\\Seattle.na.aecomnet.com\Seattle\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXD\report_figures\V10.5_All\7-2_Kirkland_Overview2_rev1.mxd

AECOM

0 125 250 500
Feet

Study Area
Delineated Wetlands
Delineated Streams
Ditches

Puget Sound Energy
Sammamish-Juanita Transmission Line
Wetland Delineation
Kirkland, Washington
Project No.: 60608044

Figure 7-2

City of Kirkland
Overview of Delineated Wetlands and Streams
Figure 2 of 3

\\Seattle.na.aecomnet.com\Seattle\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXD\report_figures\V10.5_All\7-3_Kirkland_Overview3.mxd

Puget Sound Energy
Sammamish-Juanita
Transmission Line
Wetland Delineation

Kirkland, Washington
Project No.: 60608044

0 125 250 500
Feet

Study Area
Delineated Wetlands
Delineated Streams

Figure 7-3

City of Kirkland
Overview of Delineated Wetlands and Streams
Figure 3 of 3

\\Seattle.na.aecomnet.com\Seattle\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXD\report_figures\V10.5_All\7-4_KirklandK-B_K-C1.mxd

Puget Sound Energy
Sammamish-Juanita
Transmission Line
Wetland Delineation

Kirkland, Washington
Project No.: 60608044

Study Area
Sample Plot
2-foot Contours
Ditch
Delineated Wetland
Delineated Stream
Wetland/Stream Buffer

0 25 50 100 Feet

Figure 7-4

Wetlands K-B and K-C and Stream K-7

\\Seattle.na.aecomnet.com\Seattle\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXD\report_figures\V10.5_All\7-5 KirklandK-D_K-E.mxd

AECOM

Puget Sound Energy
Sammamish-Juanita
Transmission Line
Wetland Delineation

Kirkland, Washington
Project No.: 60608044

Study Area
Sample Plot
Delineated Wetland
2-foot Contours
Wetland/Stream Buffer
Ditch

0 50 100 200 Feet

Figure 7-5

Wetlands K-D, K-DD, and K-E

\\Seattle.na.aecomnet.com\Seattle\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXD\report_figures\V10.5_All\7-6 KirklandK-F_K-G_K-H.mxd

AECOM

Puget Sound Energy
Sammamish-Juanita
Transmission Line
Wetland Delineation

Kirkland, Washington
Project No.: 60608044

Study Area
Sample Plot
2-foot Contours
Delineated Wetland
Wetland/Stream Buffer
Ditch

0 50 100 200 Feet

Figure 7-6

Wetlands K-F, K-G, and K-H

1084

\\Seattle.na.aecomnet.com\Seattle\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXD\report_figures\V10.5_All\7-7 KirklandK-J_K-K.mxd

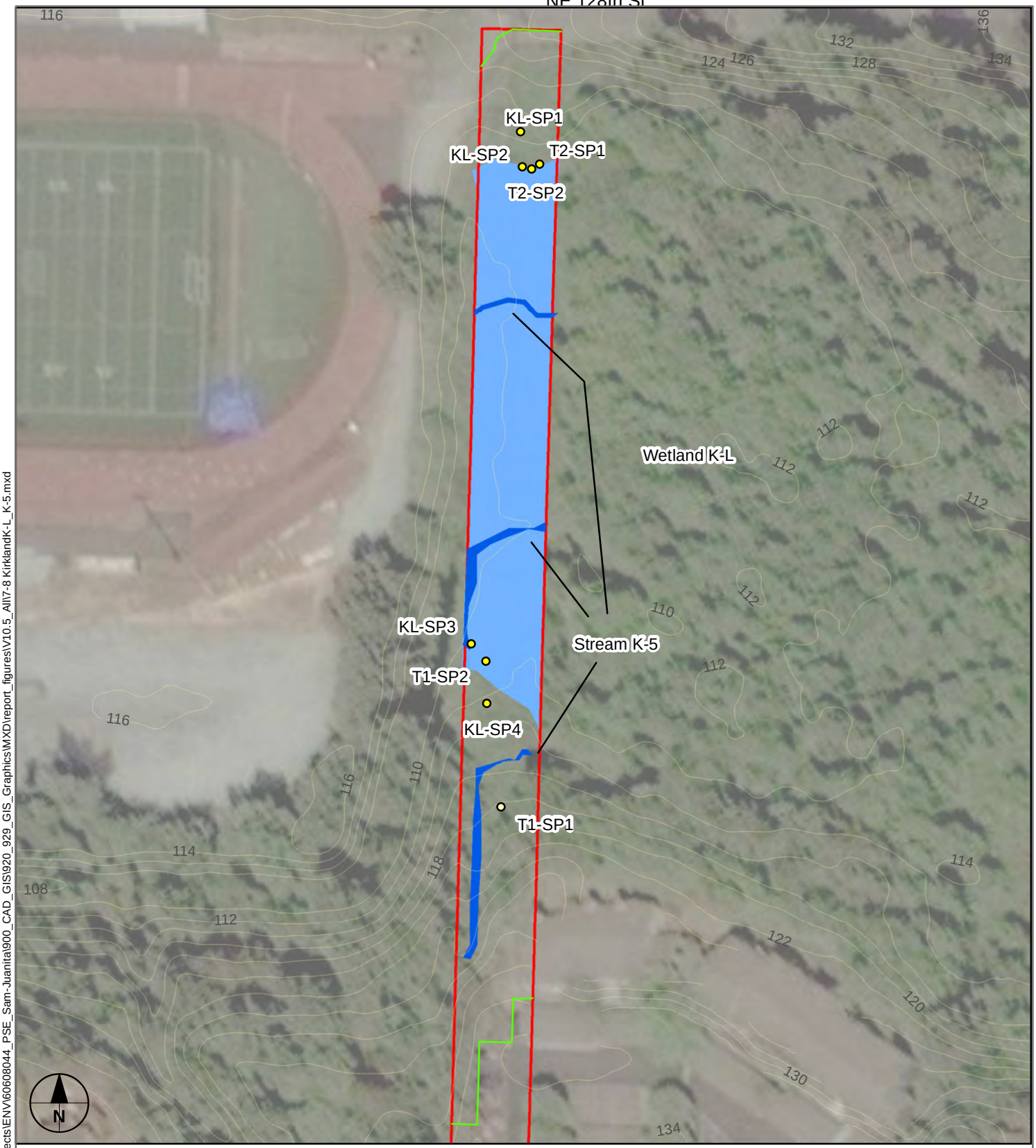
Puget Sound Energy
Sammamish-Juanita
Transmission Line
Wetland Delineation

Kirkland, Washington
Project No.: 60608044

Study Area
Sample Plot
Delineated Stream
2-foot Contours
Delineated Wetland
Wetland/Stream Buffer

0 50 100 200
Feet

Figure 7-7
Wetlands K-J and K-K Streams K-3 and K-6



Puget Sound Energy
Sammamish-Juanita
Transmission Line
Wetland Delineation

Kirkland, Washington
Project No.: 60608044

Study Area
Sample Plot
2-foot Contours
Delineated Stream
Delineated Wetland
Wetland/Stream Buffer

0 50 100 200
Feet

Figure 7-8
Wetland K-L and Stream K-5

1086

\\Seattle.na.aecomnet.com\Seattle\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXD\report_figures\V10.5_All\7-8 KirklandK-L_K-5.mxd

Puget Sound Energy
Sammamish-Juanita Transmission Line
Wetland Delineation

Kirkland, Washington
Project No.: 60608044

Study Area
Sample Plot
2-foot Contours
Delineated Stream
Delineated Wetland
Wetland/Stream Buffer

0 50 100 200
Feet

Figure 7-9

Wetland K-HF (Heronfield Wetlands)

1087

\\Seattle.na.aecomnet.com\Seattle\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXDreport_figures\V10.5_All\7-9 Kirkland HF Wetland1.mxd

8.0 Wetland and Stream Buffers

Required wetland and stream buffers are determined by jurisdiction, in accordance with applicable local regulations, as discussed in the sections that follow.

8.1 Wetland and Stream Buffers – City of Redmond

8.1.1 Wetland Buffers

Based on information provided in RZC 21.64.030, wetland buffers are determined using information pertaining to the wetland rating and whether measures to minimize impacts to wetlands (listed in RZC Table 21.64.030A.3) are implemented, as shown in Table 8.1 and Table 8-2.

