Pierce County
Grant No. G1100137

LARCHMONT WETLAND RESERVE

Final Wetland Delineation and Assessment Report, Sub-Task 3.1

Prepared for:
Pierce County Public Works & Utilities
Surface Water Management

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SUMMARY

At the request of the Surface Water Management Division of Pierce County Public Works and Utilities (Pierce County SWM), ESA Adolfson (ESA) performed a wetland study for the Larchmont Wetland Reserve Project. All rights-of-entry to the subject properties for the purpose of conducting this study were granted and/or obtained by Pierce County (County).

Pierce County SWM proposes to create a Wetland Reserve, to be included in the Puget Sound Partnership (PSP) Pilot In-Lieu-Fee (ILF) Mitigation Program, a program to provide advance compensation for impacts to freshwater wetland resources. This work is being funded by a Department of Ecology grant (No. G1100137). PSP and the Department of Ecology (Ecology) selected the Larchmont Wetland Reserve site in the Chambers-Clover watershed (WRIA12) because of its proximity to other wetland reserve sites (i.e., the South Midland Wetland Reserve) and the potential for improving water quality, reducing flood elevations, and providing habitat. According to PSP and Ecology's *Decision Document*, "rehabilitation of the Larchmont Wetland Reserve site, in combination with the already constructed South Midland Wetland Reserve site, will provide a more system-wide approach to restoring and protecting the watershed functions of Clover Creek" (PSP, 2010).

The Larchmont Wetland Reserve is an undeveloped site comprised of several parcels (approximately 16 acres total) which are owned by the County and by private owners. The site is located in unincorporated Pierce County, and is bordered by 96th St. E to the south, E McKinley Ave. to the west, 9th Ave Ct. E to the east, and 91st St. E to the north.

ESA identified and delineated approximately 12.2 acres of wetland (Wetland A and associated Wetland Ditches AA, AB, and AC) within the study area boundaries. Furthermore, ESA identified a stream network composed of drainage ditches. Wetlands in the study area are classified as depressional with riverine components associated with the on-site stream network. The most prevalent habitat type is palustrine scrub-shrub, followed by palustrine forested and emergent habitats.

According to the Pierce County and Washington State Department of Ecology wetland rating systems, Wetland A and Wetland Ditches AA, AB, and AC are considered to be Category II wetlands.

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1.0 PROJECT AUTHORIZATION AND SCOPE OF WORK

At the request of the Surface Water Management Division of Pierce County Public Works and Utilities, ESA Adolfson (ESA) performed a wetland study for the Larchmont Wetland Reserve Project. All rights-of-entry to the subject properties for the purpose of conducting this study were granted and/or obtained by Pierce County (County).

The Scope of Work for this project included a wetland delineation, categorization, and a technical report discussing the results of the field studies as well as the regulatory context for the site (i.e., wetland rating, categorization, and required buffers). This report briefly discusses streams on and adjacent to the site, but does not include stream ordinary high water mark (OHWM) delineation or a fish and wildlife habitat assessment. This report also does not address project impacts or conceptual mitigation.

2.0 SITE DESCRIPTION

The Larchmont Wetland Reserve is an undeveloped site comprised of several parcels (approximately 16 acres total) which are owned by the County and by private owners. The site is located in unincorporated Pierce County, and is bordered by 96th St. E to the south, E McKinley Ave. to the west, 9th Ave Ct. E to the east, and 91st St. E to the north (Figure 1). Shrub and forest habitats dominate the relatively flat site, with smaller portions of lawn and pasture adjacent to residential developments that surround the project area.

3.0 PROJECT DESCRIPTION

Pierce County SWM proposes to create a Wetland Reserve, to be included in the Puget Sound Partnership (PSP) Pilot In-Lieu-Fee (ILF) Mitigation Program, a program to provide advance compensation for impacts to freshwater wetland resources. This work is being funded by a Department of Ecology grant (No. G1100137). PSP and the Department of Ecology (Ecology) selected the Larchmont Wetland Reserve site in the Chambers-Clover watershed (WRIA12) because of its proximity to other wetland reserve sites (i.e., the South Midland Wetland Reserve) and the potential for improving water quality, reducing flood elevations, and providing habitat. According to PSP and Ecology's *Decision Document*, "rehabilitation of the Larchmont Wetland Reserve site, in combination with the already constructed South Midland Wetland Reserve site, will provide a more system-wide approach to restoring and protecting the watershed functions of Clover Creek" (PSP, 2010).

4.0 WETLAND DEFINITION AND REGULATIONS

The characteristics of an area that result in its classification as "wetland" have been formally defined by federal and state agencies, as described in Appendix A. Numerous federal, state, and local regulations govern development and other activities in or near wetlands; at each level, there are typically several agencies charged with such powers. Specific regulatory implications concerning the subject property are summarized later in this report.

5.0 METHODS

Two levels of investigation were conducted for the analysis of wetlands in the study area: a review of existing information and an on-site investigation.

5.1 Review of Existing Information

ESA reviewed existing literature, maps, and other materials to identify streams, wetlands, or site characteristics indicative of wetlands on the subject property. These sources can only indicate the likelihood of the presence of wetlands; actual wetland determinations must be based upon data obtained from field investigations.
Several documents were reviewed:

- *Soil Survey of Pierce County Area, Washington* (NRCS, 1979; updated 2008);
- National Wetland Inventory mapping (USFWS, 2010);
- Pierce County wetland and stream inventory (Pierce County, 2008);
- Washington Department of Fish and Wildlife mapping of priority habitats and species (WDFW, 2010); and
- Washington Department of Natural Resources mapping of rare plant communities (WDNR, 2010).

5.2 On-site Investigation

5.2.1 Determining the Presence of Wetlands and Delineating Wetland Boundaries

Methods defined in the *Washington State Wetlands Identification and Delineation Manual* (Ecology, 1997) were used to determine the presence and extent of wetlands in the study area. Washington state and all local governments must use the state delineation manual to implement the Shoreline Management Act and/or the local regulations adopted pursuant to the Growth Management Act.

The Washington state manual is consistent with the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987). The Corps has been working with states, federal agencies, and others to develop supplemental regional criteria to refine the 1987 delineation manual. Two regions fall within the state of Washington: The Arid West (dry lands west of the Continental Divide, from Idaho and eastern Washington south to the U.S. - Mexico border) and the Western Mountains, Valleys, and Coast. Regional Supplements to the Corps of Engineers 1987 Wetlands Delineation Manual have been completed by the Corps for both regions in Washington, and the appropriate supplement is now used, along with the Washington State Delineation Manual, when conducting delineations in those regions (Corps, 2010).

The methodology outlined in the manuals is based upon three essential characteristics of wetlands: (1) hydrophytic vegetation; (2) hydric soils; and (3) wetland hydrology. Field indicators of these three characteristics must all be present in order to determine that an area is a

wetland (unless problem areas or atypical situations are encountered). The "routine on-site determination method" was used to determine the wetland boundaries.

Formal data plots were established where information regarding each of the three wetland parameters (vegetation, soils, and hydrology) was recorded. This information was used to distinguish wetlands from non-wetlands. Where wetlands were determined to be present on the subject property, the wetland boundaries were delineated. Wetland boundaries were identified with sequentially numbered pink colored flagging imprinted with the words WETLAND BOUNDARY. Data plot locations were also marked with orange colored flagging.

The methods used to assess wetland characteristics are described in greater detail in Appendix A. Please note that common plant names are used throughout this text; the scientific names are presented in Appendix B.

5.2.2 Classifying Wetlands

Two classification systems are commonly used to describe wetlands. The hydrogeomorphic (HGM) system describes wetlands in terms of their position in the landscape and the movement of water in the wetland (Brinson, 1993). The U.S. Fish and Wildlife Service classification system (Cowardin et al., 1979) describes wetlands in terms of their vegetation communities; these include, for example, emergent, scrub-shrub, and forested community types.

Section 7.0 discusses wetland classification, rating, and categorization for the site based on PCC requirements.

5.2.3 Assessing Wetland Functions

Wetlands and buffers play important roles that provide valuable benefits to the environment and society. Because detailed scientific knowledge of wetland functions is limited, evaluations of the functions of individual wetlands are somewhat qualitative and dependent upon professional judgment.

For this project, wetland functions were assessed using the Washington State Department of Ecology's *Wetland Rating System for Western Washington* (Hruby, 2004; updated 2008). Although this system is designed to rate wetlands, it is based on whether a particular wetland performs a particular function and the relative level to which the function is performed. An assessment of wetland functions is inherent in the rating system. This system was developed by Ecology to differentiate wetlands based on their sensitivity to disturbance, their significance, their rarity, our ability to replace them, and the beneficial functions they provide to society. Appendix C provides additional information about the rating system wetland categories and completed rating forms for the project.

6.0 FINDINGS

6.1 Existing Information

6.1.1 Soils

The Natural Resources Conservation Service (NRCS) maps soils in the study area as Dupont Muck (Map Unit 12A) and Kapowsin gravelly loam, zero to 6 percent slopes (Map Unit 19B) (Figure 2). The *Pierce County Soil Survey* describes Dupont muck as a poorly drained, organic soil formed from decomposing shrubs, sedges, grasses, and diatomaceous earth. A typical profile has a surface layer of black muck to a depth of 13 inches, with either a continuation of organic soil or a mineral layer found below. The NRCS lists Dupont Muck as a hydric soil (NRCS, 1979; updated 2008). Dupont muck is mapped throughout the majority of the site (Figure 2).

The *Pierce County Soil Survey* describes Kapowsin gravelly loam, zero to 6 percent slopes as a moderately well-drained soil formed in glacial till under conifers. This soil dominates the uplands in the Midland-Parkland area. A typical profile consists of a dark brown gravelly loam surface layer to a depth of 7 inches, with a dark brown or dark yellowish brown gravelly loam and brown loam to a depth of approximately 25 inches (NRCS, 1979; updated 2006). Kapowsin gravelly loam, zero to 6 percent slopes is mapped in the northeast corner of the project area (Figure 2).

6.1.2 Wetland and Stream Inventory

Pierce County and the National Wetland Inventory map a palustrine forested and scrub-shrub wetland on a majority of the site (Figure 3). The palustrine forested wetland dominates the northern third of the project area, while the palustrine scrub-shrub wetland dominates the southern two-thirds of the project area (USFWS, 2010; Pierce County, 2008).

The project area is located within the Clover-Chambers watershed (WRIA 12). Pierce County maps a stream starting near the center of the site, flowing south to Clover Creek and the South Midland Wetland Reserve Site (Pierce County, 2008).

6.1.3 Priority Habitats and Species

The WDFW priority habitats and species (PHS) database maps wetland habitat in approximately the same location as the NWI and Pierce County wetland inventories. WDFW mapping did not show any priority wildlife species occurring on or within one half-mile of the site (WDFW, 2010). The WDFW maps the presence of Coho salmon and cutthroat trout in the stream on-site (WDFW, 2010).

6.2 Field Investigation

The following sections describe the results of the field investigation conducted by ESA scientists Laura Brock, Michael Muscari, Adam Merrill, Aaron Booy, and Rosemary Baker on September 14, 16, 22, and 23, 2010. These sections describe the wetland and upland habitat and briefly discuss streams identified on the project site. The scope of work for this project does not include a Fish and Wildlife Habitat Assessment.

