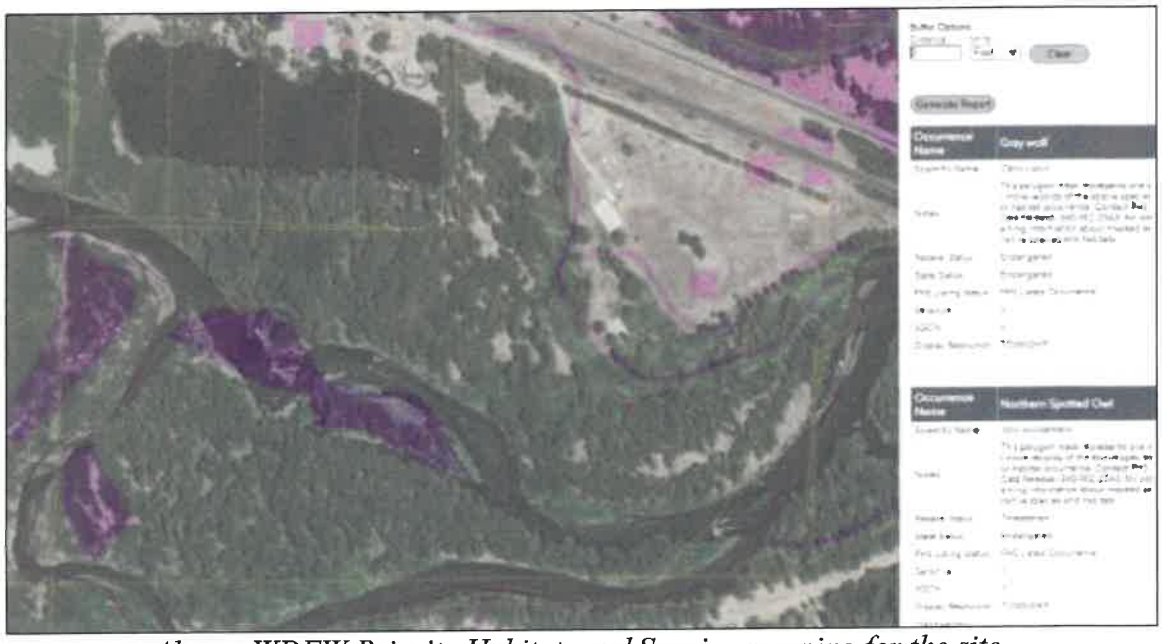
According to the WADNR FPARS website with stream types layers activated, the Yakima River is a Type S water and the northern channel of the Yakima is depicted as a Type F stream. The small stream that passes from west to east along the north side of the site within Wetlands A & AA is not depicted in this mapping.



Above: WADNR water typing website map of the site.

3.1.5 WDFW Priority Habitats and Species Maps

The WDFW Priority Habitats and Species mapping for the site depicts the same wetland shown on the NWI map along the Yakima River, as well as listing numerous fish species utilizing the Yakima River to include west slope cutthroat trout, coho salmon, dolly varden trout, spring and summer chinook salmon, bull trout, summer steelhead, and rainbow trout. In addition, the site is located within a Township noted to contain northern spotted owl and the gray wolf.



Above: WDFW Priority Habitats and Species mapping for the site.

3.1.6 Yakima River PUD Critical Areas Report, February 26, 2009 & December 2019.

In February of 2009, Sewall Wetland Consulting issued a Critical Areas Report for the Yakima PUD project. This was reviewed by WDFW and WADOE and went to hearing at the county level. At that time the wetlands on-site were classified as a Category II wetlands. The Yakima River was acknowledged as a Shoreline of the state and the stream passing through Wetlands A & AA was considered a Type 2 below the road crossing, and Type 3 above the crossing. The December 2019 report was an update of this previous report with no changes.

3.2 Field observations

3.2.1 Upland Areas outside of Wetlands and Streams

As previously described, the north end of the site consists of several outbuildings along with a single-family residence and the infrastructure that supports them. An old basketball court is also located on the site. The area on the east is generally characterized by a mowed grass pasture. The pasture is vegetated with a mix of fescue (*Festuca* spp.) and quackgrass (*Agropyron repens*) as well as scattered weeds such as knapweed (*Centaurea* spp.) and cheatgrass (*Bromus tectorum*). A single apple tree is found on the south side of the pasture area along the wetland/slough. There are also large black cottonwoods (*Populus balsamifera*) as well as red alders (*Alnus rubra*) and

ponderosa pines (*Pinus ponderosa*) located along the sloping banks of the wetland/slough. This area retains a shrub strata comprised primarily of snowberry (*Symphocarpos albus*), hawthorn (*Crateagus* spp.), Oregon grape (*Berberis nervosa*), and clustered rose (*Rosa pisocarpa*).

The foundations of the old cabins along the eastern side of the site fall within wetland or stream buffers are of low functional value due to past development and conversion to roads, lawn and pasture.

The forested western side of the site contains an abandoned campground area that is generally vegetated with an open canopy forest of cottonwood, alder and ponderosa pine with little if any shrub strata. Some areas on the north are mowed lawn/grass areas. Vegetation in the understory consists of scattered snowberry, rose and hawthorn with a grass cover of mixed weeds, fescue and quackgrass. The campground area contains small gravel/dirt roads and bare areas where campsites are located.

Soil pits excavated within the upland areas of the site generally revealed a gravelly silt loam with a color of 10YR 3/3 with no hydric characteristics. Soils within upland areas were dry during all site visits.

3.2.2 Wetlands & Streams

The site contains two wetland divided by a road crossing and control structure. A small stream flows through these wetlands entering the northwest corner of the site from the excavated pond located off-site to the northwest. Flow within this feature flows from northwest-southeast before draining into a larger area of wetland located within a historic channel meander of the Yakima River along the south side of the site as depicted on the attached Existing Conditions Map.

Wetland A

Wetland A consists of the large wetland and stream complex south of a bridge with a control structure. The entire wetland feature to the south of the bridge was flagged with flags A1-A83. The wetland feature to the north of the bridge (Wetland AA) was flagged with flags AA1-AA41 and will be referred to as Wetland AA. This wetland is separated by a barrier at the road crossing that allows only one directional flow out of Wetland AA top the south into Wetland A, and therefore is considered a separate wetland. Flags A83-A112 are the OHWM of the Yakima River west of the sites wetlands.

This wetland includes forested, scrub-shrub, and emergent wetland classes in and around a fish bearing tributary of the Yakima River.

The wetland is vegetated primarily with a forested plant community on the east dominated by large black cottonwoods surrounding the stream. This area has a shrub layer dominated by red-osier dogwood (*Cornus stolonifera*), sitka alder (*Alnus sitchensis*), pacific willow (*Salix lasiandra*), as well as a dense community of reed canary grass (*Phalaris arundinacea*) with scattered clumps of an unidentified sedge (*Carex* spp.).

Soil pits excavated within the outer edge of this wetland revealed a silt loam with varying colors. Some pits were found to have a 16" layer of silt loam with a soil color of 10YR 3/2 with common, medium, distinct redoximorphic concentrations. Other areas of the wetland had soils with a soil color of 2.5Y 2.5/1 with common, medium, distinct redoximorphic concentrations. Soils within this wetland varied from saturation at -12" to surface inundation.

Using the US Fish and Wildlife Wetland Classification Method (Cowardin et al. 1979), Wetland A/B contains areas that would be classified as PEM1E (palustrine, emergent, persistent, saturated), PSS1C (palustrine, scrub-shrub, broad leaved deciduous, seasonally flooded), and PFO1C (palustrine, forested, broad leaved deciduous, seasonally flooded).

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, and rating this wetland as a "Riverine" wetland, this wetland scored a total of 21 points with 8 for habitat. This indicates a Category II wetland.

Wetland A is located within the Rural Conservancy area of the Shoreline. Kittitas County Municipal Code Chapter 17B.05.020G, Category II wetlands with a moderate land use such as a single family home or shop would have a 150' buffer.

17B.50.020G-1. Wetland Buffers for Wetlands in Shoreline Jurisdiction

Wetland Category	Low Intensity Use and Development	Low and Moderate Intensity Use and Development*	High Intensity Use and Development*
Category I	125 feet	190 feet	250 feet
Category II	100 feet	150 feet	200 feet
Category III	75 feet	110 feet	150 feet
Category IV	25 feet	40 feet**	50 feet

The buffer of Wetland A has an existing gravel road running along its eastern side for portions of the buffer on the north. According to KCC 17B.05.020G.4 (Interrupted Buffer), when a buffer is bisected by a legally established private road, development on the landward side of the road may be allowed if it will not have any detrimental effects to the wetland.

Interrupted buffer: When a wetland buffer contains an existing legally established public or private road, the Administrator may allow development on the landward side of the road provided that the development will not have a detrimental impact to the wetland. The applicant may be required to provide a wetland critical areas report to describe the potential impacts. In determining whether a critical areas report is necessary, the County shall consider the hydrologic, geologic, and/or biological habitat connection potential and the extent and permanence of the buffer interruption.

The site appears to meet this criteria and development to the east and north of the gravel road may be allowed even though its within the 150' buffer.

Wetland AA

The wetland feature to the north of the bridge (Wetland AA) was flagged with flags AA1-AA41. This feature is separated by a road crossing with a control structure that only allows flow out of the wetland to the south. Therefore, this would not be considered part of the larger Wetland A on the south side of the crossing.

The wetland is vegetated with large areas of reed canary grass, as well as scrub shrub sections with red-osier dogwood, sitka alder and willow.

Soil pits excavated within the outer edge of this wetland revealed a silt loam with a soil color of 10YR 3/1 with common, medium, distinct redoximorphic concentrations. Portions of the wetland contained a sapric muck soils were extended ponding occurs. Soils within this wetland varied from saturation at the surface to 24" of standing water.

Using the US Fish and Wildlife Wetland Classification Method (Cowardin et al. 1979), Wetland A/A contains areas that would be classified as PEM1E (palustrine, emergent, persistent, saturated), and PSS1C (palustrine, scrub-shrub, broad leaved deciduous, seasonally flooded).

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, and rating this wetland as a "Depressional" wetland, this wetland scored a total of 19 points with 7 for habitat. This indicates a Category II wetland.