Table 8-1. City of Redmond Wetland Buffer Requirements

Buffer Width Based on Habitat Score (feet)			
Wetland Category	**3 to 5 Points**	**6 to 7 Points**	**8 to 9 Points**
Category I: Wetlands of High Conservation Value	250	250	300
Category I	100	150	300
Category II	100	150	300
Category III	80	150	300
Category IV	50	50	50

Source: RZC Table 21.64.030A.1

Table 8-2. City of Redmond Wetland Buffer Requirements When Measures to Minimize Impacts to Wetlands Are Implemented

Buffer Width Based on Habitat Score (feet)			
Wetland Category	**3 to 5 Points**	**6 to 7 Points**	**8 to 9 Points**
Category I: Wetlands of High Conservation Value	190	190	225
Category I	75	110	225
Category II	75	110	225
Category III	60	110	225
Category IV	40	40	40

Source: RZC Table 21.64.030A.2

Measures to minimize impacts to wetlands, which are specified in RZC Table 21.64.030A.3, include measures to minimize impacts from disturbance, lights, noise, toxic runoff, stormwater runoff, change in water regime, pets and human disturbance, and dust.

The Department of Planning and Community Development may extend buffer widths on a case-by-case basis as necessary to protect wetland functions and values based on site-specific characteristics. The Department may also allow modification of the standard wetland buffer width on a case-by-case basis by averaging buffer widths.

8.1.2 Stream Buffers

Based on information provided in RZC 21.64.020, stream buffers are determined based on the classification of the riparian stream corridor, as shown in Table 8-3.

Table 8-3. City of Redmond Stream Buffer Requirements

Riparian Stream Corridor Classification	Stream Buffer Width
Class I	
Sammamish River north of PSE powerline crossing	150-foot inner buffer + 50-foot outer buffer
Sammamish River south of PSE powerline crossing	150 feet
Bear Creek west of Avondale Road	150 feet
Bear Creek east of Avondale Road	150-foot inner buffer + 50-foot outer buffer
Evans Creek	150-foot inner buffer + 50-foot outer buffer
Class II	
Class II	100 feet + 50-foot outer buffer
Class III	
Class III	100 feet
Class IV	
Perennial	36 feet
Intermittent	25 feet
Source: RZC 21.64.020.B	

The Department of Planning and Community Development may increase stream buffer width if it is determined that the recommended width is insufficient to prevent habitat degradation and to protect the structure and function of the habitat area; to extend the buffer to the outer edge of the frequently flooded area; or to make it equal to a landslide hazard area or erosion hazard area buffer.

8.1.3 Buffers of Wetlands and Streams in the Study Area

Table 8-4 summarizes the standard required buffer distances for wetlands mapped in the study area, based on their rating and habitat scores, and the assumption that all applicable required measures listed in RZC Table 21.64.030A.3 to minimize impacts to wetlands will be implemented. Table 8-5 summarizes the standard required buffer distances for the streams mapped in the study corridor within the City of Redmond, based on their classification. Figures 5-3 through 5-9 show portions of buffers within the study area, in the vicinity of proposed project impacts. Buffers were truncated at roads and other paved areas. RZC 21.64.030(B)(6)(b) states that reductions in buffer widths may be allowed where existing roads or structures lie within the buffer.

Estimated buffers off off-site wetlands are based on boundaries determined by best professional judgment have been included. Additionally, the buffer of Wetland R-E is based on the estimated full size of the wetland, as shown on the figures in Appendix C.

Table 8-4. Standard Regulatory Buffers for Study Area Wetlands – City of Redmond

Name	Category	Habitat Score	Water Quality Score	Buffer Width (With Measures to Minimize Impacts)
Wetland R-A	II	6	8	110 feet
Wetland R-C	III	3	7	60 feet
Wetland R-D	III	3	7	60 feet
Wetland R-E	II	4	8	75 feet
Wetland R-GCA[1]	III	4	6	60 feet
Wetland R-GCB[1]	III	4	6	60 feet
[1]Information on the rating, habitat score, and water quality score for Wetlands R-GCA and R-GCB comes from Parametrix 2018.				

Table 8-5. Standard Regulatory Buffers for Study Area Streams – City of Redmond

Name	Category	Standard Buffer
Gun Club Creek	Class III	100 feet
Stream R-2	Class III	100 feet
Stream R-3	Class III	100 feet
York Creek	Class III	100 feet
124th Street Stream	Class III	100 feet

8.2 Wetland and Stream Buffers – Unincorporated King County

8.2.1 Wetland Buffers

Based on information provided in the KCC, wetland buffers are determined using information pertaining to the wetland rating, the level of impact of the land use, and whether the property is located within the UGA. The unincorporated King County portion of the study area is located just inside the UGA. The study area and planned transmission line route are located just inside the UGA (although most of Wetland KC-A is located outside the UGA). Therefore, buffers for inside the UGA are appropriate (Table 8.5).

Table 8-6. King County Wetland Buffer Requirements Within the Urban Growth Area

Wetland Category and Characteristics	Buffer
Category I	
Natural Heritage Wetlands	215 feet
Bog	215 feet
Estuarine	175 feet
Coastal Lagoon	175 feet
Habitat score from 31 to 36 points	225 feet
Habitat score from 20 to 30 points	150 feet plus 7.5 feet for each habitat score above 20 points
Category I wetlands not meeting any of the criteria above	125 feet
Category II	
Estuarine	135 feet
Habitat score from 31 to 36 points	200 feet
Habitat score from 20 to 30 points	125 feet plus 7.5 feet for each habitat score above 20 points

Category II wetlands not meeting any of the criteria above	100 feet
Category III	
Habitat score from 20 to 28 points	125 feet
Category III wetlands not meeting any of the criteria above	75 feet
Category IV	50 feet
Source: KCC 21A.24.325	

Buffer widths may be modified under certain circumstances, subject to County approval, as stated in KCC 21A.24.325.

8.2.2 Aquatic Area Buffers

Aquatic area buffers for properties inside the UGA are shown in Table 8.6.

Table 8-7. King County Aquatic Area Buffer Requirements Within the Urban Growth Area

Aquatic Area Classification	Aquatic Area Buffer
Type S	115 feet
Type F	115 feet
Type N	65 feet
Type O	25 feet
Source: KCC 21A.24.358	

Buffer widths may be modified under certain circumstances, subject to County approval, as stated in KCC 21A.24.358.

8.2.3 Buffers of Wetlands and Streams in the Study Area

Table 8.7 summarizes the standard required buffer distances for the wetlands and streams mapped in the study corridor within unincorporated King County, based on their classification. Figures 6-2 and 6-3 show associated wetland/stream buffers within the study area. The buffer of Wetland KC-A is based on the estimated full size of the wetland, as shown on the figures in Appendix C.

Table 8-8. Standard Regulatory Buffers for Study Area Wetlands and Streams – Unincorporated King County

Name	Category	Standard Buffer
Wetland KC-A	Category II	100 feet
Wetland KC-B	Category III	75 feet
Stream KC-1	Type N	65 feet
124th Street Stream	Type F	115 feet

Wetland and stream buffers were truncated at paved and gravel areas since they represent an interruption to buffer function within the prescriptive buffer width. KCC 21A.24.325 and 21A.24.358 state that modifications to buffer widths may be allowed where a legally established roadway transects the wetland or aquatic area buffer, provided the following apply:

- For wetlands: the part of the buffer on the other side of the roadway does not provide additional protection of the proposed development or wetland, and provides insignificant biological, geological, or hydrological buffer functions in relation to the other portion of the buffer adjacent to the wetland (KCC 21A.24.325(D)(4)).

- For aquatic areas: the part of the buffer on the other side of the roadway provides insignificant biological or hydrological function in relation to the portion of the buffer adjacent to the aquatic area (KCC 21A.24.358(E)(d)).

Although not a roadway, the railroad ballast was part of a legally established railroad corridor that transected the current identified wetland/stream buffer, such that the undeveloped area on the opposite side of the buffer no longer provided significant buffer functions. Currently, the portion of buffers on the opposite side of the railroad ballast from mapped wetlands and streams are generally disturbed and/or lacking in woody vegetation, provide insignificant biological, geological, and hydrological buffer functions, and do not provide additional protection to the wetlands and streams on the other side of the ballast.

8.3 Wetland and Stream Buffers – City of Kirkland

8.3.1 Wetland Buffers

In accordance with the KZC, wetland buffers are determined using information pertaining to the wetland category and habitat scores on the associated rating form, as shown in Table 8.8.

Table 8-9. City of Kirkland Standard Wetland Buffers

Wetland Category	Buffer Width Based on Habitat Points			
	3-4 Points	5 Points	6-7 Points	8-9 Points
Category I: bogs and high conservation areas	190 feet	190 feet	190 feet	225 feet
Category I: Others	75 feet	105 feet	165 feet	225 feet
Category II	75 feet	105 feet	165 feet	225 feet
Category III	60 feet	105 feet	165 feet	225 feet
Category IV	40 feet	40 feet	40 feet	40 feet
Source: KZC Table 90.55.1.				

An increased buffer may be required if the wetland or its buffer contains or is adjacent to a severe erosion hazard area, habitat of certain species, or a frequently flooded area.

8.3.2 Stream Buffers

Based on information provided in the KZC, stream buffers are determined based on the classification of the riparian stream corridor, as shown in Table 8.9.