ESA identified and delineated Wetland A and associated Wetland Ditches AA, AB, and AC within the study area boundaries (Figures 4 and 5). Pierce County surveyed the wetland boundary flags and data plot locations. Eighteen data plots were established within relatively uniform areas of vegetation on the site. Data sheets for each of the formal data plots evaluated for this project are provided in Appendix D. Furthermore, ESA identified a network of ditches on-site. Photos of the wetland and ditch network are attached at the end of this report.

Table 1 summarizes the characteristics of the onsite wetland and associated wetland ditches. In general, the wetlands and the onsite ditch network are hydrologically connected. Surface water flows across the northern half of the site from south to north, and across the southern half of the site from north to south. Ditches are located within on-site wetlands and contribute overbank flows during flood events.

Table 1. Wetland Summary

Wetland ID	Size	HGM Class	Cowardin Class and Dominant Vegetation
Wetland A	12.2 acres	Depressional/Riverine	PFO/PSS/PEM: Oregon ash, red alder, black cottonwood, salmonberry, dogwood, Douglas' spirea, cluster rose, Pacific and Sitka willow, reed canarygrass
Wetland Ditch AA	378 sq. ft	Depressional/Riverine	PEM: reed canarygrass, yellow flag iris
Wetland Ditch AB	1,160 sq. ft.	Depressional/Riverine	PEM:creeping bent grass
Wetland Ditch AC	840 sq. ft.	Depressional/Riverine	PEM: reed canarygrass

6.2.1 Wetland A

Wetland A is a palustrine forested, scrub-shrub, and emergent (PFO/PSS/PEM) wetland which occupies the majority of the study area. The wetland extends offsite to the west of the study corridor in two locations (Figures 4 and 5). The hydrogeomorphic classification of this wetland is depressional and riverine. A network of ditches crosses the wetland in several locations. Wetland Ditches AA, AB, and AC are located along the project area perimeter. These wetland ditches are hydrologically connected to the main portion of Wetland A via culverts under residential driveways. Data Plots (DP) 1 through 5, 7, 8, 11, 12, 14, 15, and 18 represent the wetland community, and DP's 6, 9, 10, 13, 16, 17 represents the upland community adjacent to Wetland A.

6.2.1.1 Hydrology

The hydrology of Wetland A is supported by surface flows from the contributing basins that are north and east of the site and a seasonally high groundwater table (November to April). No surface inundation or soil saturation was observed for the majority of the wetland in September 2010; however, ESA staff identified other hydrology indicators, including drainage patterns, drift deposits, water stained leaves, and surface cracks on bare soils.

ESA staff also interviewed Scott McElhiney, Drainage District 19 Commissioner, for site hydrology information. Mr. McElhiney reported severe flooding problems on-site and in nearby areas during the wet season, with drainage ditches within the wetland interior and around the project area flowing nearly full throughout the season. Prior to road improvements on McKinley Avenue, Mr. McElhiney stated that the main ditch (running north to south towards the 36-inch culverts) flowed to the south into Clover Creek. Since the County improved McKinley Avenue, flow on-site is split, with much of the northern half of the site flowing to the north and eventually into the Foss Waterway and the southern half of the site flowing to the south into Clover Creek (McElhiney, personal communication 2010).

ESA visited a naturally occurring wetland site owned by WSDOT and the South Midland Wetland Reserve for reference information pertaining to hydrology. Both reference sites are approximately ½-mile to the south of the Larchmont Wetland Reserve, located to the west and east of Aqueduct Dr. East, respectively. The WSDOT site is located at relatively the same elevation as the Larchmont Wetland Reserve and is relatively undisturbed. Soil at the WSDOT site was dry throughout; furthermore, ESA observed a mix of upland species within the wetland interior, suggesting that the area experiences a seasonally fluctuating water table. ESA also observed hydrology conditions at the South Midland Wetland Reserve, which was constructed in the years 2007-2008. Construction included soil excavation, which has lowered the elevation of the site approximately two to three feet with respect to the WSDOT site across the road. To make a comparative assessment, ESA observed hydrology conditions at the edge of the wetland, away from installed sprinklers. At the wetland edge, ESA noted surface saturation occurring at eight inches below the ground surface.

Based on information from Mr. McElhiney, observations from nearby reference sites, and indirect signs of hydrology (i.e. watermarks, drift deposits, etc.), ESA has assumed wetland hydrology would be present at the Larchmont site during the wet season.

6.2.1.2 Soils

Soils sampled in Wetland A appeared to have been disturbed by past land uses, likely mowing interior areas for pasture and recreational use. In general, the soil profile within Wetland A consisted of dark brown (10 YR 2/1) organic, muck soil ranging from a depth of 10—18 inches. The lower portion of the soil profile (approximately 12 to 24 inches) was grayish brown (2.5 YR 5/2) with distinct—prominent redox concentrations (typically 7.5 YR 4/6). These soils match the NRCS description of the Dupont muck that is mapped in this area.

6.2.1.3 Vegetation

The northern portion of Wetland A contains a forested community dominated by red alder, black cottonwood, Oregon ash, Sitka willow, and Pacific willow (Figure 6). The understory is composed mainly of salmonberry, red-osier dogwood, and willow saplings. Data plots DP-4, 5, 12, 14, and 15 characterize this plant community.

The wetland interior contains a scrub-shrub community dominated by thick swaths of Sitka willow, Pacific willow, clustered rose, spirea, and Himalayan blackberry (Figure 6). ESA observed small patches of red elderberry, European hawthorne, sword fern, and Indian plum growing on small hummocks within the wetland. Data plots DP-2, 3, 7 characterize this plant community.

The southeastern portion of Wetland A contains an emergent community dominated by reed canarygrass, bentgrass, and soft rush (Figure 6). Data plots DP-1, 8, 11, and 18 characterize this plant community.

6.2.2 Wetland Functions

The wetland and ditches identified in the Larchmont Wetland Reserve project area are located close together and are hydrologically connected via surface water and groundwater during the rainy season. The vegetation communities at the edges of Wetland A and the adjacent wetland ditches are very similar. Furthermore, based on the presence of hydric soils in adjacent uplands, wetland ditches were likely once connected to Wetland A prior to development. Based on these observations, all of the wetland areas within the study area appear to function together as a system. Therefore, ESA included wetland ditches associated with Wetland A with the Wetland A rating in accordance to the guidance for rating in PCC 18.E.30.020.E. The wetland rating form is provided in Appendix C.

Wetland A received a moderate score for water quality improvement. The majority of the wetland contains organic soils that allow for the chemical processes that can remove pollutants from surface runoff. The persistent, dense vegetation in most of the wetland area also serves to slow and filter runoff. The wetlands have the opportunity to remove pollutants from runoff that comes from nearby residential developments.

The hydrologic functions of the wetlands were rated as moderate because the wetlands can store some surface flows in depressions, helping to prevent flooding downstream. The opportunity for the wetland to provide this function is present because there are large developed areas immediately upstream and downstream of the site.

This wetland system has moderate wildlife habitat functions because it provides a multi-layered forest[1] with trees (canopy and sub-canopy), shrubs, and ground cover vegetation (Figure 6; Data Plots DP-3, 4, and 5). The wetland and drainage ditches also provide riparian and aquatic habitats, and there are snags and downed wood that provide additional habitat structures. The

[1] Approximately 1.0 acre of palustrine forested vegetation with three out of five strata was mapped using GIS.

wetland rating for habitat functions is based on the entire wetland unit; however, approximately one-third to one-half of the wetland in the central and southeastern portions of the site has opportunity for habitat enhancement. These areas are dominated by reed canarygrass and Himalayan blackberry, and provide low to moderate low native plant diversity, plant structure, and habitat value. Non-native, invasive plant removal could improve the habitat value for these areas.

6.2.3 Streams and Other Aquatic Features

ESA identified the mapped stream shown on the Pierce County stream inventory (Figure 3) as the main ditch in the south central portion of the project area. A network of drainage ditches, which connect to the main ditch, was also observed through the site. ESA did not delineate the ordinary high water mark of on-site ditches; however, Pierce County surveyed the toe of slope and top of ditch, as shown on Figures 4 and 5. According to Mr. McElhiney, these ditches are maintained periodically as drainage ditches for the local Drainage District (McElhiney, 2010).

The stream channel in the main ditch averages ten feet in width. Other ditches in the northern eastern portion of the project area range from three to twenty feet wide. The bottom of the ditches is composed of fine sediments. Typically, ditch incision occurs from maintenance and from high flows. The ditch at the north central portion of the site is incised up to ten feet deep, with areas of bank scouring noted. ESA observed the ditches near the two 36-inch culverts and the north eastern portion of the site to have approximately two to six inches of standing water present. Site drainage is discussed in Section 6.2.1.1.

6.2.4 Upland Description

Upland communities in the study area are represented by DP 6, 9, 10, 13, 16, 17 (Figures 4 and 5). Photos of upland areas on the site are attached at the end of this report. The uplands in the study area consist of three main community types: native, mixed conifer and deciduous forest surrounding portions of the wetland; lawn areas associated with residential developments; and shrub communities on upland islands within the Wetland A interior. Uplands directly adjacent to Wetland A typically had hydric soil, but lacked hydrology indicators and a prevalence of hydrophytic vegetation.

Within the native forest, dominant trees include red alder, black cottonwood, and Douglas fir. Several of the cottonwoods appeared to be quite large, with a diameter at breast height (DBH) greater than 21 inches. Understory species include salal, snowberry, salmonberry, Oregon grape, sword fern, and Himalayan blackberry. Data plots DP-6, 17, and 16 characterize this plant community.

ESA identified lawns associated with residential developments around the perimeter of the wetland. In general lawns are well maintained and are dominated by a variety of grasses, including bentgrass and bluegrass species. Data plots DP-9 and DP-10 characterize this plant community.

ESA identified three upland islands within the Wetland A interior (Figures 4 and 5). In general, these islands were characterized by a slightly higher elevation than surrounding wetland areas.

Upland islands were dominated by red elderberry, Himalayan blackberry, beaked hazelnut, and sword fern. Data plot DP-13 characterizes this plant community.

7.0 CONCLUSIONS AND RECOMMENDATIONS

ESA identified and delineated 12.2 acres of wetland (Wetland A and associated ditches) within the project area (Figures 4 and 5). In Pierce County, wetlands are regulated under Pierce County Code (PCC) Title 18E—Critical Areas. Wetland categories are described in PCC 18E.30.020 and 18E.30.070 – Appendix A. As mentioned earlier, Wetland A and Wetland Ditches AA, AB, and AC were rated as one wetland unit. According to PCC 18E.30.070, which uses the Washington State Department of Ecology wetland rating system, Wetland A and associated wetland ditches are a Category II wetland.

Wetland buffer requirements for the wetlands in the study area were determined in accordance with PCC 18E.30.070—Appendix F. Wetland buffer widths depend upon the wetland category, the scores for habitat and water quality functions, and the proposed land use intensity. Wetland rating forms are provided in Appendix C. The standard buffer width for a Category II wetland with a moderate level of habitat function adjacent to high intensity land use is 150 feet.

ESA assumed the presence of hydrology for the wetland based on field observations in the project area and at reference sites, as well as information from the Drainage District. Small hummocks and upland vegetation scattered within the wetland suggest a seasonally fluctuating water table for the site. ESA identified three islands within the wetland which exhibited convincing upland characteristics. Because hydrology on-site was not apparent at the time of the September 2010 site visit, it may be possible that other upland islands exist, likely along the edges of the ditches on-site. Hydrology monitoring and/or a return visit during the wet season would provide the data needed to delineate other upland islands within the project area.

Opportunities for native plant and habitat enhancement exist in the central and southeastern portions of the site which are dominated by reed canarygrass and Himalayan blackberry. Hydromodification of depressional areas and drainage ditches could also increase flood storage capacity and hydrologic functions.