Wetland AA appears to be located in a portion of the Rural Conservancy area of the Shoreline. Kittitas County Municipal Code Chapter 17B.05.020G, Category II wetlands with a moderate land use such as a single family home or shop would have a 150' buffer.

17B.50.020G-1. Wetland Buffers for Wetlands in Shoreline Jurisdiction

Wetland Category	Low Intensity Use and Development	Low and Moderate Intensity Use and Development*	High Intensity Use and Development*
Category I	125 feet	190 feet	250 feet
Category II	100 feet	150 feet	200 feet
Category III	75 feet	110 feet	150 feet
Category IV	25 feet	40 feet	50 feet

The buffer of Wetland AA has an existing gravel road running along its eastern side for portions of the buffer on the north. According to KCC 17B.05.020G.4 (Interrupted Buffer), when a buffer is bisected by a legally established private road, development on the landward side of the road may be allowed if it will not have any detrimental effects to the wetland.

Interrupted buffer: When a wetland buffer contains an existing legally established public or private road, the Administrator may allow development on the landward side of the road provided that the development will not have a detrimental impact to the wetland. The applicant may be required to provide a wetland critical areas report to describe the potential impacts. In determining whether a critical areas report is necessary, the County shall consider the hydrologic, geologic, and/or biological habitat connection potential and the extent and permanence of the buffer interruption.

The site appears to meet this criteria and development to the east and north of the gravel road may be allowed even though it's within the 150' buffer.

Yakima River & Un-named Yakima River Tributary

Yakima River – Type S water

The Yakima River passes through the south side of the site. The Yakima River is considered a Shoreline of the state or a Type S water.

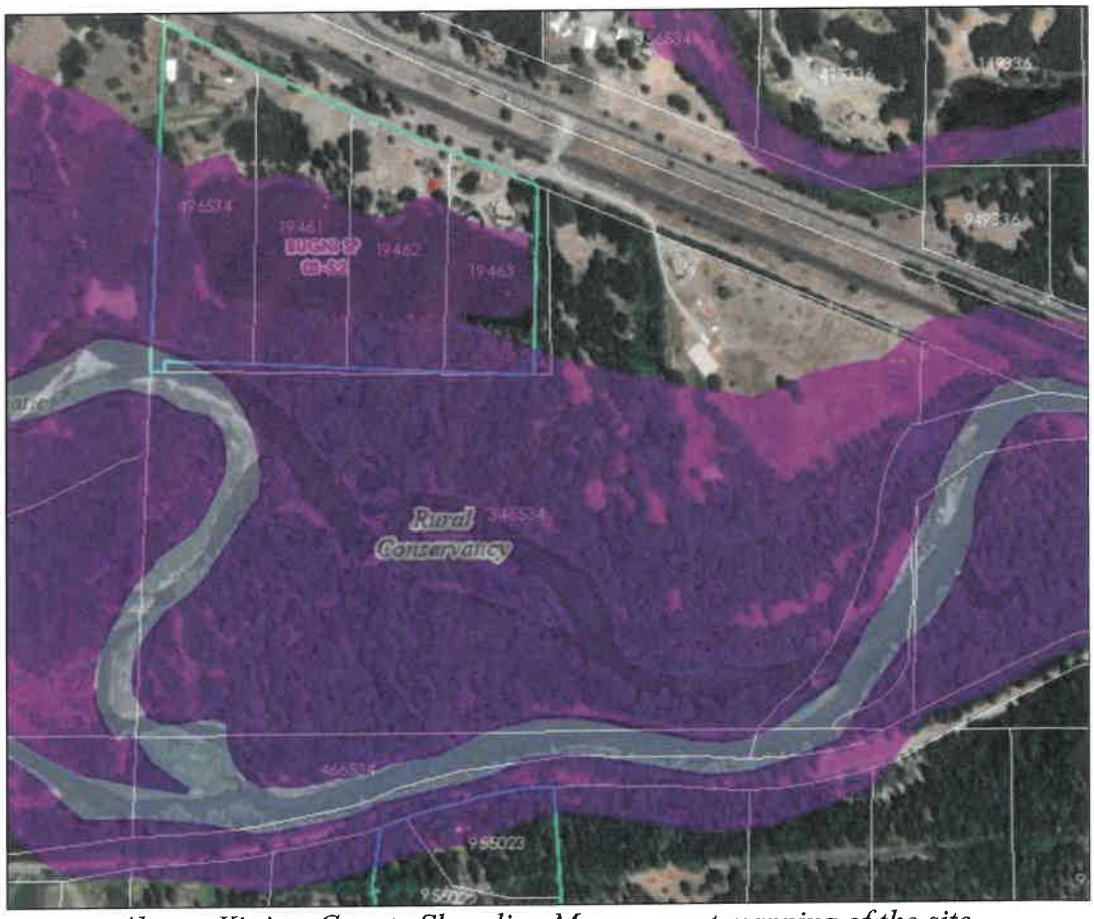
According to the Kittitas County Shoreline Master Program, the Yakima River has a shoreline designation of *Rural Conservancy* in the area of the site. Shoreline waters (Type S) with the Rural Conservancy designation have a 100' buffer measured from the ordinary high water mark of the creek.

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

Near the center of the site the river widens, flow speed decreases and the river turns, with the north side being the inside of the bend. This is an area where flow velocities are low and which is a depositional area for sediments. In this approximate 700' long area, the area above the OHWM slopes gradually to the bank full width in a 25'-50' band. Between bank full width and the distinct upland area of douglas firs and pines, is a transitional sediment bar vegetated with a mix of willows, dogwoods and cottonwoods. The OHWM was found to be at the sloping transition from this gravel bar riparian area to a dry, upland plant community with no evidence of any flooding from the recent event. The vegetation community in this area above the OHWM is distinctly different than that below, and there is no evidence of any flow above this area, even in the recent flood event.

The remaining stretch of the Yakima has a vertical incised bank where the OHWM is clearly below the bank full width and the top of bank. At its easternmost point on the site, the mouth of the un-named Type F tributary enters the Yakima in a band of reed canary grass dominated wetland with a distinct easterly flowing channel. A description of this feature follows;



Above: Kittitas County Shoreline Management mapping of the site.

Un-named Type F tributary water

As previously described, a fish bearing stream is located within the confines of Wetlands A and AA. This feature originates near the northwest corner of the site and appears to be fed by groundwater. Water within this area "ponds" within the center of the wetland north of the road crossing and just west of the existing single-family residence. A control structure is located at the road crossing dividing Wetland A from Wetland AA. Water drops approximately 3'-4' in elevation flowing south into a distinct channel with a narrow riparian wetland. This water flows to the south, and then easterly along the toe of short, steep slope. The channel stays closely to the toe of the slope and then moves more centrally into a wetland area with a meandering, narrow channel surrounded by reed canary grass. This flows approximately 500' to the Yakima River. A review of this area indicates only the mouth of this stream had back flooding from the Yakima during the flood events. The caretaker of the property is a surveyor who observed the January 2009 flooding and he indicated no flooding from the river was backed up into this channel. The location of flood debris and water marks corroborate this observation.

This channel is a distinctly flowing feature from the Yakima, and, has a distinct OHWM from that of the Yakima River and not part of the Shoreline designation given to the Yakima River.

The stream appears to originate from groundwater discharge near the northwest corner of the site. Groundwater within the entire valley is most likely in some way tied to the Yakima River. However, given the distance from the Yakima, it is not clear that this is a groundwater discharge from the Yakima. Groundwater input to this stream is at a point nearly 1,100' north of the closest point of the Yakima River. It is possible this is receiving groundwater from the Younger ditch drainage north of SR 10 in close proximity to this area.

According to KCC 17B.05.020K.1, Type F waters within the Shorleine have a 100' buffer measured from the OHWM.

17B.05.020K-1. Aquatic Habitat Conservation Area Buffers for Type F, Np, and Ns Waters

Aquatic Habitat Conservation Area	Standard Buffer Width
Type F Waters	100 feet
Type Np Waters	50 feet
Type Ns Waters	30 feet

The buffer of the Type F water has an existing gravel road running along its eastern side for portions of the buffer on the north. According to KCC 17B.05.020K.4 (Interrupted Buffer), when a buffer is bisected by a legally established private road, development on the landward side of the road may be allowed if it will not have any detrimental effects to the habitat area.

Interrupted buffers: When an aquatic habitat conservation area buffer contains an existing legally established public or private road the Administrator may allow a use and/or development on the landward side of the road provided that the use and/or development will not have a detrimental impact to the habitat area. The applicant may be required to provide a critical areas report to describe the impacts. In determining whether a critical areas report is necessary, the County shall consider the hydrologic, geologic, and/or biological habitat connection potential and the extent and permanence of the buffer interruption.

The site appears to meet this criteria and development to the east and north of the gravel road may be allowed even though its within the 100' buffer.

4.0 Wildlife and Threatened and Endangered Species

4.1 WDFW Priority Habitat Data

As shown in Section 3.1.5 of this report, the WDFW Priority Habitat Maps and associated species specific reports for the area of the site revealed that the area of the site is identified as "Upper Yakima Riparian Area", identified specifically as the area upstream of the mouth of Swauk Creek on the Yakima. The area is identified as including floodplain and wetland complexes along the upper Yakima supporting beaver and other furbearers; wintering bald eagles (10-15), especially in spring and big game use. Additionally, the Yakima River is noted as containing priority fish presence. These species include Spring Chinook, coho salmon, dolly varden/bull trout, rainbow trout, summer steelhead and west slope cutthroat trout.

4.2 Washington Department of Natural Resources Natural Heritage Program

A search was conducted of the WADNR Natural Heritage Information System for any significant features on the site. The WADNR Natural Heritage program records any known observations or known locations of rare plants and high quality ecosystems. The results of the data search of this information revealed no known or recorded rare plants or high quality ecosystems on the site.

4.3 Field Observations

The undeveloped portions of the site (excluding the campground and the developed areas north of Wetland A/B) including the wetland and riparian corridor along the Yakima River are high value habitat. Many species of wildlife utilize this area as it offers nearly all of the common requirements of wildlife including cover, food, water and breeding habitat opportunities. Habitat features of high value found on the site include large logs, several cavity filled snags, areas of open and flowing water, snags, large trees within the forested wetland, cavities within the trees, branched tree crowns for nest building, and rock and brush piles are just some of the features found on the site.