Table 8-10. City of Kirkland Standard Stream Buffer Widths

Stream Type	Stream Buffer Width
F (Fish bearing)	100 feet
Np (Perennial non-fish bearing)	50 feet
Ns (Season non-fish bearing)	50 feet
Source: KZC Table 90.65.1.	

An increased buffer may be required if the stream or its buffer contains or is adjacent to a severe erosion hazard area, habitat of certain species, or a frequently flooded area.

8.3.3 Buffers of Wetlands and Streams in the Study Area

Based on the information in the KZC, Table 8.10 and Table 8.11 summarize the standard required buffer distances for wetlands and streams mapped in the study corridor within the City of Kirkland, based on their classification. Figures 7-4 through 7-9 show wetland/stream buffers within the study area. Where wetlands

extend beyond the study area boundary, buffers are based on the estimated full size of the wetlands, as shown on the figures in Appendix C.

Table 8-11. Standard Regulatory Buffers for Study Area Wetlands – City of Kirkland

Name	Category	Habitat Score	Standard Buffer Width
Wetland K-B	IV	3	40 feet
Wetland K-C	III	3	60 feet
Wetland K-D	III	3	60 feet
Wetland K-DD	III	3	60 feet
Wetland K-E	IV	3	40 feet
Wetland K-F	III	3	60 feet
Wetland K-G	III	3	60 feet
Wetland K-H	III	3	60 feet
Wetland K-J	II	6	165 feet
Wetland K-K	III	3	60 feet
Wetland K-L	II	6	165 feet
Wetland K-HF	II	5	105 feet

Table 8-12. Standard Regulatory Buffers for Study Area Streams – City of Kirkland

Name	Type	Standard Buffer
Stream K-3	Type F	100 feet
Stream K-5	Type F	100 feet
Stream K-6	Type F	100 feet
Stream K-7	Type Np	50 feet

Wetland and stream buffers were truncated at paved and gravel surfaces to more accurately reflect the current site conditions since these areas do not provide buffer function.

KZC 90.120 allows an interrupted buffer waiver if the following criteria are met:

1. The existing legal improvement creates a substantial barrier to the buffer function;
2. The interrupted buffer does not provide additional protection of the critical area from the proposed development; and
3. The interrupted buffer does not provide significant hydrological, water quality, and wildlife buffer functions relating to the portion of the buffer adjacent to the critical area.

The railroad ballast/gravel trail creates a substantial barrier to buffer function since it restricts development of woody vegetation for screening functions, and soil development to provide water quality functions. Fill material is generally 2 feet or more of coarse gravel. The railroad ballast/trail would not provide additional protection to critical areas from the proposed utility line. Additionally, the railroad ballast does not provide significant hydrological, water quality or wildlife buffer functions. The coarse rock does not retain or filter runoff as would native soils, and provides minimal buffer for wildlife. Therefore, the interrupted buffer waiver is applicable in this circumstance.

9.0 Summary

AECOM identified and evaluated 18 wetlands and 10 streams within the study area. These included 4 wetlands and 5 streams in the City of Redmond, 2 wetlands and 2 streams in unincorporated King County, and 12 wetlands and 4 streams in the City of Kirkland. Note that one stream, 124th Street Stream, occurs in both the City of Redmond and unincorporated King County. Table 9.1 provides a summary of pertinent information for each wetland delineated, and Table 9.2 provides a summary of pertinent information for each stream segment mapped. For completeness, Table 9.1 also includes information about two wetlands within the study area that were delineated for a different project.

Table 9-1. Summary of Wetlands Delineated

Wetland	Area	HGM Class	Cowardin Class	Functional Rating			
				Category	Water Quality Score	Hydrologic Score	Habitat Score
City of Redmond							
R-A	13,248 ft^2 (0.30 ac)	Riverine	PEM/PSS/PFO	II	8	7	6
R-C	305 ft^2 (0.01 ac)	Depressional	PEM	III	7	6	3
R-D	4,210 ft^2 (0.10 ac)	Depressional	PEM	III	7	6	3
R-E[1]	9,975 ft^2 (0.23 ac)	Depressional	PEM	II	8	8	4
R-GCA[2]	2,831 ft^2 0.07 ac	Riverine	PEM/RAB	III	6	7	4
R-GCB[2]	4,617 ft^2 (0.11 ac)	Riverine	PEM/RAB	III	6	7	4
Unincorporated King County[3]							
KC-A[3]	8,799 ft^2 (0.20 ac)	Depressional	PEM	II	22	20	13
KC-B[3]	1,029 ft^2 (0.02 ac)	Depressional	PEM	III	22	14	7
City of Kirkland							
K-B[4]	3,047 ft^2 (0.07 ac)	Depressional	PEM	IV	6	6	3
K-C[4]	3,634 ft^2 (0.08 ac)	Depressional	PEM	III	7	6	3
K-D[5]	28,254 ft^2 (0.65 ac)	Depressional	PEM	III	7	7	3
K-DD	225 ft^2 (0.01 ac)	Depressional	PEM	III	7	7	3
K-E	1,992 ft^2 (0.05 ac)	Depressional	PEM	IV	6	6	3
K-F[1]	19,251 ft^2 (0.44 ac)	Depressional	PEM/PFO	III	7	7	3
K-G	10,119 ft^2 (0.23 ac)	Depressional	PEM	III	7	7	3

Table 9-1 (continued). Summary of Wetlands Delineated

Wetland	Area	HGM Class	Cowardin Class	Functional Rating			
				Category	Water Quality Score	Hydrologic Score	Habitat Score
K-H[4]	1,486 ft^2 (0.03 ac)	Depressional	PEM/PFO	III	8	7	3
K-J[1]	49,807 ft^2 (1.14 ac)	Depressional	PEM/PSS/ PFO/POW	II	9	9	6
K-K[1]	16,563 ft^2 (0.38 ac)	Depressional	PFO	III	6	7	3
K-L[1]	15,130 ft^2 (0.35 ac)	Depressional +Riverine	PEM/PSS/ PFO/POW	II	7	7	6
K-HF[1]	25,937 ft^2 (0.60 ac)	Depressional	PEM/PSS/ PFO	II	9	8	5

[1] Wetland extends beyond the study area boundary. The total acreage within the study area is given.
[2] Wetlands R-GCA and R-GCB were delineated in 2017 by Parametrix (2018). Information has been included for completeness but has not been verified.
[3] Note that based on the requirements in KCC 21A.24.318, the 2004 wetland rating form was used to rate the unincorporated King County wetlands.
[4] Wetland is outside the current project study area boundary, but was mapped during earlier surveys of a larger area.
[5] Wetland extends beyond the current study area boundary but was delineated in full. Total wetland acreage is given.
HGM = hydrogeomorphic, PEM = palustrine emergent, PSS = palustrine scrub-shrub, PFO = palustrine forested, RAB = riverine aquatic bed, and POW = palustrine open water.

Table 9-2. Summary of Streams Delineated

Stream Name/ID	Associated Wetland	Area Within Study Area	Classification
City of Redmond			
Gun Club Creek	R-A, R-GCA, R-GCB	74,357 square feet	Class III
Stream R-2	R-C	137 square feet	Class III
Stream R-3	R-D	21 square feet	Class III
York Creek	R-E	579 square feet	Class III
124th Street Stream	none	602 square feet	Class III
Unincorporated King County			
Stream KC-1	KC-A	408 square feet	Type N
124th Street Stream	none	1,588 square feet	Type F
City of Kirkland			
Stream K-3	K-J	5,784 square feet	Type F
Stream K-5	K-L	1,188 square feet	Type F
Stream K-6	K-K	1,455 square feet	Type F
Stream K-7[1]	K-B	154 square feet	Type Np

[1]Area given extends beyond the study area.

Based on wetland ratings and habitat scores, and stream ratings, appropriate buffers for these critical areas have been determined. Mapped locations of wetlands, streams, and buffers have been provided to PSE for use in planning and permitting the Sammamish-Juanita transmission line project.

10.0 References

AECOM. 2016. Puget Sound Energy Sammamish Substation Wetland Delineation and Stream Reconnaissance Report. Seattle, Washington.

Anderson, P.S., S. Meyer, P. Olson, and E. Stockdale. 2016. Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State. Washington Department of Ecology Publication Number 16-06-029. Olympia, Washington.

Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State by; Paul S. Anderson, Susan Meyer, Dr. Patricia Olson, Erik Stockdale.

City of Kirkland. 2019. Kirkland's Enterprise Geographic Information System (GIS) Program GIS Data. Available at http://www.kirklandwa.gov/depart/Information_Technology/GIS.htm on the City of Kirkland website. Last accessed October 22, 2019.

City of Redmond. 2005. Fish and Wildlife Habitat Conservation Areas Map (Core Preservation Areas). Redmond, Washington.