8.0 LIMITATIONS

Within the limitations of schedule, budget, and scope-of-work, and seasonal constraints, we warrant that this study was conducted in accordance with generally accepted environmental science practices, including the technical guidelines and criteria in effect at the time this study was performed, as outlined in the Methods section. The results and conclusions of this report represent the authors' best professional judgment, based upon information provided by the project proponent in addition to that obtained during the course of this study. No other warranty, expressed or implied, is made.

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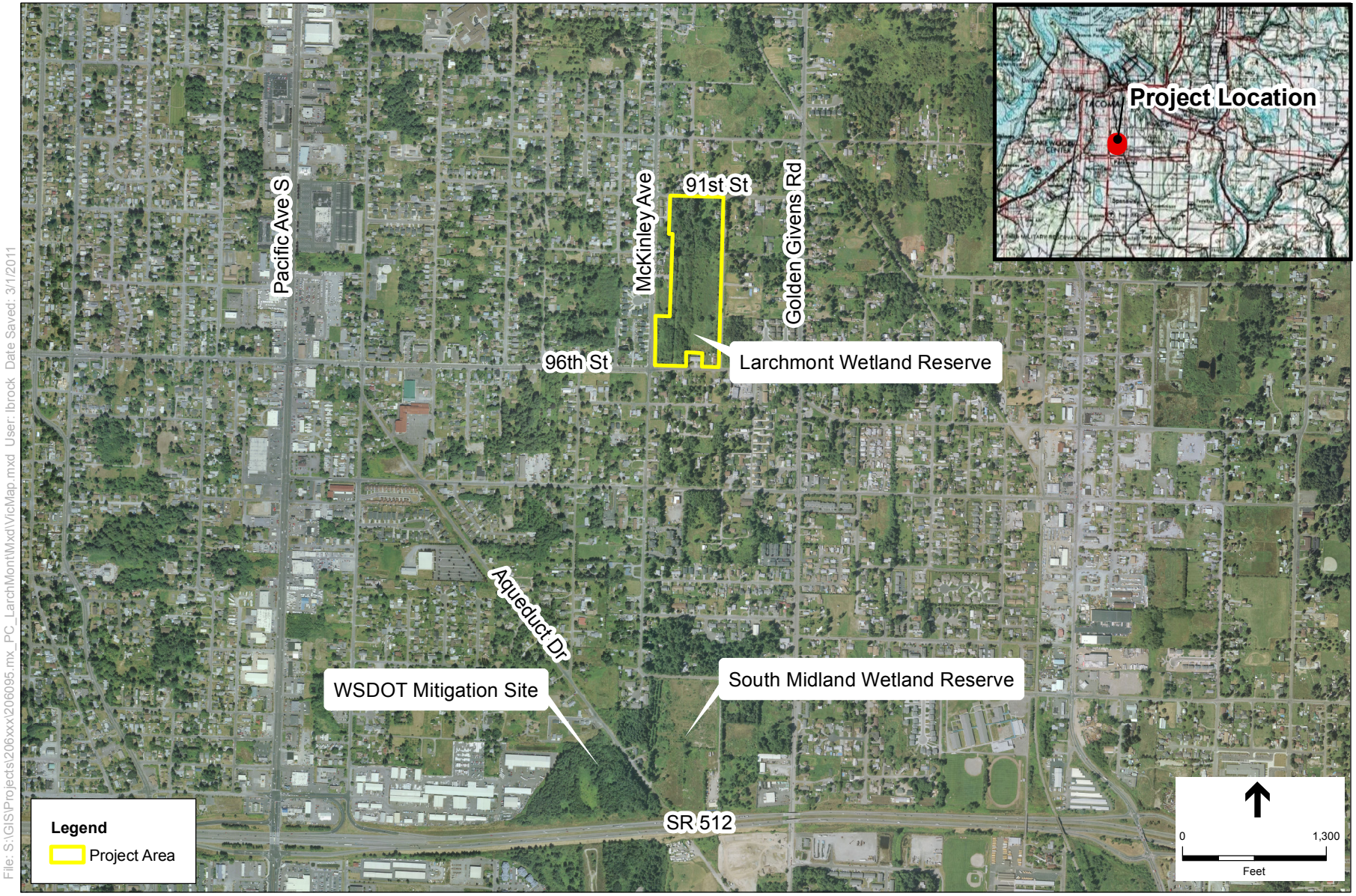
FIGURES AND PHOTOGRAPHS



File: S:\GIS\Projects\206xxx\206095_mx_PC_LarchMont\Mxd\VicMap.mxd User: lbrock Date Saved: 3/1/2011

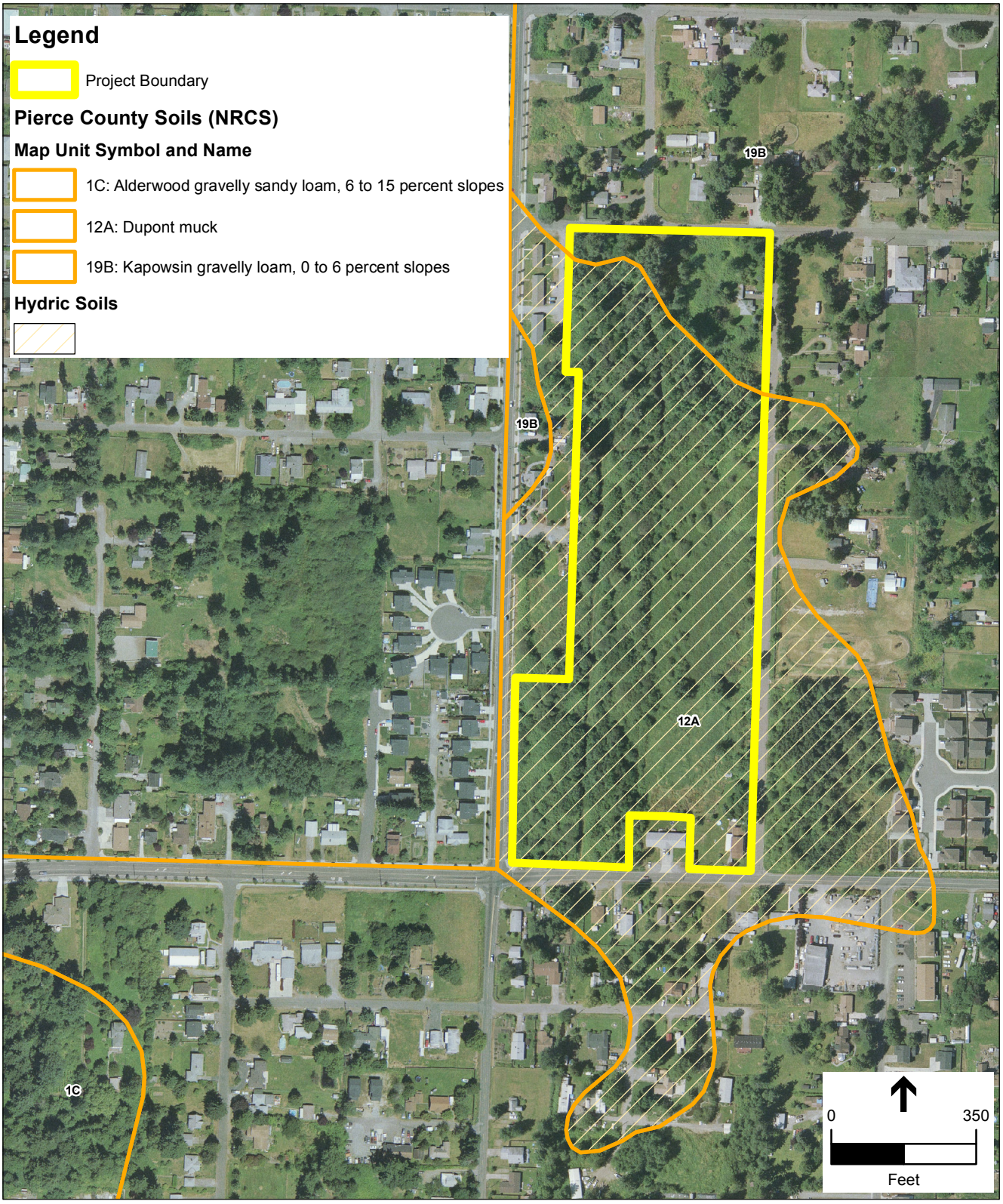
SOURCE: Pierce County, 2005

Pierce County Larchmont Wetland Study. 206095.MX

Figure 1

Vicinity Map

Pierce County, WA



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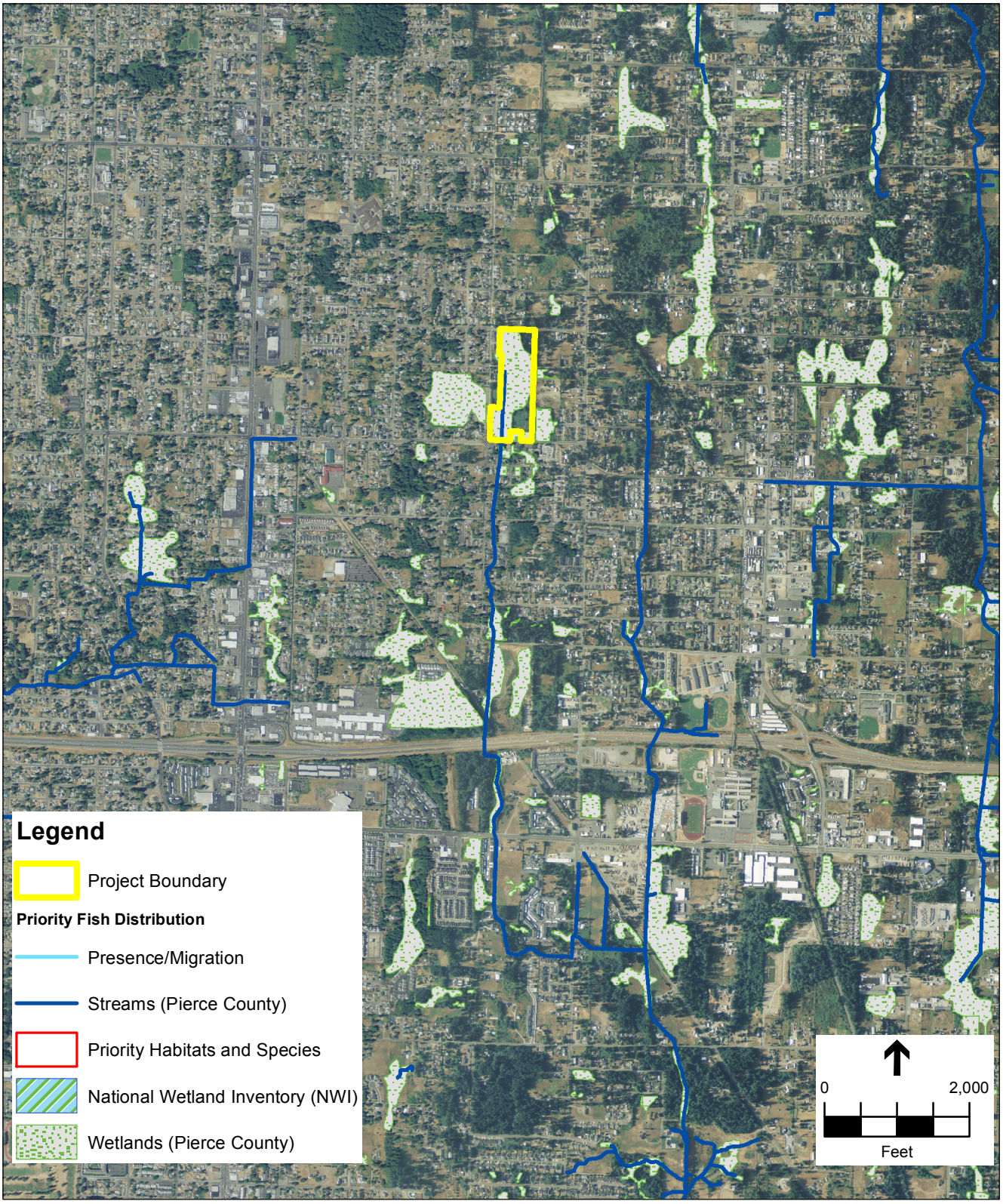
SOURCE: Pierce County, 2005 (Aerial); NRCS, 2008