In general, the habitat in the northern developed portion of the site is minimal due to the lack of vegetative cover, close proximity to SR 10 and the active railroad tracks, and mowed character of this area. The campground area to the south and west of the wetland are also of reduced value also due to the lack of as shrub strata and development related to the existing roads and campsites.

Species we noted utilizing the site (*from visual observation, tracks, scat or other signs*) south of the developed areas and areas immediately adjacent to the site during our site visits include red-tailed hawk, osprey, ring-necked pheasant, ruffed grouse, common

crow, raven, blue heron, mallards, buffleheads, dipper, black capped chickadee, winter wren, turkey, black bear, mule deer, elk, coyote, Douglas squirrel, beaver, raccoon, cutthroat trout, rainbow trout, California quail, kestrel, magpie, European starling, and skunk.

Several bald eagles were observed south of the Yakima within the "island" area in the middle of January 2009. A reconnaissance was conducted to identify any eagle nests on or near the site but none were observed. All eagles were observed to be perching in large trees along the south side of the river. Eagles are commonly seen along this section of the Yakima and to the east towards Ellensburg.

Areas Outside buffers and floodway

As depicted on the attached site plan, there are two large areas on the north side of the site outside the wetlands, streams and buffers as well as he floodway. The usable area outside the wetlands streams and standard buffers 15.3 acres outside the standard buffers and floodway.

As allowed in KCC 17B.05.020K.4 (Interrupted Buffer), when a buffer is bisected by a legally established private road, development on the landward side of the road may be allowed if it will not have any detrimental effects to the habitat area. Taking the existing roads that are on the site that bisect the buffers, this increases the amount of useable area outside buffers and the floodway by 3.73 acres. Using this Code section, the total usable area outside of the standard buffer and outside existing legally established roads in the buffer is 19.08 acres.

5.0 REGULATIONS

In addition to the wetland regulations previously described for wetlands, certain activities (filling and dredging) within "waters of the United States" may fall under the jurisdiction of the U.S. Army Corps of Engineers (USACOE). The USACOE regulates all discharges into "waters of the United States" (wetlands) under Section 404(b) of the Clean Water Act. Wetlands that are hydrologically isolated are not regulated by the USACOE, per the SWANCC and as interpreted by the Corps and EPA in their Regulatory Guidance Letter.

Discharges (fills) into any wetlands that are not considered "isolated" are regulated by the Corps. However, only the Corps can make that determination.

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

REFERENCES

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Sewall Wetland Consulting, Inc. "Teanaway Ridge LLC- Yakima River PUD Critical Area report. February 26, 2009

USDA NRCS Soil Mapper Website

Kittitas County Code, Title 17A and 17B Critical Areas & Shorelines

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

Washington Department of Ecology – *Wetland Rating System for Eastern Washington, 2014 Update* dated June 2014 Publication No. 14-06-018,.

Washington Department of Ecology – Determining the ordinary high water mark on streams in Washington State March 2008 Review Draft. Pub #08-06-001.

Above: Photographs of the north end of the slough wetland (AA) on north end of site.
Below: Looking east across Wetland AA towards residence on north end of site.

Above: Looking East across developed north end of site.
Below: Looking south on north end of site. Wetland AA on right.

Above: Road crossing of Wetland A and AA looking west into campground area.
Below: Looking north at road crossing of Wetland AA

Above: Vertical standpipe allowing flow to pass under road crossing dividing Wetland A and Wetland AA

Below: Wetland A looking southeast from road crossing

Above: Southeast side of site, well house visible on left. Basketball court visible in center of photograph.

Below: looking south across Wetland A towards old basketball court.

Above and below: looking north along northeast side of site, Wetland A and Yakima River off to right side of photograph.

Above: Wetland A on east side of site
Below: Existing campground area on west side of site.

Above: Forested upland area on southwest side of site south of campground.
Below: Yakima River Looking east at a point south of the campground area.

Above: Looking south across north reach of Yakima River at forested "island" area of the site. Below is the same location looking upstream to the west.

Above: Wetland A

Below: Old gravel road and camping areas along east side of site east of Wetland A.

Above: East side of site, old roadbed/camping areas is visible in gravel.
Below: Looking west from east side of site towards Wetland A.

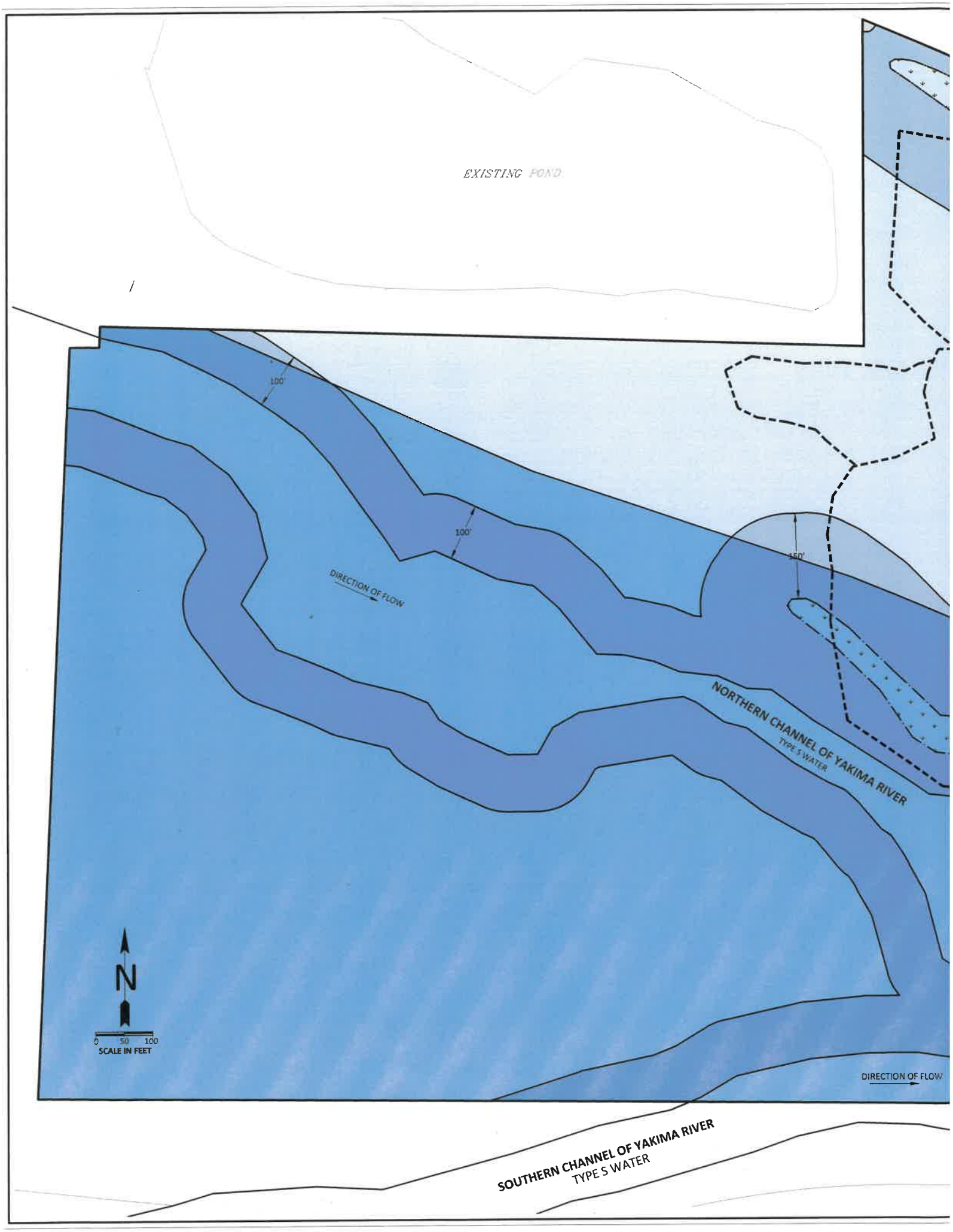
Above and below: Looking north along east edge of site and Yakima River.

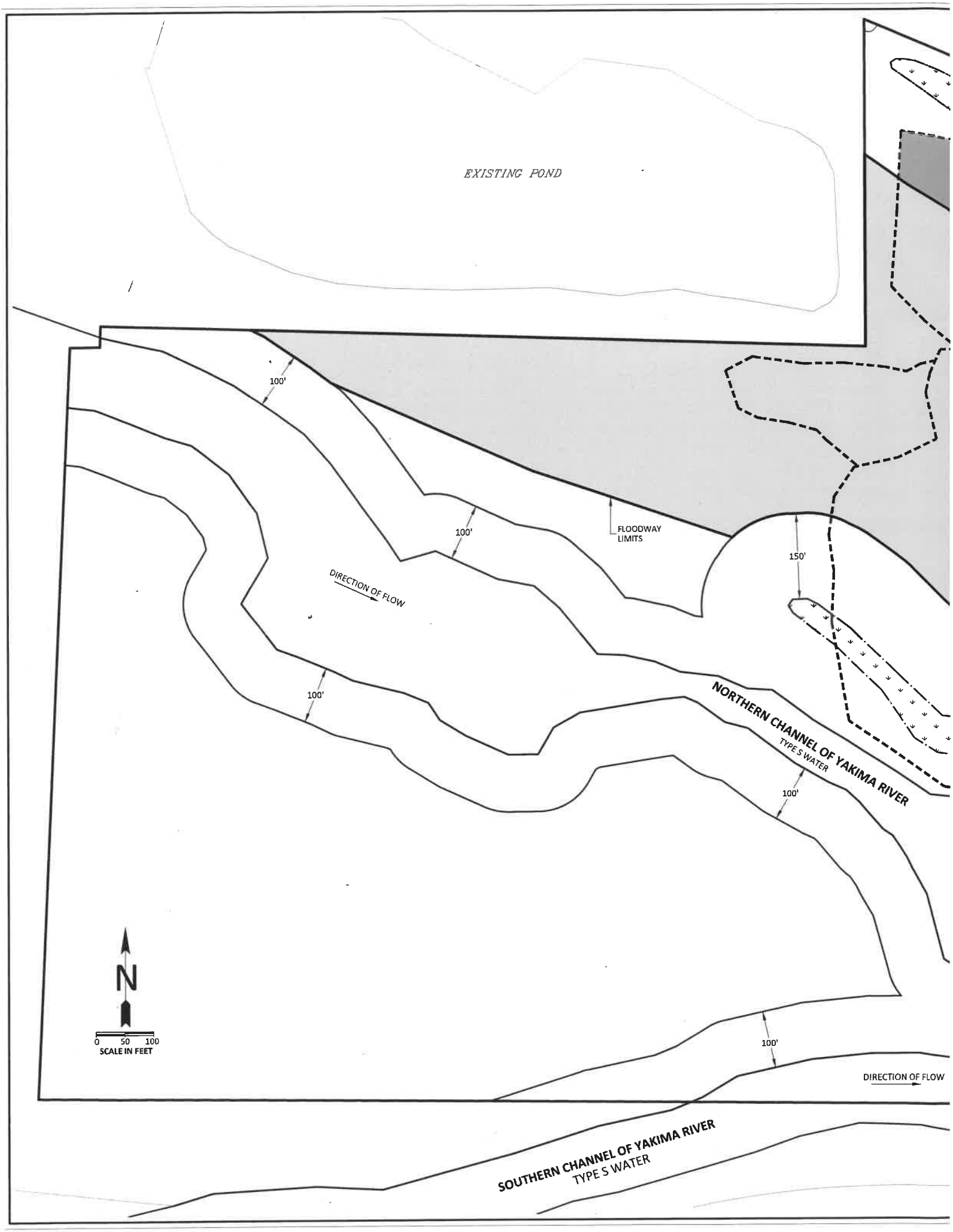
Above: Mouth of Type 3 tributary where it meets the Yakima on 1-21-09 following flooding.