City of Redmond. 2016. Map 64.3 Streams Classification. Available on-line at: https://www.redmond.gov/DocumentCenter/View/4056/Stream-Classification-Map-PDF.

City of Redmond. 2019a. Redmond Zoning Map. Map 4.1 of the Redmond Zoning Code. Redmond, Washington.

City of Redmond. 2019b. Willows Road Culvert Replacement. Available on-line at: https://www.redmond.gov/846/Willows-Road-Culvert-Replacement. Accessed August 12, 2019.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Performed for the U.S. Department of the Interior Fish and Wildlife Service Office of Biological Services. Washington, D.C.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. Western Mountains, Valleys and Coast 2016 Regional Wetland Plant List: 2016 Wetland Ratings. Phytoneuron 2016-30:1-17.

Parametrix. 2018. Willows Road Culvert Replacement: Critical Areas Report. Prepared for City of Redmond by Parametrix, Seattle, Washington.

The Watershed Company. 2009. Sammamish Valley Park Wetland Delineation Report. Reference No. 080906. Kirkland, Washington.

The Watershed Company, 2020. PSE Transmission Line, Confirmation of Wetland and Stream Boundaries – Peer Review Letter. January 28, 2020 Memorandum from Peter Heltzel to Jon Regala of the City of Kirkland Department of Planning and Community Development.

USACE (U.S. Army Corps of Engineers). 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. Environmental Laboratory. Washington, D.C.

USACE. 2005. Regulatory Guidance Letter No. 05-05. Subject: Ordinary High Water Mark Identification. Signed by: Don T. Riley, Major General, U.S. Army, Director of Civil Works.

USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Vicksburg, Mississippi.

USDA NRCS (U.S. Department of Agriculture National Resources Conservation Service). 2019a. Custom Soil Resource Report for King County Area, Washington. Reported generated for Redmond Study Area at the Web Soil Survey. Available on-line at: http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

USDA NRCS (U.S. Department of Agriculture National Resources Conservation Service). 2019b. Custom Soil Resource Report for King County Area, Washington. Reported generated for King County Study Area at the Web Soil Survey. Available on-line at: http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

USDA NRCS (U.S. Department of Agriculture National Resources Conservation Service). 2019c. Custom Soil Resource Report for King County Area, Washington. Reported generated for Kirkland Study Area at the Web Soil Survey. Available on-line at: http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

U.S. Fish and Wildlife Service. 1977 to present. Wetlands and Deepwater Habitats of the Coterminous United States. National Wetland Inventory Polygon Data. Available on-line at: http://www.fws.gov/wetlands/.

Washington Department of Ecology. 2004. Washington State Wetland Rating System for Western Washington – Revised. Washington State Department of Ecology Publication #04-06-025. Olympia, Washington.

Washington Department of Ecology. 2014. Washington State Wetland Rating System for Western Washington: 2014 Update. Washington State Department of Ecology Publication #14-06-029. Olympia, Washington.

WDFW (Washington Department of Fish and Wildlife). 2019a. Priority Habitats and Species on the Web Interactive Mapping. Available on-line at: http://apps.wdfw.wa.gov/phsontheweb/. Last accessed August 6, 2019.

WDFW. 2019b. SalmonScape interactive mapping system. Available on-line at: http://apps.wdfw.wa.gov/salmonscape/map.html. Last accessed August 6, 2019.

Washington Natural Heritage Program. 2019. Element Occurrences – Current. Digital data downloaded from Washington Department of Natural Resources GIS Open Data. Last Updated July 16, 2019. Accessed August 30, 2019.

Weather Underground. 2019a. Weather History for KBFI (Boeing Field – King County International Airport). Accessed online at http://www.wunderground.com.

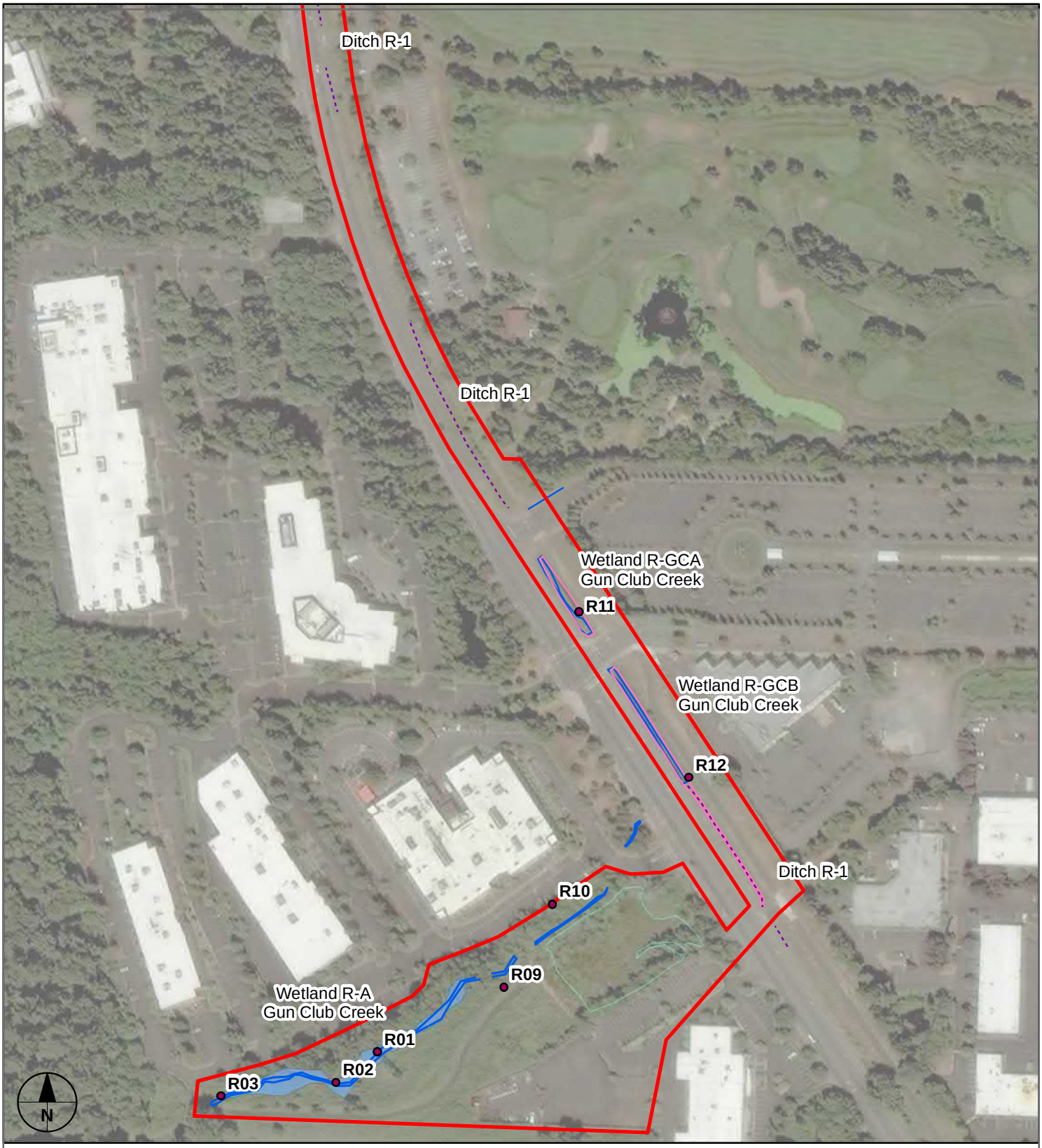
Weather Underground. 2019b. Weather History for Seattle, Washington. Available on-line at http://www.wunderground.com.