Pierce County Larchmont . 206095.MX

Figure 2

Soil Survey Map

Pierce County, WA



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SOURCE: WDFW, 2010; NAIP, 2009 (Aerial Image);
Pierce County, 2007 (Wetlands and Streams)

Pierce County Larchmont . 206095.MX

Figure 3

Priority Habitats and Species
Wetland and Stream Inventory
Pierce County, WA

LEGEND

APPROXIMATE WETLAND BOUNDARY

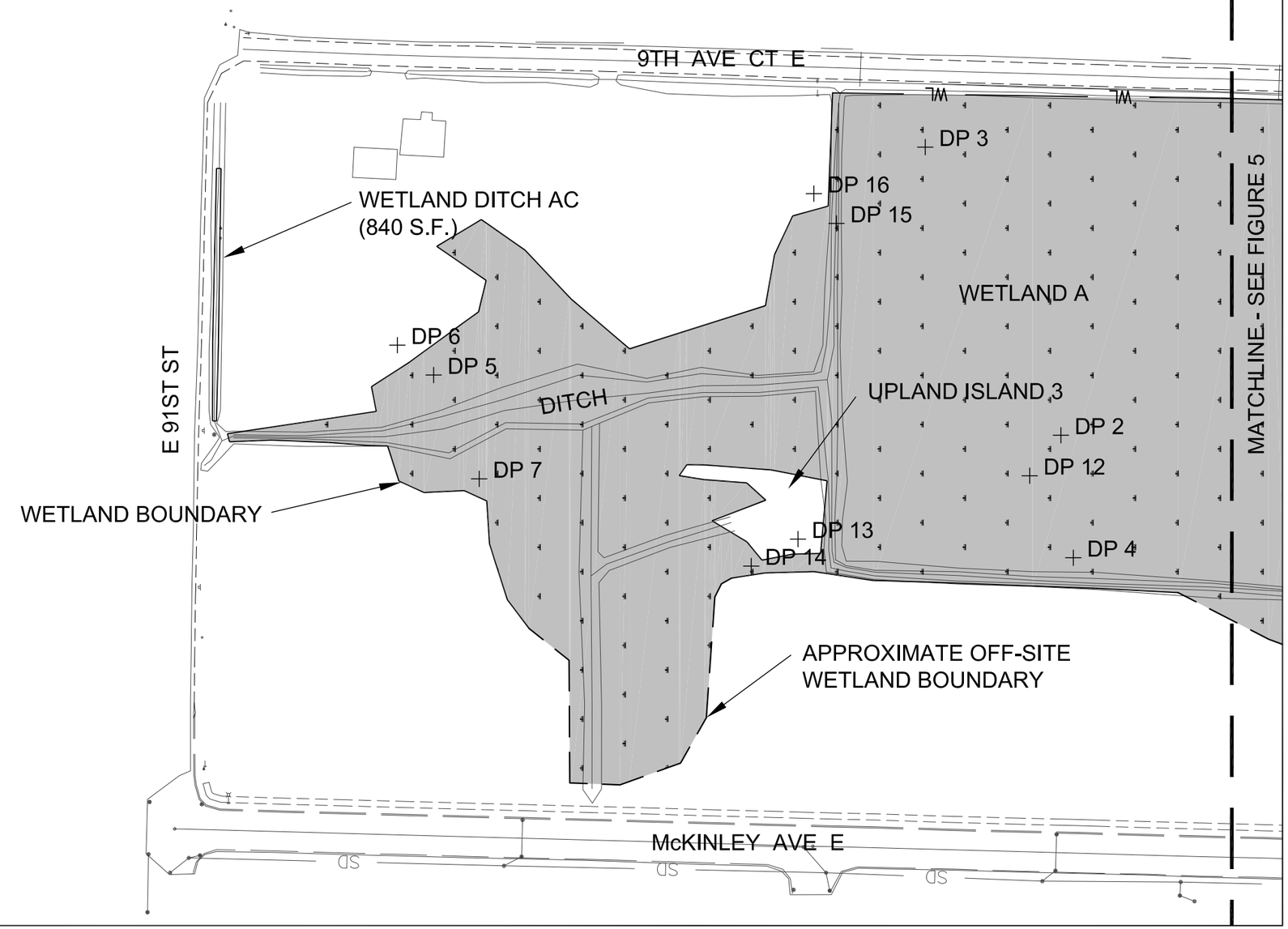
100' WETLAND BUFFER BOUNDARY

EXISTING WETLAND A (12.2 ACRES)

DP 10 DATA POINT

NOTE

The standard buffer width for a category II wetland with moderate habitat function is 150 feet. (PCC.18E.30.070-Appendix F)



0 25 50 100
Feet

reference # 206095.MX
Created by: me

SOURCE: Pierce County, 2010

Larchmont Reserve Wetland Studys . 206095.MX

Figure 4

Northern Wetland Map
Pierce County, Washington

LEGEND

APPROXIMATE WETLAND BOUNDARY

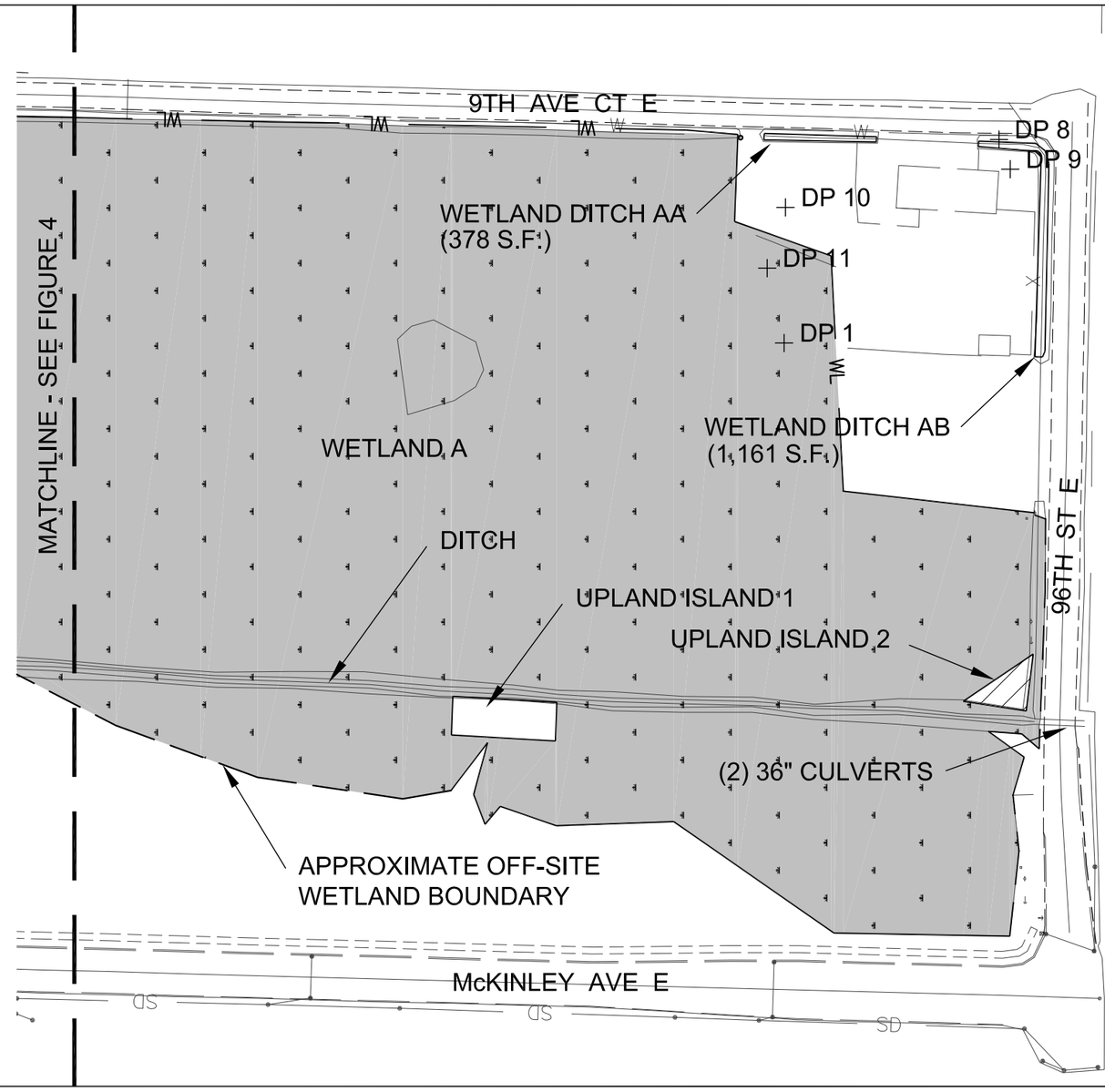
100' WETLAND BUFFER BOUNDARY

EXISTING WETLAND A (12.2 ACRES)

DP 10 DATA POINT

NOTE

The standard buffer width for a category **II** wetland with moderate habitat function is 150 feet. (PCC.18E.30.070-Appendix F)