Below: Type 3 water looking westerly through Wetland A/B near north end of site.

Above and below: views of the north channel of the Yakima river looking west (top) and east (bottom) on January 21, 2009 following flood event.

Above and below: Central portion of site along Yakima on 1-21-09. OHWM at snowline on right. A narrow riparian band of dogwood, willow and reed canary grass is below OHWM. Douglas fir is visible in area above OHWM on lower photo.


EXISTING POND
100'
100'
150'
DIRECTION OF FLOW
NORTHERN CHANNEL OF YAKIMA RIVER
TYPE S WATER
N
0 50 100
SCALE IN FEET
DIRECTION OF FLOW
SOUTHERN CHANNEL OF YAKIMA RIVER
TYPE S WATER


EXISTING POND
100'
100'
FLOODWAY LIMITS
150'
DIRECTION OF FLOW
100'
NORTHERN CHANNEL OF YAKIMA RIVER
TYPE S WATER
100'
N
0 50 100
SCALE IN FEET
100'
DIRECTION OF FLOW
SOUTHERN CHANNEL OF YAKIMA RIVER
TYPE S WATER

WETLAND DETERMINATION DATA FORM – Arid West Region

W

Project/Site: Yakima PUD City/County: Kittitas Co Sampling Date: 10-10-19

Applicant/Owner: State: WA Sampling Point: DP9

Investigator(s): Ed Sewall Section, Township, Range: 34 T19N R16E

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

Hydric Soil Present? Yes ✓ No

Wetland Hydrology Present? Yes No

Is the Sampled Area within a Wetland? Yes ✓ No

Remarks:

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. Alnus sinuata	30		FAC
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	80		FACW
2. Carex spp	20		FACW
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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- 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:

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR 2/2		Common distinct				silt 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)
- ___ 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 (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ 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:

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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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? (includes capillary fringe) Yes ✓ No _____ Depth (inches): ~ 9"

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

Project/Site: Yakima PUD City/County: Kittitas Co Sampling Date: 10-10-19

Applicant/Owner: State: WA Sampling Point: DP#2

Investigator(s): Ed Sewall Section, Township, Range: 34 T19N R16E

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	Is the Sampled Area within a Wetland? Yes No ✓
Hydric Soil Present?	Yes ✓ No	
Wetland Hydrology Present?	Yes No	

Remarks:

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. Rosa spp	40		FAC
2. Symphoricarpos albus	40		FACU
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Agropyron spp	80		FAC
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 ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 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:

SOIL

Sampling Point: _____

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2	duff							
14	10YR 3/3.5						gr-My Cn	

[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)
- ___ 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 (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ 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:

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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

wet A

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Yakima PUD City/County: Kittitas Co Sampling Date: 10-10-19

Applicant/Owner: State: WA Sampling Point: DP#3

Investigator(s): Ed Sewall Section, Township, Range: S4 T19N R16E

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

Hydric Soil Present? Yes ✓ No

Wetland Hydrology Present? Yes No

Is the Sampled Area within a Wetland? Yes ✓ No

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Phalaris arundinacea	100	✓	FACW
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 ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ 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:

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR 3/2		C m d				silt 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)
- ___ 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 (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ 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:

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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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? (includes capillary fringe) Yes ✓ No _____ Depth (inches): ~4"

✓ **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

Project/Site: Yakima PUD City/County: Kittitas Co Sampling Date: 10-10-19

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

Investigator(s): Ed Semrau Section, Township, Range: S4 T19N R16E

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

Hydric Soil Present? Yes No ✓

Wetland Hydrology Present? Yes No

Is the Sampled Area within a Wetland? Yes No ✓

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Festuca arundinacea	100	✓	FAC
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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

SOIL

Sampling Point: DP #2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR 3/3						silt 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)
- ___ 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 (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ 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:

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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

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

Project/Site: Yakima PUD City/County: Kittitas Co Sampling Date: 10-10-19

Applicant/Owner: State: WA Sampling Point: DP#5

Investigator(s): Ed Sewall Section, Township, Range: 34 T19N R16E

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

Hydric Soil Present? Yes ✓ No

Wetland Hydrology Present? Yes No

Is the Sampled Area within a Wetland? Yes ✓ No

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. Crataegus sp.	40		FAC+
2. Cornus stolonifera	30		FACW
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	80		FACW
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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

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:

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
16	7.5 2.5/1		Com	med	distinct		silt 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)
- ___ 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 (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ 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:

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) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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? (includes capillary fringe) Yes _✓_ No ___ Depth (inches): 0"

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

Project/Site: Yakima PUD City/County: Kittitas Co Sampling Date: 10-10-19

Applicant/Owner: State: WA Sampling Point: DP#6

Investigator(s): Ed Sewall Section, Township, Range: 5 T19N R16E

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

Hydric Soil Present? Yes No ✓

Wetland Hydrology Present? Yes No ✓

Is the Sampled Area within a Wetland? Yes No ✓

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	100	✓	FACW
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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

SOIL

Sampling Point: Data 4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR 3/2.5						SL	

[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)
- ___ 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 (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ 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:

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) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ 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? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Wetland name or number A

Yakima Pond

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland A Date of site visit: 11/09, 1/09, 10/19

Rated by Ed Sewall Trained by Ecology? Yes ✓ No ___ Date of training 9/18

HGM Class Used for Rating Riverine Unit has multiple HGM classes? ✓ Y ___ N

NOTE: Form is not complete without the figures requested (*figures can be combined*).

Source of base aerial photo/map _____

OVERALL WETLAND CATEGORY II

1. Category of wetland based on FUNCTIONS

✓ **Category I** - Total score = 22 – 27

___ **Category II** - Total score = 19 - 21

___ **Category III** - Total score = 16 - 18

___ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat
	Circle the appropriate ratings		
Site Potential	H (M) L	H (M) L	(H) M L
Landscape Potential	H (M) L	H (M) L	(H) M L
Value	H M (L)	(H) M L	(H) M L
Score Based on Ratings	5	7	9

Score for each function based on three ratings (*order of ratings is not important*)

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY *Circle the appropriate category*	
Vernal Pools	II	III
Alakali		I
Wetland with high conservation value		I
Bog		I
Old Growth or Mature Forest – slow growing		I
Aspen Forest		I
Old Growth or Mature Forest – fast growing		II
Floodplain forest		II
None of the above		✓

Wetland name or number A

Maps and figures required to answer questions correctly (Eastern Washington)

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2, H1.3	
Location of outlet *(can be added to map of hydroperiods)*	D 1.1, D1.4	
Boundary of 150 ft buffer *(can be added to another figure)*	D 2.2, D 5.2	
Polygon of area 1km from wetland edge - Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	D 3.1, D 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	D 3.3	
Area of open water *(can be added to map of hydroperiods)*	H1.3.1	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2, H1.3	
Ponded depressions	R 1.1	
Boundary of 150 ft buffer *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Polygon of area 1km from wetland edge -Including polygons for accessible habitat and undisturbed habitat	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	R 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake-fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of 150 ft buffer *(can be added to another figure)*	L 2.2	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	L 3.1	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
Polygon of area 1km from wetland edge (Including polygons for accessible habitat and undisturbed habitat)	H 2.1, H2.2	
Screen capture of map of 303d listed waters in basin (from Ecology web site)	S 3.1, S 3.2	
Screen capture of list of TMDL's for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number A,

HGM Classification of Wetland Units in Eastern Washington

For questions 1-4 the criteria described must apply to the entire unit being rated for it to be classified correctly.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire wetland unit **meet both** of the following criteria?

___The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 acres (8 ha) in size

___At least 30% of the open water area is deeper than 10 ft (3 m)

NO – go to 2 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

2. Does the entire wetland unit **meet all** of the following criteria?

___The wetland is on a slope (*slope can be very gradual*),

___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

___Does the water leaves the wetland **without being impounded**?

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).

NO - go to 3 YES – The wetland class is **Slope**

3. Does the entire wetland unit **meet all** of the following criteria?

✓ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river

✓ The overbank flooding occurs at least once every ten years.

NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.