Appendix A

Photographic Logs

City of Redmond

Photographic Log



0 125 250 500 Feet

Puget Sound Energy
Sammamish-Juanita
Transmission Line
Wetland Delineation

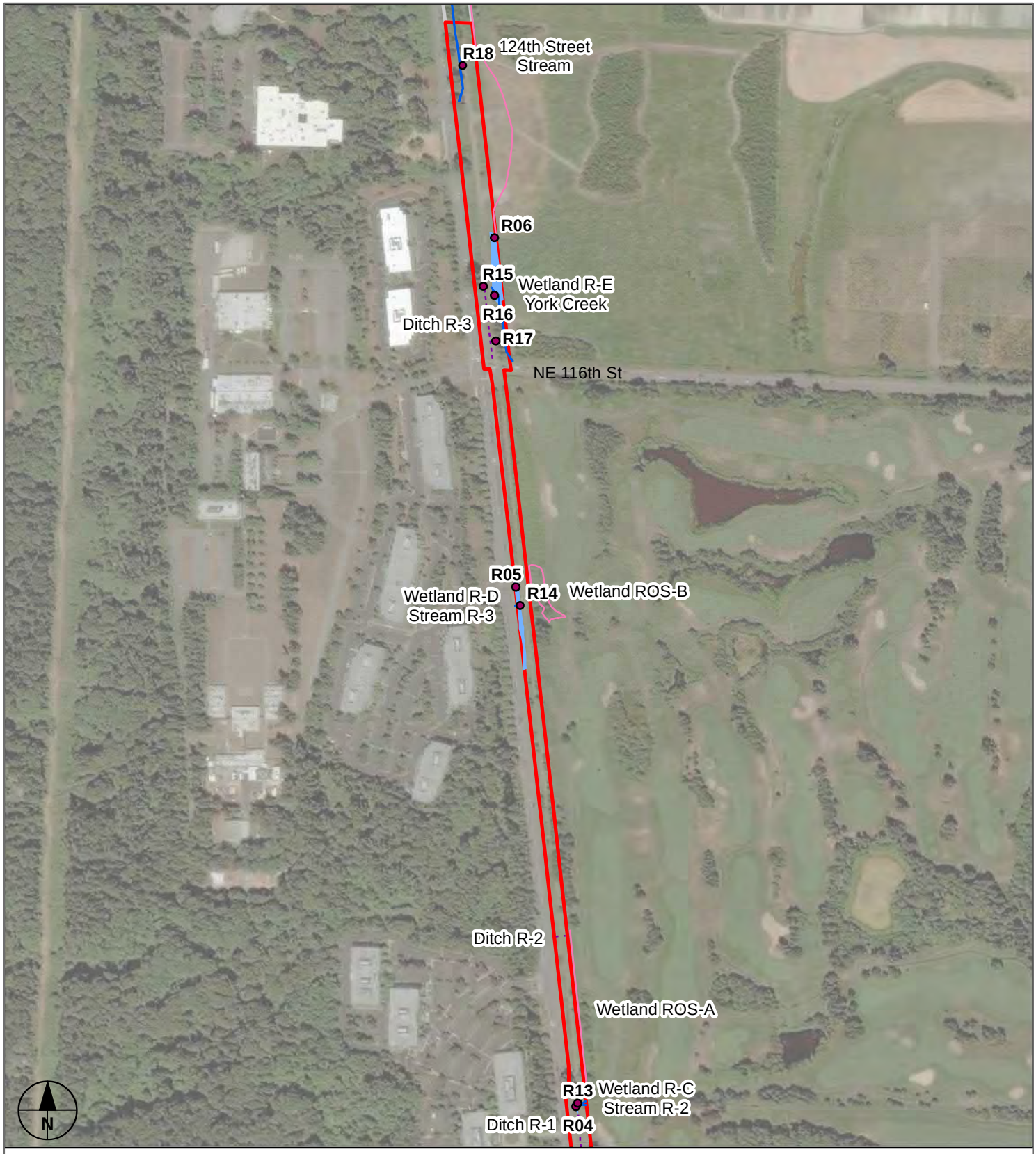
Redmond, Washington
Project No.: 60608044

Study Area
Photo Points
Delineated Wetlands
Delineated Streams
Ditches
Stormwater Features
Wetland Edge
(previous delineation)

City of Redmond
Photo Index Map
1 of 2

1100

J:\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXD\report_figures\Delineation_report_Red_revision\PhiotoLog_1.mxd



0 125 250 500 Feet

Puget Sound Energy
Sammamish-Juanita
Transmission Line
Wetland Delineation

Redmond, Washington
Project No.: 60608044

Study Area
Delineated Wetlands
Delineated Streams
Estimated Wetland Edge
Ditches
Photo Points

City of Redmond Photo Index Map 2 of 2

J:\DCS\Projects\ENV\60608044_PSE_Sam-Juanita\900_CAD_GIS\920_929_GIS_Graphics\MXD\report_figures\Delineation_report_Red_revision\PhotoLog_2.mxd

Photo R01a. Wetland R-A. Sample Plot T1-SP2. Vegetation, PFO component. View north. June 4, 2014.

Photo R01b. Wetland R-A. Sample Plot T1-SP2. Vegetation, PEM Component. View south. June 4, 2014.

Photo R01c. Wetland R-A. Sample Plot T1-SP2. Soil log hole. June 4, 2014.

Photo R02. Wetland R-A. Sample Plot T2-SP2. Soil log hole. June 4, 2014.

Photo R03. Wetland R-A. View east from west end. April 15, 2016.

Photo R04a. Wetland R-C. Sample Plot SP-F1. Vegetation. View west. April 22, 2014.

Photo R04b. Wetland R-C. Sample Plot SP-F1. Soils. June 29, 2016.

Photo R04c. Wetland R-C, Sample Plot SP-F1. Hydrology. June 29, 2016.

Photo R05a. Wetland R-D, Sample Plot SP-D1. Vegetation. April 29, 2016.

Photo R05b. Wetland R-D, Sample Plot SP-D1. Soils. April 29, 2016.

Photo R05c. Wetland R-D, Sample Plot SP-D1. Soil log hole. April 29, 2016.

Photo R06a. Wetland R-E, Sample Plot SP-B1. Vegetation and soil log hole. June 28, 2016.

Photo R06b. Wetland R-E, Sample Plot SP-B1. Soils. June 28, 2016.

Photo R07. Gun Club Creek. Representative substrate (segment west of Willows Road NE). April 15, 2016. Exact location of photo is not known and is not shown on the index map.

Photo R08. Gun Club Creek (segment west of Willows Road NE). Plastic Stream Liner. April 15, 2016. Exact location of photo is not known and is not shown on the index map.

Photo R09. Gun Club Creek (segment west of Willows Road NE). Riparian Vegetation. View West. April 15, 2016.

Photo R10. Gun Club Creek (segment west of Willows Road NE). Riparian Vegetation. View East. April 15, 2016.

Photo R11. Gun Club Creek (segment east of Willows Rd NE). View southeast. April 8, 2019.

Photo R12. Gun Club Creek (segment east of Willows Rd NE). View south. April 8, 2019.

Photo R13. Stream R-2. View west. June 28, 2016.

Photo R14. York Creek. Stagnant area adjacent to Willows Rd
NE. April 8, 2019.

Photo R15. York Creek. View south. April 8, 2019.

Photo R16. York Creek. Riparian vegetation. View east. April 8, 2019.

Photo R17. 124th Street Stream. View south. April 8, 2019.

Unincorporated King County

Photographic Log

Wetland KC-A, Sample Plot SP-A1. Vegetation. June 28, 2016.

Wetland KC-A, Sample Plot SP-A1. Soils. June 28, 2016

Wetland KC-A, Sample Plot SP-A1. Soil log hole. June 28, 2016.

Stream KC-1. View west. June 28, 2016.

Wetland KC-B. Vegetation and ponding. June 4, 2019.

Wetland KC-B. Sample Plot SP-1. Soil log hole. June 4, 2019.

Wetland KC-B. Sample Plot SP-1. Soils. June 4, 2019.

124th Street Stream. View from north end looking southeast. April 8, 2019.

124th Street Stream. View south. April 8, 2019.

124th Street Stream. Culvert. April 8, 2019.

City of Kirkland

Photographic Log

Wetland K-B. View west. August 21, 2015.

Wetland K-B, Sample Plot SP-KB1. Vegetation. October 22, 2017.

Wetland K-B, Sample Plot SP-KB1. Soil Log Hole (restricted by rock). October 22, 2017.

Wetland K-B, Sample Plot SP-KB1. Hydrology. October 22, 2017.

Stream K-7. July 1, 2019.

Wetland K-C. View west. August 21, 2015.

Wetland K-C, Sample Plot SP-KC1. Vegetation. October 22, 2017.

Wetland K-C, Sample Plot SP-KC1. Hydrology. October 22, 2017.

Wetland K-D. Overview looking east. August 21, 2015.

Wetland K-D. Representative vegetation. August 21, 2015.

Wetland K-D, Sample Plot SP3. Soil log hole. April 16, 2014.

Wetland K-D, Sample Plot SP3. Soils. April 16, 2014.

Wetland K-D. Sample Plot SP-KD1 View northeast from railroad embankment. June 4, 2019.

Wetland K-D. Sample Plot SP-KD1. Soil Log Hole. June 4, 2019.

Wetland K-DD. Sample Plot SP-KDD1. Vegetation. June 4, 2019.

Wetland K-DD. Sample Plot SP-KDD1. Soil log hole. June 4, 2019.

Wetland K-E. Overview looking west. August 21, 2015.

Wetland K-E. Representative vegetation. August 21, 2015.

Wetland K-E, Sample Plot SP-KE1. Hydrology. October 22, 2017.

Wetland K-F. Overview looking east. August 21, 2015.

Wetland K-F. Representative PFO vegetation. October 22, 2017.

Wetland K-F, Sample Plot SP5. Soil log hole. April 17, 2014.

Wetland K-F, Sample Plot SP5. Soils. April 17, 2014.

Wetland K-F. Trashrack in wetland. August 21, 2015.