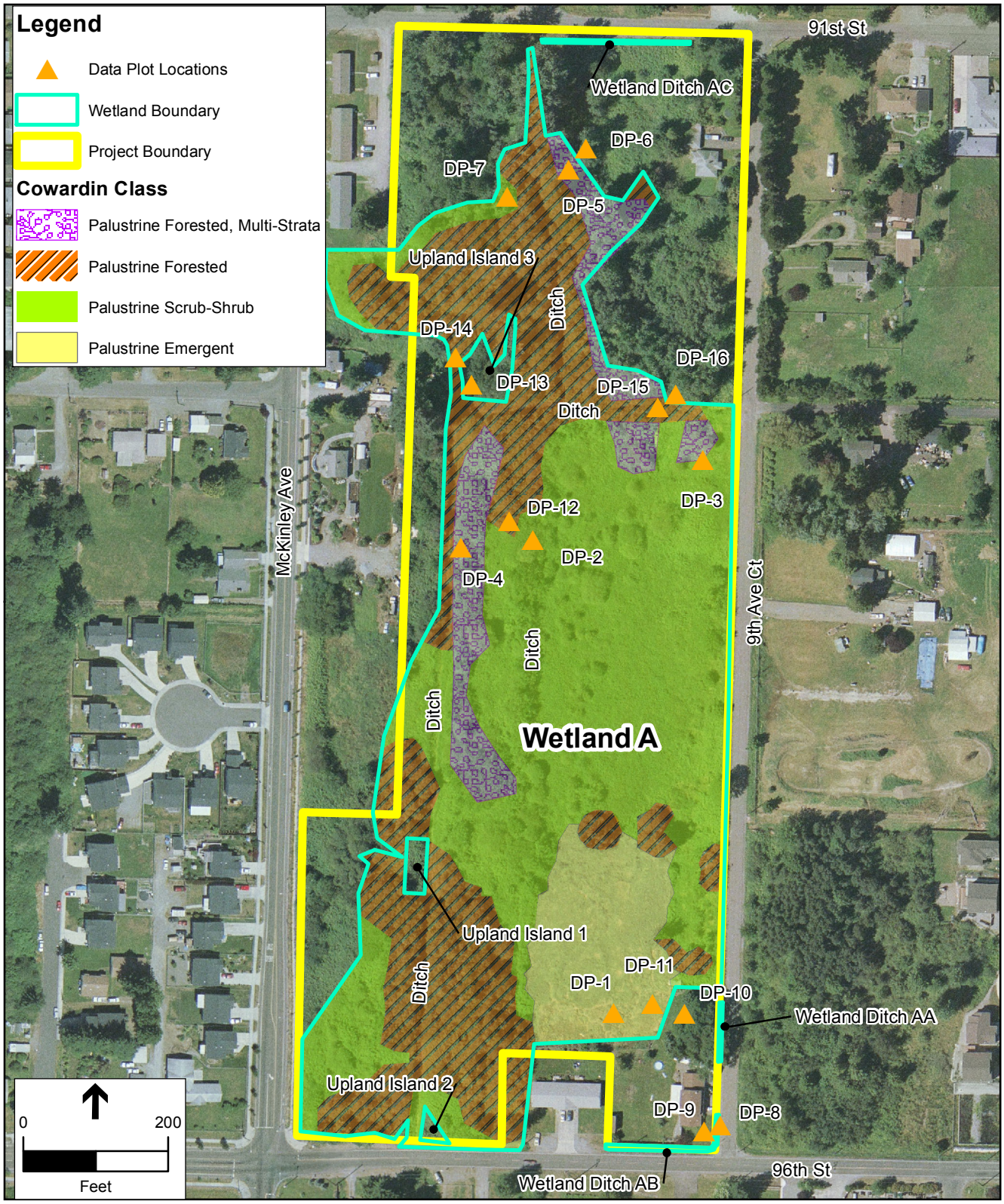
reference # 206095.MX
Created by: me

SOURCE: Pierce County, 2010

Larchmont Reserve Wetland Studys . 206095.MX

Figure 5

Southern Wetland Map
Pierce County, Washington



File: S:\GIS\Projects\206xxx\206095.mx_PC_LarchMont\Mxd\CowardinVegMap.mxd User: lbrock Date Saved: 2/24/2011

SOURCE: Pierce County, 2005 (Aerial); ESA, 2010 (Wetland Survey)

Pierce County Larchmont . 206095.MX

Figure 6

Cowardin Vegetation Map

Pierce County, WA

Photo 1. Wetland A: Palustrine emergent and scrub-shrub communities in the southeastern portion of the site. (September 2010).

Photo 2. Wetland A: Palustrine emergent communities adjacent to scrub-shrub areas in the central and southeastern portion of the site. (September 2010).

Photo 3. Wetland A: Thick scrub-shrub plant communities (willow species) dominate the central portion of the wetland (September 2010).

Photo 4. Wetland A: Forested and scrub-shrub communities in the northern portion of the wetland (September 2010).

Photo 5. Wetland A: Dupont muck mapped for the site verified during ESA's field investigation (September 2010).

Photo 6. Wetland A: Drainage ditch in the interior of the wetland. Data plot DP-2 visible in the foreground (September 2010).

Photo 7. Main drainage ditch located in the western central and southwestern portion of the site (September 2010).

Photo 8. Wetland A: Main drainage ditch outlet—two 36" culverts at the southwestern side of the site (September 2010).

Photo 9. Main drainage ditch recently maintained by the Drainage District (September 2010).

Photo 10. Drainage ditch in the north central portion of Wetland A (September 2010).

Photo 11. Road side ditch associated with Wetland A, adjacent to 96th Street (September 2010).

Photo 12. Wetland ditch AA associated with Wetland A, adjacent to 9th Ave. Residential lawn uplands adjacent to ditches (September 2010).

Photo 13. Wetland ditch AB associated with Wetland A, adjacent to 96th St. Residential lawn uplands adjacent to ditches (September 2010).

Photo 14. Upland forest adjacent to Wetland A: northeastern portion of the project area (September 2010).

Photo 15. Upland forest adjacent to Wetland A: north central portion of the project area. Large cottonwoods bordering Wetland A (September 2010).

APPENDIX A:
METHODS USED TO EVALUATE WETLAND CHARACTERISTICS

Wetland Definition

Wetlands are formally defined by the U.S. Army Corps of Engineers (Corps) (Federal Register 1982), the Environmental Protection Agency (EPA) (Federal Register 1988), the Washington Shoreline Management Act (SMA) of 1971 (Ecology, 1991) and the Washington State Growth Management Act (GMA) (Ecology, 1992) as

> *… those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas* (Federal Register, 1982, 1986).

In addition, the SMA and the GMA definitions add:

> *Wetlands do not include those artificial wetlands intentionally created from non-wetland site, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990 that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificially created wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.*

Methods defined in the *Washington State Wetlands Identification and Delineation Manual* (Ecology, 1997) were used to determine the presence and extent of wetlands on the subject property. Washington state and all local governments must use the state delineation manual to implement the Shoreline Management Act and/or the local regulations adopted pursuant to the Growth Management Act.

The Washington state manual is consistent with the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987). The Corps has been working with states, federal agencies, and others to develop supplemental regional criteria to refine the 1987 delineation manual. Two regions fall within the state of Washington: The Arid West (dry lands west of the Continental Divide, from Idaho and eastern Washington south to the U.S. - Mexico border) and the Western Mountains, Valleys, and Coast. Interim Regional Supplements to the Corps of Engineers 1987 Wetlands Delineation Manual have been completed by the Corps for both regions in Washington, and the appropriate supplement is now used, along with the Washington State Delineation Manual, when conducting delineations in those regions.

The methodology outlined in the manuals is based upon three essential characteristics of wetlands: (1) hydrophytic vegetation; (2) hydric soils; and (3) wetland hydrology. Field indicators of these three characteristics must all be present in order to determine that an area is a wetland (unless problem areas or atypical situations are encountered). These characteristics are discussed below.

Vegetation

Plants must be specially adapted for life under saturated or anaerobic conditions to grow in wetlands. The U.S. Fish and Wildlife Service (USFWS) has determined the estimated probability of each plant species' occurrence in wetlands and has accordingly assigned a "wetland indicator status" (WIS) to each species (USFWS, 1988, 1993). Plants are categorized as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), upland (UPL), not listed (NL), or no indicator status (NI). Definitions for each indicator status are listed in the Glossary. Species with an indicator status of OBL, FACW, or FAC are considered adapted for life in saturated or anaerobic soil conditions. Such species are referred to as "hydrophytic" vegetation. A (+) or (-) sign following the WIS signifies greater or lesser likelihood, respectively, of the species being found in wetland conditions.

Areas of relatively homogeneous vegetative composition can be characterized by "dominant" species. The indicator status of the dominant species within each vegetative stratum is used to determine if the plant community may be characterized as hydrophytic. The vegetation of an area is considered to be hydrophytic if more than 50% of the dominant species have an indicator status of OBL, FACW, or FAC. The Regional Supplements provide additional tests for evaluating the presence of hydrophytic vegetation communities including the prevalence index, morphological adaptations, and wetland non-vascular plants. The Supplements also address difficult situations where hydrophytic vegetation indicators are not present but hydric soils and wetland hydrology are observed.

Soils

Hydric soils are indicative of wetlands. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (Federal Register, 1994). The Natural Resources Conservation Service (NRCS), in cooperation with the National Technical Committee for Hydric Soils, has compiled lists of hydric soils (NRCS, 1995). These lists identify soil series mapped by the NRCS that meet hydric soil criteria. It is common, however, for a map unit of non-wetland (non-hydric) soil to have inclusions of hydric soil, and vice versa. Therefore, field examination of soil conditions is important to determine if hydric soil conditions exist.

The NRCS has developed a guide for identifying field indicators of hydric soils (NRCS, 1998). This list of hydric soil indicators is considered to be dynamic; revisions are anticipated to occur on a regular basis as a result of ongoing studies of hydric soils. In general, anaerobic conditions create certain characteristics in hydric soils, collectively known as "redoximorphic features," that can be observed in the field (Vepraskas, 1999). Redoximorphic features include high organic content, accumulation of sulfidic material (rotten egg odor), greenish- or bluish-gray color (gley formation), spots or blotches of different color interspersed with the dominant or matrix color (mottling), and dark soil colors (low soil chroma) (NRCS, 1998; Vepraskas, 1999). Soil colors are described both by common color name (for example, "dark brown") and by a numerical description of their hue, value, and chroma (for example, 10YR 2/2) as identified on a Munsell soil color chart (Munsell Color, 2000). Soil color is determined from a moist soil sample.

The Regional Supplements provide methods for difficult situations where hydric soil indicators are not observed, but indicators of hydrophytic vegetation and wetland hydrology are present.

Hydrology

Water must be present in order for wetlands to exist; however, it need not be present throughout the entire year. Wetland hydrology is considered to be present when there is permanent or periodic inundation or soil saturation at or near the soil surface for more than 12.5% of the growing season (typically two weeks in lowland Pacific Northwest areas). Areas that are inundated or saturated for between 5% and 12.5% of the growing season in most years may or may not be wetlands. Areas inundated or saturated for less than 5% of the growing season are non-wetlands (Ecology, 1997).

Indicators of wetland hydrology include observation of ponding or soil saturation, water marks, drift lines, drainage patterns, sediment deposits, oxidized rhizospheres, water-stained leaves, and local soil survey data. Where positive indicators of wetland hydrology are observed, it is assumed that wetland hydrology occurs for a sufficient period of the growing season to meet the wetland criteria, as described by Ecology (1997). The Regional Supplements provide methods for evaluating situations in wetlands that periodically lack indicators of wetland hydrology but where hydric soils and hydrophytic vegetation are present.