NO - go to 4 YES – The wetland class is **Riverine**

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 5 YES – The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM

classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake-fringe	Depressional
Riverine + Lake-fringe	Riverine

If you are unable still to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as ***Depressional*** *for the rating.*

Wetland name or number_____

RIVERINE WETLANDS **Water Quality Functions** - Indicators that site functions to improve water quality		Points (only 1 score per box)
R 1.0 Does the wetland unit have the potential to improve water quality?		
R 1.1 Area of surface depressions within the riverine wetland that can trap sediments during a flooding event		
Depressions cover >1/3 area of wetland	points = 6	
Depressions cover > 1/10 area of wetland	points = 3	
Depressions present but cover < 1/10 area of wetland	points = 1	
No depressions present	points = 0	6
R 1.2 Structure of plants in the unit (areas with >90% cover at person height; not Cowardin classes):		
Forest or shrub > 2/3 the area of the wetland	points = 10	
Forest or shrub 1/3 – 2/3 area of the wetland	points = 5	
Ungrazed, herbaceous plants > 2/3 area of wetland	points = 5	
Ungrazed herbaceous plants 1/3 – 2/3 area of wetland	points = 2	
Forest, shrub, and ungrazed herbaceous < 1/3 area of wetland	points = 0	5
Total for R1	Add the points in the boxes above	11

Rating of Site Potential **If score is:** **12 – 16 = H** **6 - 11 = M** **0 - 5 = L**
Record the rating on the first page

R 2.0 Does the landscape have the potential to support the water quality function at the site?		
R 2.1 Is the unit within an incorporated city or within its UGA?	Yes = 2 No = 0	0
R. 2.2 Does the contributing basin include a UGA or incorporated area?	Yes = 1 No = 0	1
R 2.3 Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years?	Yes = 1 No = 0	0
R 2.4 Is > 10% of the buffer within 150 ft of wetland unit in land uses that generate pollutants	Yes = 1 No = 0	1
R 2.5 Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1 – R 2.4? Source_____	Yes = 1 No = 0	0
Total for R 2	Add the points in the boxes above	2

Rating of Landscape Potential **If score is:** **3 – 6 = H** **1 or 2 = M** **0 = L**
Record the rating on the first page

R 3.0 Is the water quality improvement provided by the site valuable to society?		
R 3.1 Is the unit along a stream or river that is on the 303 d list or on a tributary that drains to one?	Yes = 1 No = 0	0
R 3.2 Does the river on stream have TMDL limits for nutrients, toxics, or pathogens?	Yes = 1 No = 0	0
R 3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (*answer YES if there is a TMDL for the drainage in which unit is found*)	Yes = 2 No = 0	0
Total for R 3	Add the points in the boxes above	0

Rating of Value: **If score is:** **2 – 4 = H** **1 = M** **0 = L**
Record the rating on the first page

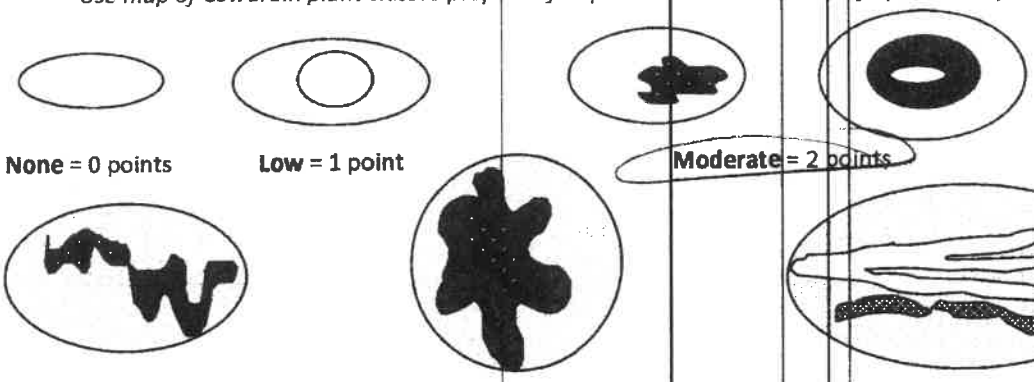
Wetland name or number A

RIVERINE WETLANDS **Hydrologic Functions** - Indicators that site functions to reduce flooding and stream erosion			Points (only 1 score per box)
R 4.0 Does the wetland unit have the potential to reduce flooding and erosion?			
R 4.1 Characteristics of the overbank storage the unit provides: *Estimate the average width of the wetland unit perpendicular to the direction of the flow and the width of the stream or river channel (distance between banks). Calculate the ratio: (average width of unit)/(average width of stream between banks).* If the ratio is more than 2 If the ratio is between 1 – 2 If the ratio is ½ - <1 If the ratio is ¼ - < ½ If the ratio is < ¼		points = 10 points = 8 (points = 4) points = 2 points = 1	4
R 4.2 Characteristics of plants that slow down water velocities during floods: *Treat large woody debris as "forest or shrub". Choose the points appropriate for the best description.* (polygons need to have >90% cover at person height NOT Cowardin classes): Forest or shrub for more than 2/3 the area of the wetland. Forest or shrub for >1/3 area OR herbaceous plants > 2/3 area Forest or shrub for > 1/10 area OR herbaceous plants > 1/3 area Plants do not meet above criteria		points = 6 (points = 4) points = 2 points = 0	4
Total for R 5	Add the points in the boxes above		8
Rating of Site Potential If score is: **12 – 16 = H**	**6 - 11 = M**	**0 - 5 = L**	*Record the rating on the first page*

R 5.0 Does the landscape have the potential to support the hydrologic functions at the site?			
R5.1 Is the stream/river adjacent to the unit downcut?		(Yes = 0) No = 1	0
R 5.2 Does the upgradient watershed include a UGA or incorporated area?		(Yes = 1) No = 0	1
R 5.3 Is The upgradient stream or river controlled by dams?		(Yes = 0) No = 1	0
Total for R 5	Add the points in the boxes above		1
Rating of Landscape Potential If score is: **3 = H**	**(1 or 2 = M)**	**0 = L**	*Record the rating on the first page*

R 6.0 Are the hydrologic functions provided by the site valuable to society?			
R 6.1 Distance to the nearest areas downstream that have flooding problems? *Choose the description that best fits the site.* The sub-basin immediately down-gradient of site has surface flooding problems that results in damage to human or natural resources Surface flooding problems are in a basin further down-gradient No flooding problems anywhere downstream		(points = 2) points = 1 points = 0	2
R 6.2 Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?		(Yes = 2) No = 0	2
Total for R 6	Add the points in the boxes above		4
Rating of Value If score is **(2 – 4 = H)**	**1 = M**	**0 = L**	*Record the rating on the first page*

Wetland name or number A/AA

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Categories of vegetation structure *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ acre or >= 10% of the unit if unit is < 2.5 acres* ____Emergent plants 0-12 in. (0 – 30 cm) high are the highest layer and have > 30% cover ____Emergent plants >12 – 40 in.(>30 – 100cm) high are the highest layer with >30% cover ✓ Emergent plants > 40 in.(> 100cm) high are the highest layer with >30% cover ✓ Scrub/shrub (areas where shrubs have >30% cover) ✓ Forested (areas where trees have >30% cover) 4-6 checks points = 3 3 checks points = 2 2 checks points = 1 1 check points = 0	2
H 1.2. Is one of the vegetation types "aquatic bed?" YES = 1 point NO = 0 points	0
H 1.3. Surface Water H 1.3.1 Does the unit have areas of "open" water (without herbaceous or shrub plants) over at least ¼ acre **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Note: answer YES for Lake-fringe wetlands* YES = 3 points & **go to H 1.4** NO = go to H 1.3.2 H 1.3.2 Does the unit have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ acre or 10% of its area, (*answer yes only if H 1.3.1 is NO*)? YES = 3 points NO = 0 points	3
H 1.4. Richness of Plant Species Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold) You do not have to name the species.* *Do not include Eurasean Milfoil, reed canarygrass, purple loosestrife, Russian Olive, Phragmites, Canadian Thistle, Yellow-flag Iris, and Salt Cedar (Tamarisk)* # of species ____ Scoring: > 9 species = 2 points 4-9 species = 1 point < 4 species = 0 points	2
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion between types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, medium, low, or none. *Use map of Cowardin plant classes prepared for questions H1.1 and map of open water from H1.3*  **None** = 0 points **Low** = 1 point **Moderate** = 2 points **High** = 3 points **High** = 3 points riparian braided channels with 2 classes = High NOTE: If you have four or more classes or three plants classes and open water the rating is always "high".	Figure__ 2

Wetland name or number A

H 1.6. Special Habitat Features: *Check the habitat features that are present in the wetland unit. The number of checks is the score.* ✓ Loose rocks larger than 4" **or** large, downed, woody debris (>4in. diameter) within the area of surface ponding or in stream. ✓ Cattails or bulrushes are present within the unit. ✓ Standing snags (diameter at the bottom > 4 inches) in the wetland unit or within 30 m (100ft) of the edge. ___ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ✓ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>45 degree slope) OR signs of recent beaver activity ___ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)* *Maximum score possible = 6*	4
H 1. TOTAL Score - Add the check marks in the box above	13

Rating of Site Potential **If score is:** **12 – 16 = H** **6 - 11 = M** **0 - 5 = L**
Record the rating on the first page

H 2.0 . Does the landscape have the potential to support habitat at the site?	
H 2.1 Accessible habitat (only area of habitat abutting wetland unit). *Calculate:* % undisturbed habitat 20 + [(% moderate and low intensity land uses)/2] 5 = 22.5 % If total accessible habitat is: > 1/3 (33.3%) of 1km circle (~100 hectares) — points = 3 20 - 33% of 1km circle — points = 2 10- 19% of 1km circle — points = 1 <10% of 1km circle — points = 0	2
H2.2 Undisturbed habitat in 1km circle around unit. If: Undisturbed habitat > 50% of circle — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of circle — points = 0	2
H2.3 Land use intensity in 1 km circle. If: > 50% of circle is high intensity land use — points = (- 2) Does not meet criterion above — points = 0	0
H 2.4 ☐ The wetland unit is in an area where annual rainfall is less than 12 inches, and its water regime is not influenced by irrigation practices, dams, or water control structures. *(Generally, this means outside boundaries of reclamation areas, irrigation district, or reservoirs)* points = 3 No	0
Total for H 2 Add the points in the boxes above	4

Rating of Landscape Potential **If score is:** **4- 6 = H** **1-3 = M** **< 1 = L**
Record the rating on the first page