Wetland K-G. Overview and representative vegetation. View east. August 21, 2015.

Wetland K-G, Sample Plot SP7. Soils. April 17, 2014.

Wetland K-G, Sample Plot SP7. Hydrology. April 17, 2014.

Wetland K-G. Sample Plot SP-KG2. Vegetation. June 4, 2019.

Wetland K-G. Sample Plot SP-KG2. Soil log hole. June 4, 2019.

Wetland K-H. Overview. View southeast. August 21, 2015.

Wetland K-H. Representative PEM vegetation. August 21, 2015.

Wetland K-H, Sample Plot SP8. Soil log hole. April 17, 2014.

Wetland K-H. Overview. View southwest. June 4, 2019.

Wetland K-J. Overview. View northwest. August 21, 2015.

Wetland K-J. Representative vegetation near trail. August 21, 2015.

Wetland K-J, Sample Plot SP9, soils. April 17, 2014.

Wetland K-J, Sample Plot SP-KJ1. Soil log hole. October 24, 2017.

Wetland K-J, Sample Plot SP-KJ1. Soils. October 24, 2017.

Stream K-3. View east. October 20, 2017.

Stream K-3. View west. October 20, 2017.

Wetland K-K. Overview showing unchannelized standing water. View south. August 21, 2015.

Wetland K-K. Vegetation along trail. View west. August 21, 2015.

Wetland K-K, Sample Plot SP-KK1. Soil log hole and soils. October 24, 2017.

Wetland K-K, Sample Plot SP-KK1. Soils. October 24, 2017.

Wetland K-K. Sample Plot SP-KK4. Vegetation. June 4, 2019.

Wetland K-K. Sample Plot SP-KK4. Soil log hole June 4, 2019.

Wetland K-L. View south along transmission line. August 21, 2015.

Wetland K-L, Sample Plot T1-SP2. Soil log hole. June 6, 2014.

Wetland K-L, Sample Plot T2-SP2. Soil log hole. June 6, 2014.

Stream K-5. View east from project corridor. August 21, 2015.

Stream K-5. View west from project corridor. August 21, 2015.

Wetland K-L. Sample Plot KL-SP2. Vegetation. June 20, 2019.

Wetland K-L. Sample Plot KL-SP2. Soil log hole. June 20, 2019.

Wetland K-L. Sample Plot KL-SP3. Vegetation. June 20, 2019.

Wetland K-L. Sample Plot KL-SP3. Soil log hole. June 20, 2019.

Stream K-5. North segment. View downstream. June 29, 2019.

Stream K-5. North segment. View upstream. June 29, 2019.

Wetland K-HF. Representative vegetation in study area. June 20, 2019.

Wetland K-HF. Sample Plot HF-SP1. Vegetation. June 20, 2019.

Wetland K-HF. Sample plot HF-SP1. Soil log hole. June 20, 2019.

Appendix B

Field Data Forms

City of Redmond

Field Data Forms

Upland near R-A

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

Project/Site: PSE Substation North Arm City/County: Redmond / King Sampling Date: 10-4-2014

Applicant/Owner: PSE State: WA Sampling Point: T1-SP1

Investigator(s): Linda Howard, Ashley Lunde Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): convex Slope (%): 0

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:
T-1 SP-1 is near a pin tree.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Bitter Cherry	15%	N	FACU
2. Red Alder	50%	Y	FAC
3. Black Cottonwood (P. balsamifera ssp. trichocarpa)	20%	Y	FAC
4.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 10 ft)			
1. Pacific Ninebark	25%	Y	FAC
2. Oregon Grape	15%	N	NL
3. Snowberry	15%	N	FACU
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 10 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	

Woody Vine Stratum (Plot size: 10 ft.)			
1. Trailing Blackberry (Rubus ursinus)	90%	Y	FACU
2.			
		= Total Cover	

% Bare Ground in Herb Stratum Ground beneath trailing blackberry completely bare ground.

Remarks:

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (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:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? ✓ Yes _____ No _____

SOIL

Sampling Point: T-1 SP-1

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
0-12	7.5YR 3/3	100					Gravelly loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

T-1 SP-1 is in dry berm between adjacent parking lot and stream vegetated

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

R-A

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

Project/Site: PSE Substation North Arm City/County: Redmond / King Sampling Date: 6-4-2014

Applicant/Owner: PSE State: WA Sampling Point: TI - SP2

Investigator(s): Linda Howard, Ashley Lunde Section, Township, Range:

Landform (hillslope, terrace, etc.): stream valley Local relief (concave, convex, none): convex 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: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Red alder	50	Y	FAC
2. ~~Pacific willow (S. lucida lasiandra)~~	~~20~~	~~Y~~	~~FACW~~
3. Pacific willow (S. lucida lasiandra)	15	N	FACW
4. Sitka willow	40	Y	FACW
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 10')			
1. Salmonberry	10	Y	FACW
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size:)			
1. Agrostis gigantea	100	yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		

Woody Vine Stratum (Plot size: 10')			
1. Rubus laciniatus	50	Y	FACU
2. ~~Rubus ursinus~~	~~2~~	~~N~~	~~FACU~~
	= Total Cover		

% Bare Ground in Herb Stratum none

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (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:

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

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

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

SOIL

Sampling Point: 6-4-2014

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
0-18	5Y 2.5/1	100					mucky	very smooth, greasy, no sand/gravel when rubbed between fingers or fibers

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ✓ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): n/a

Water Table Present? Yes ✓ No _____ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0" surface

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

upland near R-A

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

Project/Site: PSE Substation North Arm City/County: Redmond / King Sampling Date: 6-4-2014

Applicant/Owner: PSE State: _____ Sampling Point: TI-SP3

Investigator(s): Linda Howard, Ashley Lunde Section, Township, Range: _____

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

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

Soil Map Unit Name: _____ NWI classification: _____

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

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

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

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**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: 10')			
1. Salmonberry	100	Y	FACW
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Fringe cup	2% Trace	Y	NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 98%

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	100	x 2 =	200
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	2	x 5 =	10
Column Totals:	102 (A)		210 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

___ 1 - ~~Rapid Test for Hydrophytic Vegetation~~

___ 2 - ~~Dominance Test is >50%~~

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: T1 -SP3

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
0-20	7.5YR 3/1	100					Sandy loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Soil has no structure, seems to be fill top soil no underlying depleted matrix

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

Upland near R-A

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

Project/Site: PSE Substation North Arm City/County: Redmond/King Sampling Date: 6-4-2014
Applicant/Owner: PSE State: WA Sampling Point: T2-SP1
Investigator(s): Linda Howard, Ashley Lunda Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	No ✓	**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. Birch (Betula papyrifera)	50	Y	FACW
2. Red Alder	50	Y	FAC
3. ~~Bitter cherry~~			
4.			
= Total Cover			

Sapling/Shrub Stratum (Plot size:)			
1. Oceanspray	20	Y	FACU
2. Pacific dogwood	20	Y	FACU
3. Birch Saplings	50	Y	FAC
4. Bitter cherry	10	N	FAC
5. Snowberry	10	N	FACW
= Total Cover			

Herb Stratum (Plot size:)			
1. ~~Fescue~~	trace	N	
2. Equisetum ~~sp~~ arvense	trace	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover			

Woody Vine Stratum (Plot size:)			
1. Rubus (R. discolor)	30	Y	FACU
2.			
= Total Cover			

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	30	x 2 =	60
FAC species	50	x 3 =	150
FACU species	133	x 4 =	532
UPL species		x 5 =	
Column Totals:	213 (A)		742 (B)

Prevalence Index = B/A = 3.48

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation ND
__ 2 - Dominance Test is >50% ND
__ 3 - Prevalence Index is ≤3.0[1] ND
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet) ND
__ 5 - Wetland Non-Vascular Plants[1] ND
__ Problematic Hydrophytic Vegetation[1] (Explain) ND
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No ✓

Remarks:

SOIL

Sampling Point: T2-SP1

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
0-13	7.5YR 3/2	100					sandy gravelly loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: Soil has no structure and appears to be fill material

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

R-A

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

Project/Site: PSE Substation North Arm City/County: Redmond/King Sampling Date: 6-4-2014
Applicant/Owner: PSE State: WA Sampling Point: T2-SP2
Investigator(s): Linda Hayward / Ashley Lemke Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: Data plot located in stream valley on N edge at base of multistem alder. in PH/ patch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Red alder	25	Y	FAC
2.			
3.			
4.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size:)			
1. Salmonberry	10	Y	FACW
2. Red osier dogwood	10	Y	FACW
3. Pacific ninebark	10	Y	FACW
4. ~~Birch~~ Betula	5	Y	FACW
5. ~~Oemleria cerasiformis~~ (Indian plum) Hooker willow	15 10		
	= Total Cover		