APPENDIX B:
COMMON AND SCIENTIFIC NAMES OF PLANTS AND WETLAND INDICATOR STATUS

PLANT SPECIES LIST FOR THE LARCHMONT WETLAND RESERVE PROJECT, IDENTIFIED IN SEPTEMBER 2010

COMMON NAME	SCIENTIFIC NAME	WETLAND INDICATOR STATUS*
Trees		
black cottonwood	*Populus trichocarpa (Populus balsamifera ssp. trichocarpa)*	FAC
Douglas fir	*Pseudotsuga menziesii*	FACU*
European hawthorne	*Crataegus monogyna*	NL
European mountain–ash (Rowan tree)	*Sorbus aucuparia*	NL
Oregon ash	*Fraxinus latifolia*	FACW
Pacific willow	*Salix lasiandra ssp. lucida*	FACW
quaking aspen	*Populus tremula*	FAC
red alder	*Alnus rubra*	FAC
Western hemlock	*Tsuga heterophylla*	FACU-
Shrubs		
beaked hazelnut	*Corylus cornuta*	FACU
black twin-berry	*Lonicera involucrata*	FAC+*
clustered rose	*Rosa pisocarpa*	FAC
common snowberry	*Symphoricarpos albus*	FACU
Douglas' spiraea	*Spiraea douglasii*	FACW
English holly	*Ilex aquifolium*	NL
evergreen blackberry	*Rubus laciniatus*	FACU+
Himalayan blackberry	*Rubus discolor (Rubus armeniacus)*	FACU
Indian plum (osoberry)	*Oemleria cerasiformis*	FACU
Japanese knotweek	*Polygonum cuspidatum*	NL
Pacific crabapple	*Malus fusca*	FACW
Pacific ninebark	*Physocarpus capitatus*	FACW-
red elderberry	*Sambucus racemosa*	FACU
red-osier dogwood (western red osier)	*Cornus stolonifera (Cornus sericea)*	FACW
Salal	*Gaultheria shallon*	FACU*
salmonberry	*Rubus spectabilis*	FAC+
Scouler willow	*Salix scouleriana*	FAC
Sitka willow	*Salix sitchensis*	FACW

COMMON NAME	SCIENTIFIC NAME	WETLAND INDICATOR STATUS*
thimbleberry	*Rubus parviflorus*	FAC-
vine maple	*Acer circinatum*	FAC-
Herbs		
Bracken fern	*Pteridium aquilinum*	FACU
Cooley's hedge-nettle	*Stachys cooleyae*	FACW
creeping buttercup	*Ranunculus repens*	FACW
deer fern	*Blechnum spicant*	FAC
fringe cup	*Tellium grandiflora*	
herb Robert	*Geranium robertanium*	NL
lady fern	*Athyrium filix-femina*	FAC
large-leaf avens	*Geum macrophyllum*	FACW-*
Pacific blackberry (dewberry)	*Rubus ursinus*	FACU
pig-a-back-plant	*Tolmiea menziesii*	FAC*
reed canarygrass	*Phalaris arundinacea*	FACW
sword fern	*Polystichum munitum*	FACU

*Key to Wetland Indicator Status codes – Northwest Region (Source: USFWS, 1988, 1993):

OBL Obligate: species that almost always occur wetlands under natural conditions (est. probability >99%).

FACW Facultative wetland : species that usually occur in wetlands (est. probability 67 to 99%), but are occasionally found in non-wetlands.

FAC Facultative: Species that are equally likely to occur in wetlands or non-wetlands (est. probability 34 to 66%).

FACU Facultative upland: species that usually occur in non-wetlands (est. probability 67 to 99%), but are occasionally found in wetlands.

UPL Upland: species that almost always occur in non-wetlands under normal conditions (est. probability >99%).

NL Not listed: species that are not listed by USFWS (1988, 1993) and are presumed to be upland species.

NI No indicator: species for which insufficient information is available to determine status, or which were not evaluated by USFWS.

\+ indicates a species that is more frequently found in wetlands

\- indicates a species that is less frequently found in wetlands

* identifies a tentative assignment based upon either limited information or conflicting reviews

APPENDIX C: ECOLOGY WETLAND RATING RATING FORM

Washington State Wetland Rating System

The observed wetlands were rated using the Washington State Department of Ecology's *Wetland Rating System for Western Washington* (Hruby, 2004). This system was developed by Ecology to differentiate wetlands based on their sensitivity to disturbance, their significance, their rarity, our ability to replace them, and the beneficial functions they provide to society. Wetlands are categorized using the Ecology rating system according to the following criteria:

Category I wetlands represent a unique or rare wetland type; or are more sensitive to disturbance; or are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime.

Category II wetlands are difficult, though not impossible, to replace, and provide high levels of some functions.

Category III wetlands have a moderate level of function. They have been disturbed in some ways, and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.

Category IV wetlands have the lowest levels of functions and are often heavily disturbed.

Pierce County Wetland Categories

Pierce County categorizes wetlands based on the following generalized criteria, based on Ecology's *Wetland Rating System for Western Washington* (Hruby, 2004):

Category I wetlands are:

- Relatively undisturbed estuarine wetlands larger than 1 acre
- Wetlands that are identified by scientists of the Washington Natural Heritage Program/DNR as high quality wetlands
- Bogs
- Mature and Old growth forested wetlands larger than 1 acre
- Wetlands in coastal lagoons
- Wetlands that perform many functions well (wetlands scoring 70 points or more – out of 100) on the questions related to functions.

These wetlands are those that:

- Represent a unique or rare wetland type; or
- Are more sensitive to disturbance than most wetlands; or
- Are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or
- Provide a high level of functions.

Category II wetlands are:

- Estuarine wetlands smaller than 1 acre, or disturbed estuarine wetlands larger than 1 acre,
- A wetland identified by the state Department of Natural Resources as containing "sensitive" plant species,
- Wetlands with a moderately high level of functions (wetlands scoring between 51-69 points (out of 100) on the questions related to the functions.

Category III wetlands are:

- Wetlands with a moderate level of functions (scores between 30-50 points)

Category IV wetlands are:

- Category IV wetlands have the lowest levels of functions (scores less than 30 points) and are often heavily disturbed.

Wetland name or number A

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): WETLAND A Date of site visit: Sept. 2010

Rated by L. BROCK Trained by Ecology? Yes ✓ No___ Date of training Oct. 2007

SEC: 34 TWNSHP: 20N RNGE: 3E Is S/T/R in Appendix D? Yes___ No ✓

Map of wetland unit: Figure 4,5,6 Estimated size 12.2 acres

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III___ IV___

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions	22
Score for Hydrologic Functions	20
Score for Habitat Functions	21
TOTAL score for Functions	63

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply ✓

Final Category (choose the "highest" category from above) II

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		**Depressional**	✓
Natural Heritage Wetland		**Riverine**	
Bog		**Lake-fringe**	
Mature Forest		**Slope**	
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above	✓	Check if unit has multiple HGM classes present	✓

Wetland name or number A

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered* ***animal or plant*** *species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		✓
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered* ***animal*** *species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		✓
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?* MAIN DITCH/STREAM IS MAPPED FOR THE PRESENCE AND MIGRATION OF CUTTHROAT	✓	
SP4. *Does the wetland unit have a local significance in addition to its functions*? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		✓

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number A

Classification of Wetland Units in Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
NO – go to 2 **YES** – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet both** of the following criteria?
___The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
___At least 30% of the open water area is deeper than 6.6 ft (2 m)?
NO – go to 4 **YES** – The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?
____The wetland is on a slope (*slope can be very gradual*),
____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
____The water leaves the wetland **without being impounded**?
NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*
NO - go to 5 **YES** – The wetland class is **Slope**

Wetland name or number A

#5 - SEVERAL DITCHES ARE PRESENT ON-SITE WITH HIGH FLOWS DURING THE WET SEASON.

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

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

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

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

NO - go to 6 **YES** – The wetland class is **Riverine**

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

NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding. The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM clases. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within your wetland. NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM Classes within the wetland unit being rated	*HGM Class to Use in Rating*
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
→ Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

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

*NOTE: DITCHES AA, AB, AND AC ARE ASSOCIATED WITH THE MAIN BODY OF WETLAND A. THESE DITCHES RECEIVE AND/OR CONTRIBUTE FLOW TO THE WETLAND. VEGETATION IS SIMILAR IN THE ADJACENT AREAS OF WETLAND A, AND DITCHES WERE LIKELY ONCE A PART OF THE

MAIN WETLAND UNIT. DITCHES ARE CONSIDERED PART OF THE WETLAND A UNIT FOR THIS RATING.

Wetland name or number A

D	**Depressional and Flats Wetlands** HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation	**Points** (only 1 score per box)
	D 3. Does the wetland unit have the potential to reduce flooding and erosion?	***(see p.46)***
D	D 3.1 Characteristics of surface water flows out of the wetland unit Unit is a depression with no surface water leaving it (no outlet) points = 4 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 *(If ditch is not permanently flowing treat unit as "intermittently flowing")* Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 0	2
D	D 3.2 Depth of storage during wet periods *Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 The wetland is a "headwater" wetland" SEE BELOW points = 5 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points = 0	5
D	D 3.3 Contribution of wetland unit to storage in the watershed *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* BASIN DATA PROVIDED BY PIERCE COUNTY The area of the basin is less than 10 times the area of unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire unit is in the FLATS class points = 5	3
D	**Total for D 3** *Add the points in the boxes above*	10
D	**D 4. Does the wetland unit have the opportunity to reduce flooding and erosion?** Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur. *Note which of the following indicators of opportunity apply.* ✓ Wetland is in a headwater of a river or stream that has flooding problems ✓ Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other_____ **YES** multiplier is 2 **NO** multiplier is **1**	***(see p. 49)*** multiplier 2
D	**TOTAL - Hydrologic Functions** Multiply the score from D 3 by D 4 ***Add score to table on p. 1***	20

D.3.2, SINCE HALF THE SITE DRAINS TO THE NORTH AND THE OTHER HALF DRAINS SOUTH, THE WETLAND IS CONSIDERED A HEADWATER WETLAND, DRAINAGE INFO FROM DRAINAGE DISTRICT.

Wetland name or number A

D	**Depressional and Flats Wetlands** **WATER QUALITY FUNCTIONS** - Indicators that the wetland unit functions to improve water quality	**Points** (only 1 score per box)
D	**D 1. Does the wetland unit have the potential to improve water quality?**	*(see p.38)*
D	D 1.1 Characteristics of surface water flows out of the wetland: Unit is a depression with no surface water leaving it (no outlet) points = 3 Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2 Unit has an unconstricted, or slightly constricted, surface outlet (*permanently flowing*) points = 1 Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow **and no obvious natural outlet** and/or outlet is a man-made ditch points = 1 (*If ditch is not permanently flowing treat unit as "intermittently flowing"*) INTERMITTENT FLOW, DITCHES DRY IN SUMMER Provide photo or drawing	Figure ___ 2 (PHOTOS 8+9)
D	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* DUPONT MUCK YES points = 4 NO points = 0	4
D	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class) Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5 Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3 Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1 Wetland has persistent, ungrazed vegetation <1/10 of area points = 0 Map of Cowardin vegetation classes	Figure ___ 5
D	D1.4 Characteristics of seasonal ponding or inundation. *This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0 BASED ON COUNTY HYDROLOGY DATA Map of Hydroperiods	Figure ___ 0
D	**Total for D 1** *Add the points in the boxes above*	11
D	**D 2. Does the wetland unit have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.* — Grazing in the wetland or within 150 ft ✓ Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland ✓ A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging ✓ Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other_____ **YES** multiplier is 2 **NO** multiplier is 1	*(see p. 44)* multiplier 2
D	**TOTAL - Water Quality Functions** Multiply the score from D1 by D2 ***Add score to table on p. 1***	22

SEE PIERCE COUNTY DATA ATTACHED AT END OF FORM - 386' ELEVATION SEASONALLY PONDED, 387' ELEVATION LIKELY SEASONALLY PONDED - SATURATED

Wetland name or number A

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland unit have the potential to provide habitat for many species?	
H 1.1 Vegetation structure ***(see p. 72)*** *Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.* ___ Aquatic bed ✓ Emergent plants ✓ Scrub/shrub (areas where shrubs have >30% cover) ✓ Forested (areas where trees have >30% cover) *If the unit has a forested class check if:* ✓ The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon * *Add the number of vegetation structures that qualify. If you have:* → 4 structures or more — points = 4 3 structures — points = 2 2 structures — points = 1 1 structure — points = 0 Map of Cowardin vegetation classes FIG 6 * 1.0 acre PFO w/MULTI STRATA MAPPED	**Figure** 6 PHOTO 15 SHOWS LARGE COTTONWOODS THAT FORM A LAYERED CANOPY. 4
H 1.2. Hydroperiods ***(see p. 73)*** *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* ___ Permanently flooded or inundated — 4 or more types present — points = 3 ✓ Seasonally flooded or inundated — → 3 types present — points = 2 ___ Occasionally flooded or inundated — 2 types present — point = 1 ✓ Saturated only — 1 type present — points = 0 ___ Permanently flowing stream or river in, or adjacent to, the wetland ✓ Seasonally flowing stream in, or adjacent to, the wetland ___ ***Lake-fringe wetland* = 2 points** ___ ***Freshwater tidal wetland* = 2 points** Map of hydroperiods	**Figure** ___ 2
H 1.3. Richness of Plant Species ***(see p. 75)*** Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* If you counted: > 19 species — points = 2; 5 - 19 species — points = 1; < 5 species — points = 0 *List species below if you want to:* MAFU, OECE, POBA, OESA, SASC, POMU, COSE, PREM, SASI, SPDO, AT FIFE, RARE, SALU, ROPI, BLSP, SARA, Agrostis, POTR, RUSP, FRLA, Polygonum - Pink, COCO, ALRU	2

H.1.1 LARGE COTTONWOODS (CANOPY) WITH SMALLER ALDERS, WILLOWS, AND ASH FORMING SUB-CANOPY, BELOW IS A SHRUB LAYER WITH DOGWOOD, ROSE, ETC. – NE POLYGON, FIG 6, DP-5.