H 3.0 Is the Habitat provided by the site valuable to society?	
H3.1Does the site provides habitat for species valued in laws, regulations or policies? *(choose the highest score)* Site meets ANY of the following criteria: — points = 2 ___ It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) ✓ It is a "priority area" for an individual WDFW species ___ It is a Wetland With a High Conservation Value as determined by the Department of Natural Resources ✓ It has 3 or more priority habitats within 100m (see Appendix B) ___ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100m (see Appendix B) — points = 1 Site does not meet any of the criteria above — points = 0	2

Rating of Value **If score is:** **2 = H** **1 = M** **0 = L**
Record the rating on the first page

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland unit meets the attributes described below and circle the appropriate Category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All units should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	Category
SC 1.0 Vernal pools Is the wetland unit **less than 4000 ft²**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *NOTE: If you find perennial, "obligate", wetland plants the wetland is probably NOT a vernal pool* — The soil in the wetland are shallow (<1ft deep (30 cm)) and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the "wet" season. YES = Go to SC 1.1 NO - *not a vernal pool* SC 1.1 Is the vernal pool relatively undisturbed in February and March? YES = Go to SC 1.2 NO – *not a vernal pool with special characteristics*	
SC 1.2 Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 miles (other wetlands, rivers, lakes etc.)? YES = Category II NO = Category III	**Cat. II** **Cat. III**
SC 2.0 Alkali wetlands Does the wetland unit meets **one** of the following two criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 - 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. **OR** does the wetland unit meets two of the following three sub-criteria? — Salt encrustations around more than 80% of the edge of the wetland — More than ¾ of the plant cover consists of species listed on Table 4 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. **YES = Category I** NO – *not an alkali wetland*	**Cat. I**

Wetland name or number A

SC 3.0 Wetlands with High Conservation Value (WHCV)

SC 2.1 Has the Department of Natural Resources updated their web site to include the list of Wetlands with High Conservation Value?
YES - Go to SC 2.2 NO – Go to SC 2.3 **Cat. I**

SC 2.2 Is the wetland unit you are rating listed on the DNR database as having a High Conservation Value? YES = Category I NO = not a WHCV

SC 2.3 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland?
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf
YES____ – contact WNHP/DNR and go to SC 2.4 NO = not a WHCV

SC 2.4 Has DNR identified the wetland within the S/T/R as a wetland with High Conservation value and is listed on their web site?
YES = Category I NO ____not an WHCV

SC 4.0 Bogs and Calcareous Fens

Does the wetland unit (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens. *Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.*

SC 4.1. Does an area within the wetland unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix C for a field key to identify organic soils)?
Yes - go to SC 4.3 No - go to SC 4.2

SC 4.2. Does an area within the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond?
Yes - go to SC 4.3 No - *Is not a bog for rating*

SC 4.3. Does an area within the unit have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5?
Yes – Category I bog No - go to SC 4.4

NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.

SC 4.4 Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy
Yes – Category I bog NO – go to question SC 4.5 **Cat. I**

5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks?
Yes – Is a Calcareous Fen for purpose of rating No - go to Question 6

6. Do the species listed in Table 6 comprise at least 10% of the total plant cover an area of peats and mucks, AND one of the two following conditions is met:
- Marl deposits (calcium carbonate ($CaCO_3$) precipitate) occur on the soil surface or plant stems
- The pH of free water ≥ 6.8 AND electrical conductivity ≥ 200 uS/cm at multiple locations within the wetland

Yes – Is a Category I calcareous fen No - Is not a calcareous fen **Cat. I**

Wetland name or number A

SC 5.0 Forested Wetlands Does the wetland unit have an area of forest rooted within its boundary that meets **at least one** of the following three criteria? (*Continue only if you have identified a forested class is present in question H 1.1*) • The wetland is within the "100 year" floodplain of a river or stream • aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species — There is at least ¼ acre of trees (even in wetlands smaller than 2.5 acres) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see definitions in question H3.1)* YES = go to SC 5.1 NO – *not a forested wetland with special characteristics*	
SC 5.1 Does the wetland unit have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees *(see Table 7)* YES = Category I NO = go to SC 5.2	**Cat. I**
SC 5.2 Does the unit have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species. YES = Category I NO = go to SC 5.3	**Cat. I**
SC 5.3 Does the wetland unit have areas with a forest canopy where more than 50% of the tree species (by cover) are fast growing species. *(see Table 7)* YES = Category II NO = go to SC 5.5	**Cat. II**
SC 5.4 Is the forested component of the wetland within the "100 year floodplain" of a river or stream? YES = Category II	**Cat. II**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories.* If you answered NO for all types enter "Not Applicable" on p.1	NA

Wetland name or number A

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf)

Count how many of the following priority habitats are within 330 ft (100m) of the wetland unit? *NOTE: This question is independent of the land use between the wetland unit and the priority habitat.*

___**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre).

___**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*).

___**Old-growth/Mature forests:** Old-growth east of Cascade crest: Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 25 trees/ha (10 trees/acre) that are > 53 cm (21 in) dbh, and 2.5-7.5 snags/ha (1 – 3 snags/acre) that are > 30-35 cm (12-14 in) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west and 80 - 160 years old east of the Cascade crest.

___**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

___**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

___**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

___**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

___**Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft.

___**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

___**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long.

___**Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).

___**Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch Wheatgrass (Pseudoroegneria spicata) is often the prevailing cover component along with Idaho Fescue (Festuca idahoensis), Sandberg Bluegrass (Poa secunda), Rough Fescue (F. campestris), or needlegrass (Achnatherum spp.).

___ **Juniper Savannah:** All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number AA

Yakima PUD

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): Wetland AA Date of site visit: 10/19

Rated by JA Smith Trained by Ecology? Yes ___ No Date of training ____

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___Y ✓N

NOTE: Form is not complete without the figures requested (*figures can be combined*).

Source of base aerial photo/map Google Earth

OVERALL WETLAND CATEGORY ____ (based on functions___ or special characteristics___)

1. Category of wetland based on FUNCTIONS

____**Category I** – Total score = 22-27

____**Category II** – Total score = 19-21

____**Category III** – Total score = 16-18

____**Category IV** – Total score = 9-15

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	(M)	L	H	(M)	L	H	(M)	L	
Landscape Potential	H	(M)	L	(H)	M	L	(H)	M	L	
Value	H	M	(L)	H	(M)	L	H	(M)	L	TOTAL
Score Based on Ratings		5			7			7		19

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY *Circle the appropriate category*
Vernal Pools	II III
Alkali	I
Wetland of High Conservation Value	I
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	I
Aspen Forest	I
Old Growth or Mature Forest – fast growing	II
Floodplain forest	II
None of the above	✓

Wetland name or number AA

Maps and figures required to answer questions correctly for Eastern Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (*can be added to map of hydroperiods*)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	
Map of the contributing basin	D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream *(can be added to another figure)*	R 4.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants *(can be added to figure above)*	S 4.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	

Wetland name or number AA

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1. Does the entire unit **meet both** of the following criteria?
   ___The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size
   ___At least 30% of the open water area is deeper than 10 ft (3 m)

   NO – go to 2 **YES** – The wetland class is **Lake Fringe** (Lacustrine Fringe)

2. Does the entire wetland unit **meet all** of the following criteria?
   ___The wetland is on a slope (*slope can be very gradual*),
   ___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks;
   ___The water leaves the wetland **without being impounded.**

   NO - go to 3 YES – The wetland class is **Slope**
   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foot deep).

3. Does the entire wetland unit **meet all** of the following criteria?
   ___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river;
   ___ The overbank flooding occurs at least once every 10 years.

   NO - go to 4 YES – The wetland class is **Riverine**
   NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.

4. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year. *This means that any outlet, if present, is higher than the interior of the wetland.*

   NO – go to 5 YES – The wetland class is **Depressional**

5. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

Wetland name or number AA

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

If you are still unable to determine which of the above criteria apply to your wetland, or if you have ***more than 2 HGM classes*** *within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number AA

DEPRESSIONAL WETLANDS **Water Quality Functions** - Indicators that the site functions to improve water quality		Points (only 1 score per box)
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing, unconstricted, surface outlet	points = 5 points = 3 **points = 3** points = 1	3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions of soils)*	YES = 3 **NO = 0**	0
D 1.3. Characteristics of persistent vegetation (Emergent, Scrub-shrub, and/or Forested Cowardin classes) Wetland has persistent, ungrazed, vegetation for > $^2/_3$ of area Wetland has persistent, ungrazed, vegetation from $^1/_3$ to $^2/_3$ of area Wetland has persistent, ungrazed vegetation from $^1/_{10}$ to < $^1/_3$ of area Wetland has persistent, ungrazed vegetation < $^1/_{10}$ of area	points = 5 **points = 3** points = 1 points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area of ponding that fluctuates every year. Do not count the area that is permanently ponded.* Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is ¼ - ½ total area of wetland Area seasonally ponded is < ¼ total area of wetland	**points = 3** points = 1 points = 0	3
Total for D 1	Add the points in the boxes above	9

Rating of Site Potential If score is: ___ **12- 16 = H** ✓ **6- 11 = M** ___ **0- 5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland receive stormwater discharges?	**Yes = 1** No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	**Yes = 1** No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	Yes = 1 **No = 0**	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1- D 2.3? Source_____	Yes = 1 No = 0	0
Total for D 2	Add the points in the boxes above	1

Rating of Landscape Potential If score is: ___ **3 or 4 = H** ✓ **1 or 2 = M** ___ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, or lake that is on the 303(d) list?	Yes = 1 **No = 0**	0
D 3.2. Is the wetland in a basin or sub-basin where water quality is an issue in some aquatic resource [303(d) list, eutrophic lakes, problems with nuisance and toxic algae]?	Yes = 1 **No = 0**	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the drainage or basin in which the wetland is found*)?	Yes = 2 **No = 0**	0
Total for D 3	Add the points in the boxes above	0

Rating of Value If score is: ___ **2-4 = H** ___ **1 = M** ✓ **0 = L** *Record the rating on the first page*