Herb Stratum (Plot size:)			
1. PHAR	100	Y	FACW
2. Carpus microcarpus	50	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 85 (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:
___ 1 - Rapid Test for Hydrophytic Vegetation
✓ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes Y No

Remarks:

SOIL

Sampling Point: T2-SP2

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
0-18	2.5Y 2.5/1		5YR 4/6				smooth when rubbed btwn fingers	
							small (1-2") cobbles at 16"	
0-2	sand w/ 10% redox concentrations							

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ✓ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes ✓ No ___ Depth (inches): 16"

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:

Upland near R-A

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

Project/Site: PSE Substation North Arm City/County: Redmond / King Sampling Date: 6-4-2014

Applicant/Owner: PSE State: WA Sampling Point: T2-SP3

Investigator(s): Linda Howard, Ashley Lunde Section, Township, Range: _____

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

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

Soil Map Unit Name: _____ NWI classification: _____

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

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

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

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**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. Twinberry	90	Y	FAC
2. COSE	40	Y	FACW
3. SARA	20	Y	FACW
4. Snowberry	40	Y	FACU
5. RuSp	5	N	FAC
	= Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. RUAR	40	Y	FACW
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	90	x 3 =	270
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	230 (A)		750 (B)

Prevalence Index = B/A = 3.26

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: T2-SP3

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
0-12	7.5YR2.5/2	100					sandy gravelly loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Upland near R-B

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

Project/Site: Sammamish Substation North "arm" City/County: Redmond Sampling Date: 5/19/14

Applicant/Owner: PSE State: WA Sampling Point: T35PH

Investigator(s): KA/GM Section, Township, Range:

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Slope (%): 5

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 X No (If no, explain in Remarks.)

Are Vegetation , Soil X, 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 X	No	
Hydric Soil Present?	Yes X	No	Is the Sampled Area within a Wetland? Yes No X
Wetland Hydrology Present?	Yes	No X	

Remarks:
Just upslope of created detention pond. No hydrology.

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. Scotch broom	7	Y	NI
2. Populus balsamifera ssp. trichocarpa	3	N	FAC
3. Rosa sp.	2	N	
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. Holcus lanatus	30	Y	FAC
2. red fescue	30	Y	FAC
3. Agrostis sp.	30	Y	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1. Himalayan blackberry	5	N	FACU
2.			
	107 = Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (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:

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

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

Hydrophytic Vegetation Present? Yes X No

Remarks:
Hydric vegetation, but borderline.

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
0-6	10YR 3/2	100					Si. H loam	
6-18	10YR 5/1	70	10YR 3/4	5	C	M	loamy sand	25% rock

[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)
- X 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No saturation or water table.

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

Project/Site: Wetland RB City/County: Redmond/King Sampling Date: 6/4/19
Applicant/Owner: PSE State: WA Sampling Point: SP-1
Investigator(s): Hamidi/Brownell Section, Township, Range:
Landform (hillslope, terrace, etc.): embankment Local relief (concave, convex, none): Convex Slope (%): 30%
Subregion (LRR): A Lat: Long: Datum:
Soil Map Unit Name: InA Indianola loamy sand, 0-5% slopes NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Photos 192-194 Below normal precip

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula papyrifera	60%	Y	FAC
2.			
3.			
4.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2. Alnus rubra	15%	Y	FAC
3. Rubus armeniacus	5%	Y	FAC
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5 ft)			
1. Stinky bob Geranium robertianum	60%	Y	FACU
2. phalaris arundinacea	5%	N	FACW
3. red fescue festuca rubra	1%	N	
4. Oemlaria cerasiformis	1%	N	FACU
5. unknown forb	1%	N	
6. Berberis nervosa	1%	N	FACU
7.			
8.			
9.			
10.			
11.			
	= Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (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:
- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP-1

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
0-4	10YR 3/2.5	100					loam	
4-18	10YR 4/3	100					Sandy loam	10% gravel

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

Fill embankment

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

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

Project/Site: Wetland RB Sammamish-Issaquah City/County: Redmond / King Sampling Date: 6/4/19

Applicant/Owner: PSE State: WA Sampling Point: SP-2

Investigator(s): Hamidi + Brownell Section, Township, Range:

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

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

Soil Map Unit Name: INA Indianola LS, 0-5% slopes NWI classification: PFO / PEMC

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Photos 195-199 + 200 Precip below normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiandra	80%	Y	FACW
2.			
3.			
4.			
	80 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Salix lasiandra	5%	Y	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. ~~Polygonum hydropiper water smartweed~~	10%	N	
2. Phalaris arundinacea	70%	Y	FACW
3. Carex obnupta	5%	N	OBL
4.			
5. Persicaria hydropiper	10%	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 15

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:

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

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

Hydrophytic Vegetation Present? Yes Y No ____

Remarks: Eleocharis palustris present outside plot
Juncus effusus outside plot

SOIL

Sampling Point: SP-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
0-5	10YR 3/1	100					Silt loam	
5-11	10YR 4/2	95	10YR 4/4	5%			Sandy loam	10% gravel
11-18	2.5Y 5/1.5	65%	10YR 4/4	30%	C	PL and M	Sandy loam	
			10YR 4/6		C	PL and M		
			2.5Y 5/1	5%	D	M		

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X No _____

Remarks:

3 inch leaf litter layer

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

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

Project/Site: Wetland R-B City/County: Redmond/King Sampling Date: 6/4/19

Applicant/Owner: PSE State: WA Sampling Point: SP-3

Investigator(s): Hamidi + Brownell Section, Township, Range:

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 0-1

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

Soil Map Unit Name: #3 INA Indianola LS, 0-5% NWI classification: PEMIC

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Photos 201-203

Precip below Normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiandra	10%	Y	FACW
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. Cornus sericea	10%	Y	FACW
2. Salix sitchensis	10%	Y	FACW
3. Salix lasiandra	10%	Y	FACW
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5)			
1. Eleocharis palustris	50%	Y	OBL
2. Rubus armeniacus	10%	N	FAC
3. Phalaris arundinacea	20%	Y	FACW
4. Rumex crispus	1%	N	FAC
5. Carex obnupta	5%	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 30%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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:

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

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

Hydrophytic Vegetation Present? Yes Y No ____

Remarks:

SOIL

Sampling Point: SP-3

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
0-5	10YR 3/2	100					Sandy loam	
5-11	2.5Y 4/2	82	7.5YR 4/6	15	C	M	Sandy loam	
~~11-16~~			2.5Y 5/1	3	D	M		
~~16-18~~								
11-16	10YR 4/3	85	10YR 4/4	15	C	M	Sandy loam	
16-18	2.5Y 4/2	85	10YR 4/6 2.5Y 5/6	15 3	C D	M	loamy fine sand	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X 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)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

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

Project/Site: Wetland R-B City/County: Redmond Sampling Date: 6/10/19

Applicant/Owner: PSE State: WA Sampling Point: SP-4

Investigator(s): Brownell + Hamidi Section, Township, Range:

Landform (hillslope, terrace, etc.): Constructed embankment Local relief (concave, convex, none): Convex Slope (%): 30

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

Soil Map Unit Name: INA Indianola LS, 0-5% slopes NWI classification: Upland

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

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Photo 204 Precip below normal

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. Holodiscus discolor	5	N	FACU
2. Cornus sericea	~~40~~	N	FACW
3.			
4.			
5.			
	90 = Total Cover		
Herb Stratum (Plot size: 10)			
1. Rubus armeniacus	~~35~~ 15%	Y	FAC
2. Phalaris arundinacea	10%	Y	FACW
3. ~~Elaeagnus pungens~~	~~5%~~		~~FACU~~
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (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:

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					gravelly	sandy loam
6-12	10YR 4/3	100					gravelly	loamy sand

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

fill embankment near transmission tower

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Project/Site: Sammamish to Issaquah City/County: Redmond Sampling Date: 6-28-11
Applicant/Owner: PSE State: WA Sampling Point: SP-B1
Investigator(s): Hamidi, MRJG Section, Township, Range:
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR): A Lat: Long: Datum:
Soil Map Unit Name: Indianola loamy sand, 0-5% slopes NWI classification: PEMC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil X, 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 X No	Is the Sampled Area within a Wetland? Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:
Photos 2354-2358 IN Wetland R-E (South End) north Bndry)

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Rubus armeniacus	3		FAC
2.			
3.			
4.			
5.			
	3 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	60	Yes	FACW
2. Alopecurus pratensis	20		FACW
3. Agropyron (repens)	20		
4. Cirsium arvense	1		FAC
5. Galium sp.			
6. Holcus lanatus	5		FAC
7. Poa sp.	3		
8. Equisetum telmateia	1		FACW
9.			
10.			
11.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

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

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

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: SP-B1

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
0-16	10YR 3/1	98	10YR 3/2	2	C	M	SL	
16-20	2.5Y 4/2	95	10YR 4/3	5	C	M/PL	SL+LS	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- X Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: NONE