Total for page 8

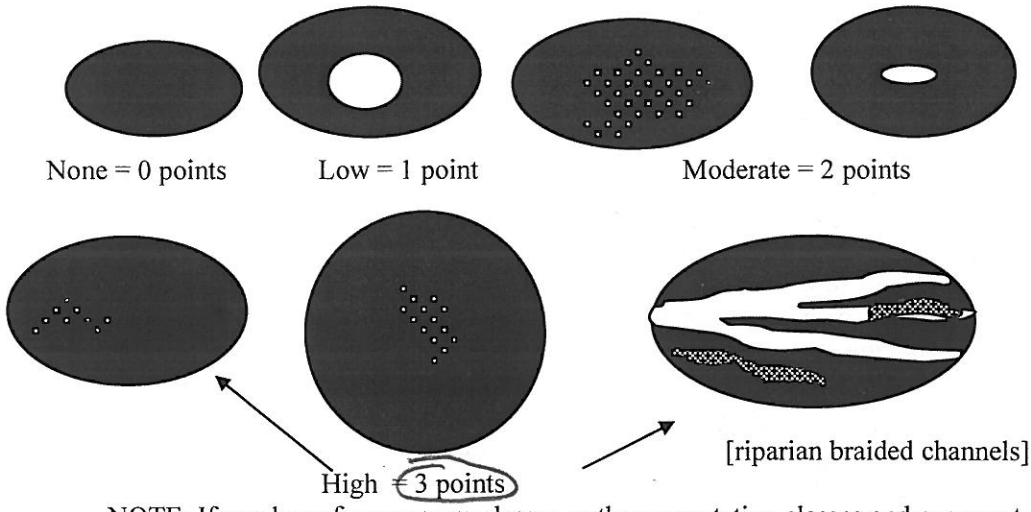
WILLOWS (MATURE PACIFIC & SCOULER'S) FORM CANOPY, WITH SHRUB LAYER AND HERBACEOUS LAYER BELOW - WESTERN CENTRAL POLYGON, FIG 6, DP-4

Wetland name or number A

H 1.4. Interspersion of habitats ***(see p. 76)***

Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.

Figure 6



NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes

3

H 1.5. Special Habitat Features: ***(see p. 77)***

Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.

✓ Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).

✓ Standing snags (diameter at the bottom > 4 inches) in the wetland

✓ Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)

____ Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)*

____ At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. *(structures for egg-laying by amphibians)*

____ Invasive plants cover less than 25% of the wetland area in each stratum of plants

NOTE: The 20% stated in early printings of the manual on page 78 is an error.

3

H 1. TOTAL Score - potential for providing habitat

Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5

14

Comments

Wetland name or number A

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers ***(see p. 80)*** *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."* — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) **Points = 5** — 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0.** ✓ Buffer does not meet any of the criteria above. **Points = 1** MOSTLY BORDERED BY PAVED ROADS Aerial photo showing buffers	**Figure ___** 1
H 2.2 Corridors and Connections ***(see p. 81)*** H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor*). PAVED ROADS INTERSECT YES = **4 points** (*go to H 2.3*) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? YES = **2 points** (*go to H 2.3*) NO = H 2.2.3 PAVED ROADS INTERSECT H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? PASTURE AREAS IN THE AREA APPEAR TO BE ~ 20 ACRES OR LESS TOTAL SIZE YES = **1 point** NO = **0 points**	0

Total for page 1

Wetland name or number A

H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.* ____**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre). ____**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*). ____**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock. ____**Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. ____**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*). __✓__**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*). __✓__**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. ____ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).* ____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. ____**Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft. ____**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has **3 or more** priority habitats **= 4 points** If wetland has **2** priority habitats = **3 points** If wetland has **1** priority habitat **= 1 point** No habitats = 0 points *Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*	3

Wetland name or number A

H 2.4 Wetland Landscape *(choose the **one** description of the landscape around the wetland that best fits)* ***(see p. 84)*** There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5 There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3 The wetland is Lake-fringe on a lake **with** disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	3
H 2. TOTAL Score - opportunity for providing habitat *Add the scores from H2.1,H2.2, H2.3, H2.4*	7
TOTAL for H 1 from page 14	14
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	21

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	**Category**
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland unit meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO ✓	N/A
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating I/II**

Wetland name or number A

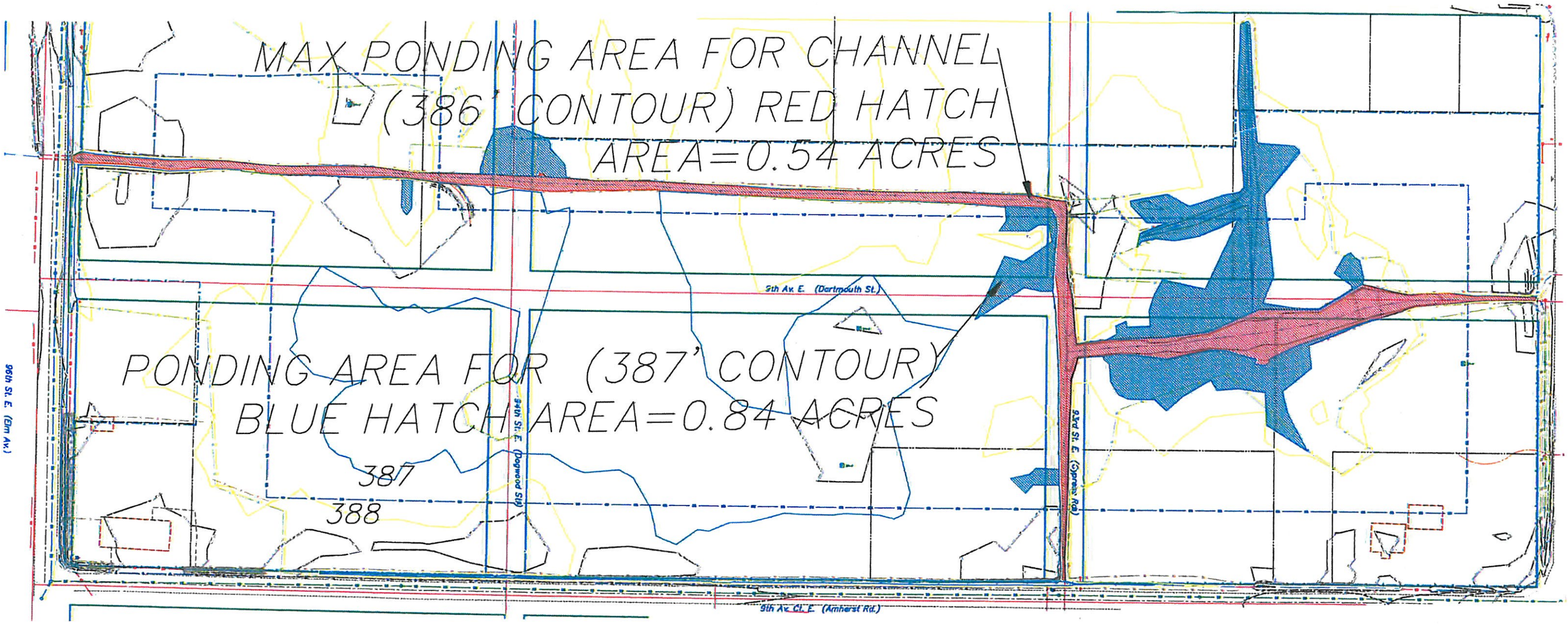
SC 2.0 Natural Heritage Wetlands ***(see p. 87)*** Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species. SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)* S/T/R information from Appendix D ✓ or accessed from WNHP/DNR web site ✓ YES____ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO ✓ SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species? YES = Category I NO ____not a Heritage Wetland	**Cat. I** N/A
SC 3.0 Bogs ***(see p. 87)*** Does the wetland unit (**or any part of the unit**) meet both the criteria for soils and vegetation in bogs? *Use the key below to identify if the wetland is a bog.* ***If you answer yes you will still need to rate the wetland based on its functions.*** 1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 (No) go to Q. 2 2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond? Yes - go to Q. 3 (No) - Is not a bog for purpose of rating 3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)? Yes – Is a bog for purpose of rating No - go to Q. 4 NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog. *1.* Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?* 2. YES = Category I No___ Is not a bog for purpose of rating	N/A **Cat. I**

Wetland name or number A

SC 4.0 Forested Wetlands ***(see p. 90)*** Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its functions.* — **Old-growth forests**: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. — **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. YES = Category I NO ✓ not a forested wetland with special characteristics VERY LARGE COTTONWOODS PRESENT, IN SOME CASES DBH IS 36-48;" HOWEVER THESE TREES ARE SCATTERED AND DO NOT FORM STANDS,	N/A **Cat. I**
SC 5.0 Wetlands in Coastal Lagoons ***(see p. 91)*** Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* YES = Go to SC 5.1 NO ✓ not a wetland in a coastal lagoon SC 5.1 Does the wetland meets all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than 1/10 acre (4350 square feet) YES = Category I NO = Category II	N/A **Cat. I** **Cat. II**

Wetland name or number A

SC 6.0 Interdunal Wetlands ***(see p. 93)*** Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES - go to SC 6.1 NO ✓ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula- lands west of SR 103 • Grayland-Westport- lands west of SR 105 • Ocean Shores-Copalis- lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger? YES = Category II NO – go to SC 6.2 SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III	N/A **Cat. II** **Cat. III**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered NO for all types enter "Not Applicable" on p.1	N/A



SEASONAL PONDING SKETCH
(PIERCE CO, 2011)

Total 0.84 + 0.54 = 1.38 ACRES

APPENDIX D: WETLAND DETERMINATION DATA SHEETS (ECOLOGY, 1997 AND CORPS, 2010 VERSIONS)

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/14/2010
Applicant/Owner: Pierce County	County: Pierce State: WA
Investigator(s): L. Brock, R. Baker, A. Merrill	S/T/R: T20N, R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-1

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Rosa pisocarpa	S	30	FAC	Hypericum formosum	H	2	FAC
Amelanchier alnifolia	S	1	FACU				
Crataegus monogyna	S	Trace	FACU				
Rubus armeniacus	S	2	FACU				
Agrostis sp.	H	10	FAC				
Elymus repens	H	40	NL				
Polygonum (pink) sp.	H	Trace	FACW/OBL				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 2/3 66%

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: date - Sept.	Water Marks: Yes (No) Drift Lines: Yes (No)	Sediment Deposits: Yes (No) Drainage Patterns: Yes (No)
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes (No) FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes (No)
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other: Surface soil cracks, stunted/stressed plants.	