Wetland name or number A-A

DEPRESSIONAL WETLANDS **Hydrologic Functions** - Indicators that the site functions to reduce flooding and erosion.		Points (only 1 score per box)
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland: Wetland has no surface water outlet Wetland has an intermittently flowing outlet Wetland has a highly constricted permanently flowing outlet Wetland has a permanently flowing unconstricted surface outlet *(If outlet is a ditch and not permanently flowing treat wetland as "intermittently flowing")*	points = 8 points = 4 (points = 4) points = 0	4
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or deepest part (if dry).* Seasonal ponding: > 3 ft above the lowest point in wetland or the surface of permanent ponding Seasonal ponding: 2 ft - < 3 ft above the lowest point in wetland or the surface of permanent ponding The wetland is a headwater wetland Seasonal ponding: 1 ft - < 2 ft Seasonal ponding: 6 in - < 1 ft Seasonal ponding: < 6 in or wetland has only saturated soils	points = 8 (points = 6) points = 4 points = 4 points = 2 points = 0	6
Total for D 4	Add the points in the boxes above	10

Rating of Site Potential If score is: ___12-16 = H ___6-11 = M ___0-5 = L *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	(Yes = 1) No = 0	1
D 5.2. Is > 10% of the area within 150 ft of the wetland in a land use that generates runoff?	(Yes = 1) No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses? Railroad	(Yes = 1) No = 0	1
Total for D 5	Add the points in the boxes above	3

Rating of Landscape Potential If score is: ___3 = H ___1 or 2 = M ___0 = L *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The wetland is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland being rated. *Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds), AND Flooding occurs in sub-basin that is immediately down-gradient of wetland Surface flooding problems are in a sub-basin farther down-gradient The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ There are no problems with flooding downstream of the wetland	points = 2 (points = 1) points = 0 points = 0	1
D 6.2. Has the site has been identified as important for flood storage or flood conveyance in a regional flood control plan?	Yes = 2 No = 0	0
Total for D 6	Add the points in the boxes above	1

Rating of Value If score is: ___2-4 = H ___1 = M ___0 = L *Record the rating on the first page*

Wetland name or number AA

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	
H 1.1. Structure of the plant community: *Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac.* ____Aquatic bed ____Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover ____Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover ✓ Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover ✓ Scrub-shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) 4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	0
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 0	0
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac **OR** 10% of its area during the March to early June **OR** in August to the end of September? *Answer YES for Lake Fringe wetlands.* Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? *Answer yes only if H 1.3.1 is No.* Yes = 3 No = 0	3
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². *Different patches of the same species can be combined to meet the size threshold. You do not have to name the species.* *Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk)* # of species ____ Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	1
H 1.5. Interspersion of habitats Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. *Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.* **None** = 0 points **Low** = 1 point **Moderate** = 2 points All three diagrams in this row are **High** = 3 points Riparian braided channels with 2 classes	Figure__ 1

Wetland name or number AA

H 1.6. Special habitat features *Check the habitat features that are present in the wetland. The number of checks is the number of points.* ✓ Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface ponding or in stream. ✓ Cattails or bulrushes are present within the wetland. ___ Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge. ✓ Emergent or shrub vegetation in areas that are permanently inundated/ponded. ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree slope) OR signs of recent beaver activity ___ Invasive species cover less than 20% in each stratum of vegetation *(canopy, sub-canopy, shrubs, herbaceous, moss/ground cover)*	3
Total for H 1 — Add the points in the boxes above	8
Rating of Site Potential If score is: ___ 15-18 = H ✓ 7-14 = M ___ 0-6 = L — *Record the rating on the first page*	

H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is: *Calculate:* 20 % undisturbed habitat 8 + [(% moderate and low intensity land uses)/2] 32 = 24 % > 1/3 (33.3%) of 1 km Polygon — points = 3 20-33% of 1km Polygon — points = 2 10-19% of 1km Polygon — points = 1 <10% of 1km Polygon — points = 0	2
H 2.2. Undisturbed habitat in 1 km Polygon around wetland. *Calculate:* 40 % undisturbed habitat 10 + [(% moderate and low intensity land uses)/2] 70 = 45 % Undisturbed habitat > 50% of Polygon — points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches — points = 2 Undisturbed habitat 10 - 50% and > 3 patches — points = 1 Undisturbed habitat < 10% of Polygon — points = 0	2
H 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use — points = (- 2) Does not meet criterion above — points = 0	0
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by irrigation practices, dams, or water control structures. *Generally, this means outside boundaries of reclamation areas, irrigation districts, or reservoirs* — Yes = 3 No = 0	0
Total for H 2 — Add the points in the boxes above	4
Rating of Landscape Potential If score is: ✓ 4-9 = H ___ 1-3 = M ___ < 1 = L — *Record the rating on the first page*	

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose the highest score that applies to the wetland being rated* Site meets ANY of the following criteria: — points = 2 — It has 3 or more priority habitats within 100 m (see Appendix B) — It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists) — It is mapped as a location for an individual WDFW species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix B) — points = 1 Site does not meet any of the criteria above — points = 0	1
Rating of Value If score is: ___ 2 = H ✓ 1 = M ___ 0 = L — *Record the rating on the first page*	

Wetland name or number A+

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Vernal pools Is the wetland **less than 4000 ft²**, and does it meet at least **two** of the following criteria? — Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. — Wetland plants are typically present only in the spring; the summer vegetation is typically upland annuals. *If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.* — The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay. — Surface water is present for less than 120 days during the wet season. Yes – Go to **SC 1.1** No = **Not a vernal pool** SC 1.1. Is the vernal pool relatively undisturbed in February and March? Yes – Go to **SC 1.2** No = **Not a vernal pool with special characteristics**	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = **Category II** No = **Category III**	**Cat. II** **Cat. III**
SC 2.0. Alkali wetlands Does the wetland meet **one** of the following criteria? — The wetland has a conductivity > 3.0 mS/cm. — The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems). — If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. **OR** does the wetland unit meet two of the following three sub-criteria? — Salt encrustations around more than 75% of the edge of the wetland — More than ⅓ of the plant cover consists of species listed on Table 4 — A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. Yes = **Category I** No= **Not an alkali wetland**	**Cat. I**
SC 3.0. Wetlands of High Conservation Value (WHCV) SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to **SC 3.2** No – Go to **SC 3.3** SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = **Category I** No = **Not a WHCV** SC 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – **Contact WNHP/WDNR and go to SC 3.4** No = **Not a WHCV** SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = **Category I** No =**Not a WHCV**	**Cat. I**

Wetland name or number AA

SC 4.0 Bogs and Calcareous Fens Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? *Use the key below to identify if the wetland is a bog or calcareous fen.* ***If you answer yes you will still need to rate the wetland based on its functions.*** SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? *See Appendix C for a field key to identify organic soils.* Yes – Go to **SC 4.3** No – Go to **SC 4.2** SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep over bedrock or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 4.3** No = **Is not a bog for rating** SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = **Category I bog** No – Go to **SC 4.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog. SC 4.4. Is an area with peats or mucks forested (> 30% cover) with subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 5 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No – Go to **SC 4.5** SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = **Is a Calcareous Fen for purpose of rating** No – Go to **SC 4.6** SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks, AND one of the two following conditions is met: — Marl deposits [calcium carbonate ($CaCO_3$) precipitate] occur on the soil surface or plant stems — The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland Yes = **Is a Category I calcareous fen** No = **Is not a calcareous fen**	**Cat. I** **Cat. I**

SC 5.0. Forested Wetlands Does the wetland have an area of forest rooted within its boundary that meets **at least one** of the following three criteria? (*Continue only if you have identified that a forested class is present in question H 1.1*) — The wetland is within the 100 year floodplain of a river or stream — Aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species — There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW *(see definitions in question H3.1)* Yes – Go to **SC 5.1** No = **Not a forested wetland with special characteristics**	
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (*see Table 7*)? Yes = **Category I** No – Go to **SC 5.2**	**Cat. I**
SC 5.2. Does the wetland have areas where aspen (*Populus tremuloides*) represents at least 20% of the total cover of woody species? Yes = **Category I** No – Go to **SC 5.3**	**Cat. I**
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (*see Table 7*)? Yes = **Category II** No – Go to **SC 5.4**	**Cat. II**
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = **Category II** No = **Not a forested wetland with special characteristics**	**Cat. II**
Category of wetland based on Special Characteristics *Choose the highest rating if wetland falls into several categories* If you answered No for all types, enter "Not Applicable" on Summary Form	NA

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: ***NOTE:*** *This question is independent of the land use between the wetland and the priority habitat.*

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

— **Old-growth/Mature forests:** Old-growth east of Cascade crest – Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west and 80-160 years old east of the Cascade crest.