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

Problem Soils; deep dark surface masks Redox
Soil compared to upland pit >OM, some Redox

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

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

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Water observed in spring 2015
Soil is moist, soil at 20" slight glistening

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

Project/Site: SAMMAMISH – JUANITA City/County: REDMOND Sampling Date: 6.28.16

Applicant/Owner: PSE State: _____ Sampling Point: SP-B2

Investigator(s): P.H G.M. Section, Township, Range: _____

Landform (hillslope, terrace, etc.): A Local relief (concave, convex, none): CONVEX Slope (%): 5

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

Soil Map Unit Name: INDIANOLA LOAMY SAND, 0-5% SLOPES NWI classification: UPLAND

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 X 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 X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: upland plot paired with SP-B1 89-92 Upland Point for Wetland R-E (south end) (north boundary)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Schedonorus phoenix (arundinaceus)	40	Y	FAC
2. Agrostis capillaris	30	Y	FAC
3. Galium aparine	10	N	FACU
4. Equisetum arvense	10	N	FAC
5. Cirsium arvense	10	N	FAC
6. Agropyron repens = Elymus	10	N	FAC
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (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:

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

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: grassy field

SOIL

Sampling Point: SP-B2

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
0-13	10YR3/2	100	-	-	-	-	Loamy Sand	no redox
13-18	10YR3/2	100	-	-	-	-	Sandy Loam	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

Dry friable sand, no moisture, added water to get color

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No wetland Hydrology. plot Dry no moisture friable.

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

Project/Site: Sammamish to Jackwitz City/County: Redmond Sampling Date: 6-28-16
Applicant/Owner: PSE State: WA Sampling Point: SP-B3
Investigator(s): Hamidi Section, Township, Range:
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRR): A Lat: Long: Datum:
Soil Map Unit Name: Alderwood gr. Sandy Loam NWI classification: PEMF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Photos 2359 to 2363 IN Wetland as Wetland B R-E (South end, South boundary)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	100	Yes	FACW
2. Vicia sp.	1		
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	100 = Total Cover		

% Bare Ground in Herb Stratum 0

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:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP-B3

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
0-14	10YR 2/1	100	—	—	—	—	Loam	high OM content
14-20	2.5Y 5/1	85	10YR 4/4	15	C	M	SiCL	

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0-14"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

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

Project/Site: Sammamish – Juanita City/County: REDMOND Sampling Date: 6.28.16
Applicant/Owner: PSE State: WA Sampling Point: SP-B4
Investigator(s): P.H. G.M Section, Township, Range:
Landform (hillslope, terrace, etc.): Railroad Slope Local relief (concave, convex, none): none Slope (%): 5-10
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: Alderwood gr. sandy loam NWI classification: upland
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 X 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 X No ____
Hydric Soil Present? Yes ____ No ____
Wetland Hydrology Present? Yes ____ No X
Is the Sampled Area within a Wetland? Yes ____ No X

Remarks: UPLAND PLOT upland Point for Wetland R-E (South end, south boundary)

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: 30)			
1. Rubus armeniacus	10	Y	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Phalaris arundinacea	50	Y	FACW
2. Equisetum arvense	10	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 1.00 (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:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: reed canarygrass patch on side of trail.

SOIL

Sampling Point: SP-B4

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
0-4	—	—	—	—	—	—		Thick veg PHAR
4-18	10YR 3/2	70	10YR 4/6	1	C	M	silt loam	faint redox

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks: 30% rock/fill, thicke 4" matt of PHAR faint redox

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks: No wetland hydrology - soils dry & friable.

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

Project/Site: Sammamish to Juanita City/County: Redmond Sampling Date: 6-29-16
Applicant/Owner: PSE State: WA Sampling Point: SP-D1
Investigator(s): Hamidi Section, Township, Range:
Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR): A Lat: Long: Datum:
Soil Map Unit Name: Alderwood gr. Sandy Loam NWI classification: PEMF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:
Photos 2364-2369 In wetland R-D

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	100	Yes	FACW
2. Cirsium arvense	1		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

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:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP-D1

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
2-0							Litter/	Root matt
0-6	10YR 3/1	100	-	-	-	-	SiL	high OM
6-17	10YR 3/1	95	10YR 4/3	5	C	M	SiL	
17-24	10YR 3/2	90	10YR 4/3	10	C	M	SiL	layers of diatomaceous earth 10YR 5/2

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: None

Depth (inches): ___

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 23

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 20

Wetland Hydrology Present? Yes X No ___

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

Remarks:

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

Project/Site: SAMMAMISH - JUANITA City/County: REDMOND Sampling Date: 6.29.16
Applicant/Owner: PSE State: WA Sampling Point: SP-D2
Investigator(s): P.H. 6.M Section, Township, Range:
Landform (hillslope, terrace, etc.): RR embankment Local relief (concave, convex, none): none Slope (%): 10
Subregion (LRR): A Lat: Long: Datum:
Soil Map Unit Name: Alderwood gr. Sandy Loam NWI classification: upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No
Hydric Soil Present? Yes No X
Wetland Hydrology Present? Yes No X
Is the Sampled Area within a Wetland? Yes No X

Remarks: Plot taken on slope of rail or embankment converted to trail
96-99 near DL3 upland Point for wetland R-D

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: 30)			
1. Betula sp	10	Y	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	70	Y	FACW
2. Equisetum arvense	40	Y	FAC
3. Poa pratensis	20	N	FACW
4. Cirsium arvense	20	N	FAC
5. Vicia sp	10	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	160 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

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:
__ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: SP-D2

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
0-3	—	—	—	—	—	—	—	fill/rock: roots
3-18	10YR 3/2	70	—	—	—	—	silt loam	no redox 30% rock

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:
No Hydric indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks: No wetland hydrology. Soils dry friable

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

Project/Site: Sammamish to Juanita City/County: Redmond Sampling Date: 6-29-16
Applicant/Owner: PSE State: WA Sampling Point: SP-F1
Investigator(s): Hamidi Section, Township, Range:
Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR): A Lat: Long: Datum:
Soil Map Unit Name: Indianola Loamy Sand, 0-5% Slopes NWI classification: PEMF
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No
Hydric Soil Present? Yes X No
Wetland Hydrology Present? Yes X No
Is the Sampled Area within a Wetland? Yes X No

Remarks:
Photos 2370 to 2375 In wetland R-C

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. [illegible]			[illegible]
2. [illegible]			[illegible]
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	70	Yes	FACW
2. Solanum dulcamara	50	Yes	FAC
3. Urtica dioica	3		FAC
4. Equisetum telmateia	10		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	133 = Total Cover		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (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:
- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No

Remarks:

SOIL

Sampling Point: SP-F1

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10yR 3/1	100	—	—	—	—	SiL	
2-8	10yR 3/2 & 4/2	50/50	—	—	—	—	Si L + LS	Sandy Sediment Mixed w/ native soil
8-18	10YR 2/1	100	—	—	—	—	MUCK	

[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)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ 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) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes X No ___

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

Remarks:

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

Project/Site: SAMMAMISH - JUANITA City/County: REDMOND Sampling Date: 6.29.16

Applicant/Owner: PSE State: WA Sampling Point: SP-F2

Investigator(s): P.H. SM Section, Township, Range:

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): none Slope (%): 20

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

Soil Map Unit Name: Indianola loamy sand, 0-5% slope NWI classification: Upland

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

Remarks: upland plot on slope - trail embankment
upland Point for wetland R-C

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5)			
1. Phalaris arundinacea	60	Y	FACW
2. Equisetum arvense	30	Y	FAC
3. Cirsium arvense	20	N	FAC
4. Galium aparine	20	N	FAC
5. Veronica sp	20	N	FAC*
6. Holcus lanatus	10	N	FAC
7. Solanum dulcamara	5	N	FAC
8.			
9.			
10.			
11.			
87.5 / 39	195 = Total Cover		
Woody Vine Stratum[1] (Plot size: ____)			
1.			
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (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:

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

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

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: SP-D F2

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
0-2							Rock Fill	roots
2-18	10YR 3/2	70	—	—	—	—		30% fill no redox

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

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

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 X

Remarks:

No Hydric indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

No wetland hydrology - soils dry friable

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

Project/Site: PSE Redmond along Willows Rd City/County: Redmond Sampling Date: 6/15/2019

Applicant/Owner: PSE State: WA Sampling Point: SP-Upland Swale

Investigator(s): SD Brooks, Paul Hammitt Section, Township, Range:

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

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

Soil Map Unit Name: INA Indianola loamy sand, 0-5% slopes NWI classification: Upland

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: Precip is below normal

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. Rubus bracteatus	10	Y	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Rosa Phalaris arundinacea	100	Y	FACW
2. Equisetum telmateia	50	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% 75 20%	150 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		
% Bare Ground in Herb Stratum 0			

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:

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

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

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Photo # = 239-241