— **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

✓ — **Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

✓ — **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

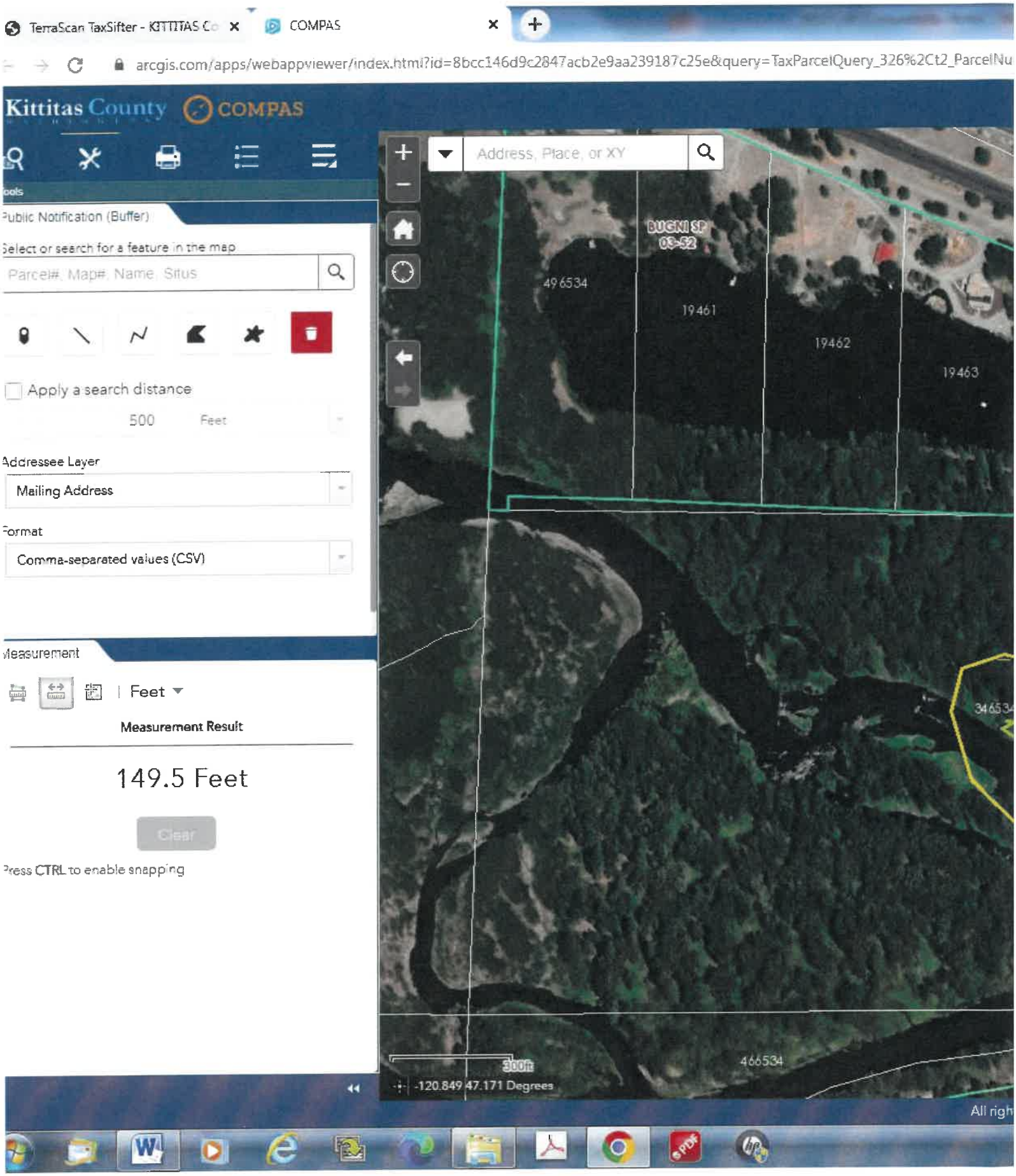
— **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 12 in (30 cm)in eastern Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Shrub-steppe:** A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).

— **Eastside Steppe:** Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).

— **Juniper Savannah:** All juniper woodlands.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.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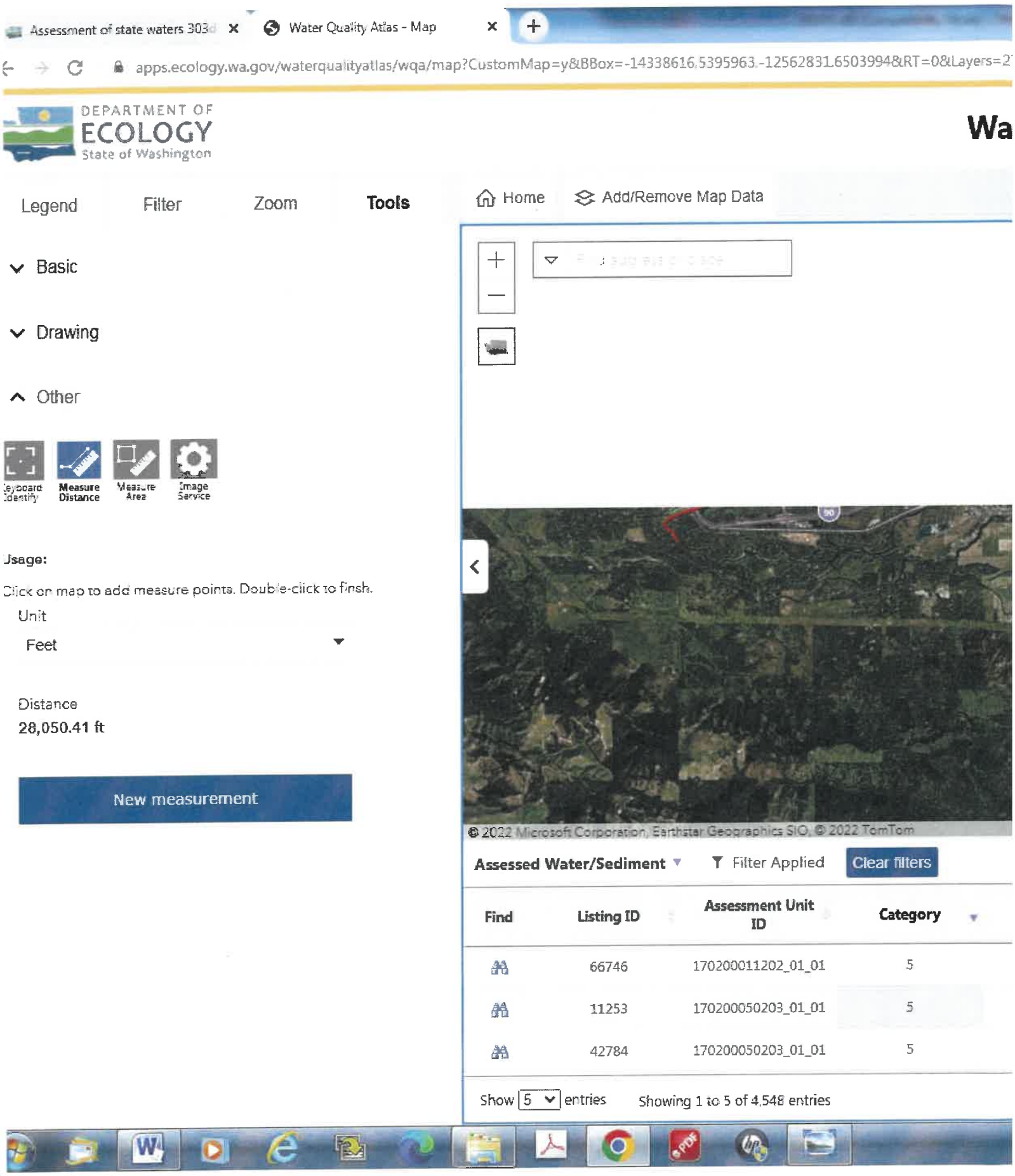
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Assessment of state waters 303d
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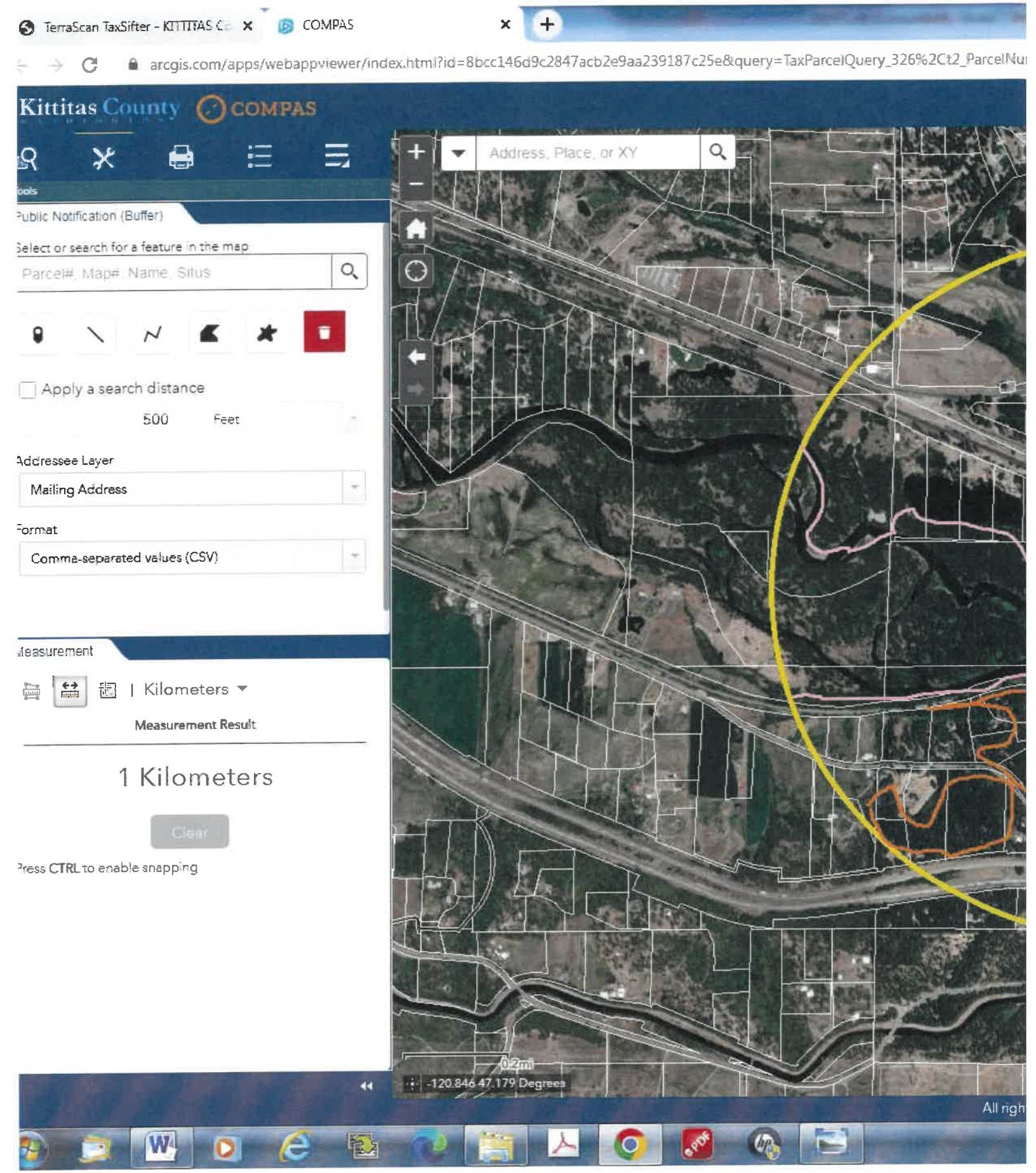
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