Wetland hydrology present? (Yes) No Soil dry in top layer. Moist below 17"
Rationale for decision/remarks:
Area is a discrete swale. Assuming hydrology based on Drainage District Info that groundwater comes to surface during early growing season.

Larchmont DP-1

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-17	1	10YR2/1	7.5YR 3/4	Common, dist. (10%)	muck	
		10YR3/2				
17-23	2	2.5Y 4/2	10YR3/4	many, dist (40%)	loamy sand	
23+	3	2.5Y 6/2	2.5Y 5/3	Common	Sand	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-1 located in field, north of the MacDonald/Schmitt shared property boundary. North of flag A-44 ~30 ft.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/14/10

Applicant/Owner: PC State: WA Sampling Point: DP-1

Investigator(s): L. Brock, R. Baker, A. Merrill Section, Township, Range: T20N, R3E

Landform (hillslope, terrace, etc.): field-flat Local relief (concave, convex, none): none Slope (%): —

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont Muck NWI classification: PSS-NWI mapping

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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: DP-1 located in field, north of the McDonald/Schmitt shared property boundary. North of flag A-44 ~30 feet.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa pisocarpa	30	Y	FAC
2. Amelanchier alnifolia	1	N	FACU
3. Crataegus monogyna	TR	N	FACU
4. Rubus armeniacus	2	N	FACU
5.			
	33 = Total Cover		

Herb Stratum (Plot size: 1 m.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Agrostis sp.	10	Y	FAC
2. Elymus repens	40	Y	NL
3. Polygonum sp. (pink flower-smartweed)	1	N	FACW/OBL
4. Hypericum formosum	2	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	53 = Total Cover		

Woody Vine Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
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
- ✓ 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: NL species not used for dominance test

Plant community: PEM

SOIL

Sampling Point: DP-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-17	10 YR 2/1	45	7.5 YR 3/4	10	C	M	Muck	
	10 YR 3/2	45						
17-23	2.5 Y 4/2	60	10 YR 3/4	40	C	M	Loamy Sand	
23+	2.5 Y 6/2	98	2.5 Y 5/3	2	C	M	Sand	small pockets of clay – redox occurs w/in pockets of the clay

[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: Soil is dry in top layer. Soil moist below 17". Area is in a discrete swale. Soil surface has cracks and plants are more sparse and stunted than in surrounding areas. Assuming based on Drainage District info that groundwater comes to surface during the early growing season.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce Co. Investigator(s): L. Brock / R. Baker / A. Merrill	Date: 9/14/2010 County: Pierce State: WA S/T/R: S34 / 20N / 3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-2

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Malus fusca *	S	60	FACW	Phalaris arundinacea *	H	5	FACW
Salix sitchensis *	S	20	FACW	Carex hendersonii *	H	2	FAC
Salix lucida *	S	20	FACW	Polystichum munitum	H	1	FACU
Spiraea douglasii	S	15	FACW				
Crataegus monogyna	S	1	FACU				
Ilex aquifolium	S	Trace	NL				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 5/5 100% * dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

PSS plant community

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: (Yes) No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No Soil slightly moist from 0-16". In adjacent ditch
Rationale for decision/remarks: areas (above and below data plot) soil surface appears to hold water - surface is bare except for willows. Few herbs compared to adjacent wetland. Assuming ditches hold water during early growing season based on Drainage District info.

Larchmont DP-2

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-7	1	10 YR 3/1	—		muck	
7-16	2	10 YR 2/1	7.5 YR 3/3	common (5%), distinct	muck	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-2 located in central ditch. Access to ditch from 9th Ave, along a swath that has been mowed for monitoring wells.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/14/10

Applicant/Owner: PC State: WA Sampling Point: DP-2

Investigator(s): L. Brock, R. Baker, A. Merrill Section, Township, Range: S34 / T20 N / R3 E

Landform (hillslope, terrace, etc.): depression - ditch Local relief (concave, convex, none): concave Slope (%): —

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: DP-2 located in central ditch. Access to ditch from 9th Ave, along a swath that has been mowed for monitoring wells.

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: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Malus fusca	60	Y	FACW
2. Salix sitchesis	20	Y	FACW
3. Salix lucida	20	Y	FACW
4. Spiraea douglasii	15	N	FACW
5. Crataegus monogyna	1	N	FACU
Ilex aquifolium	Trace	N	NL
	116 Total	~~= Total Cover~~	

Herb Stratum (Plot size: 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Phalaris arundinacea	5	Y	FACW
2. Carex hendersonii	2	Y	FAC
3. Polystichum munitum	1	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	8 = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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: PSS plant community.

SOIL

Sampling Point: DP-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	10 YR 3/1	100					muck	
7-16	10 YR 2/1	95	7.5 YR 3/3	5	C	M,PL	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)
- ___ 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: Soil slightly moist from 0-16". In adjacent ditch areas (above and below data plot) soil surface appears to hold water - surface is bare except for willows - few herbs compared to adjacent wetland. Assuming that ditches hold water during early growing season based on Drainage District info.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/14/2010
Applicant/Owner: Pierce Co.	County: Pierce State: WA
Investigator(s): L. Brock / R. Baker	S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-3

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix scouleriana *	T	30	FAC	Rosa pisocarpa *	S	20	FAC
Phalaris arundinacea *	H	30	FACW				
Ipomoea sp. *	H	40	NL				
Lactuca serriola	H	5	FACU				
Rubus lacinatus *	S	30	FACU				
Rubus armeniacus *	S	70	FACU				

HYDROPHYTIC VEGETATION INDICATORS: PFO - 3 out of 5 strata.

% of dominants OBL, FACW, & FAC: 3/6 50% * dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PFO/PSS Plant community, at the edge of forested area.

Upland invasives skew dominance test. Without blackberry, site would likely be dominated by hydrophytic veg.

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Soil moist in 10-18" layer - surface layer dry. Assuming GW present in the early growing season - based on Drainage District info.

Larchmont DP-3

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-10	1	10YR 2/1	—		muck	
10-18	2	7.5YR 2.5/2	7.5YR 3/3	many (40%)	Silt loam	

Hydric Soil Indicators: (Check all that apply)

- ___ Histosol
- ✓ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic moisture regime
- ___ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ___ Concretions
- ___ High organic content in surface layer of sandy soils
- ___ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-3 located on former Boschee property ~15 ft. south of East-West ditch. Area is ~2 ft. higher in elevation than the ditch.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/14/10

Applicant/Owner: PC State: WA Sampling Point: DP-3

Investigator(s): L. Brock, R. Baker Section, Township, Range: S34 / T20 N / R3E

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: DP-3 located on former Boschee property, ~15 ft. south of East-West ditch, Area is ~2 ft. higher in elevation than ditch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix scouleriana	30	Y	FAC
2.			
3.			
4.			
	Y = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Rosa pisocarpa	20	Y	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Phalaris arundinacea	30	Y	FACW
2. Ipomoea sp.	40	Y	NL
3. Lactuca serriola	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. Rubus laciniatus	30	Y	FACU
2. Rubus armeniacus	70	Y	FACU
	100 = 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: 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: NL species not used for dominance test.
PFO/PSS community, at the edge of forested area. 3/5 Strata for PFO community.

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					muck	
10-18	7.5YR 2.5/2	60	7.5YR 3/3	40	C	M	SiL	↑ o.m., mucky mineral

[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: Soil moist in 10-18" layer - surface layer dry. Assuming that groundwater comes to surface during early growing season/wet season, based on Drainage District info.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/14/2010
Applicant/Owner: Pierce Co.	County: Pierce
Investigator(s): L. Brock / R. Baker / A. Merrill	State: WA S/T/R: S34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-4

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix scouleriana *	T	40	FAC				
Sambucus racemosa *	S	80	FACU				
Salix scouleriana *	S	20	FAC				
Ranunculus repens *	H	20	FACW				
Phalaris arundinacea *	H	20	FACW				
Elepsona comunus *	H	40	NL				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 4/6, 67% *dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

PSS/PFO community - PFO 3/5 Strata

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Soil dry in both layers. Assuming GW is present in early growing season based on Drainage District info.

Larchmont DP-4

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-14	1	10YR 2/1			muck	
14-20+	2	7.5YR 2.5/2	7.5YR 4/4	many (40%), distinct	silt loam	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

High. O.M.

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-4 across from flag A-28, other side of main ditch ~20 ft. away from main ditch, ~1-2 ft. higher in elevation.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/14/10

Applicant/Owner: PC State: _____ Sampling Point: DP-4

Investigator(s): L. Brock, R. Baker, A. Merrill Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): bench above ditch Local relief (concave, convex, none): convex Slope (%): 2-3

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: DP-4 is across from flag A-28, other side of main ditch. ~20 ft away from main ditch, ~1-2 ft. higher in elevation

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix scouleriana (DBH 6"+)	40	Y	FAC
2.			
3.			
4.			
	40 = Total Cover		

Sapling/Shrub Stratum (Plot size: 5m)			
1. Sambucus racemosa	80	Y	FACU
2. Salix scouleriana	20	Y	FAC
3.			
4.			
5.			
	100 = Total Cover		

Herb Stratum (Plot size: 1m)			
1. Ranunculus repens	20	Y	FACW
2. Phalaris arundinacea	20	Y	FACW
3. Elepsona comunus	40	Y	NL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = 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: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (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: Swordfern nearby on base of elderberry. This area appears slightly drier than others (based on veg). Adjacent areas have PHAR and AT FI-FE in understory. PSS/PFO community, PFO-3/5 strata

SOIL

Sampling Point: DP-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10 YR 2/1	100					muck	
14-20+	7.5 YR 2.5/2	60	7.5 YR 4/4	40	C	M	SiL	

[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: Soil dry in both layers. Assuming that groundwater comes to surface during early growing season/wet season based on Drainage district info.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/16/2010
Applicant/Owner: Pierce County	County: Pierce State: WA
Investigator(s): L. Brock, A. Merrill	S/T/R: S 34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-5

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Alnus rubra *	T	30	FAC	Crataegus monogyna	S	5	NL
Populus balsamifera *	T	60	FAC	Blechnum spicant *	H	3	FAC
Fraxinus latifolia	S	7	FACW	Polystichum munitum *	H	2	FACU
Oemleria cerasiformis	S	2	FACU	Moss sp. *	H	5	NI
Ilex aquifolium	S	3	NL	Rubus armeniacus *	S	90	FACU
Rosa pisocarpa	S	5	FAC				
Cornus sericea *	S	30	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 4/7 57% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PFO community - 3/5 Strata
Large cottonwoods form canopy, with sub-canopy of alder and shrub layer below.

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. data	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Soil dry. Assuming GW comes to surface in the early growing season based on Drainage District Info.

Larchmont DP-5

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	1	10YR 2/1			muck	soil friable

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

High O.M.

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-5 just downslope of fill area (road easement) where maintenance crew cut in. Near flag A-1. Paired plot w/DP-6.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/16/10

Applicant/Owner: PC State: WA Sampling Point: DP-5

Investigator(s): L. Brock, A. Merrill Section, Township, Range: S 34 / T 20 N / R 3 E

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: In wetland A, DP-5 is just downslope of fill area (road easement), where maintenance crew cut in. Near flag A-1. Paired plot w/DP-6

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	30	Y	FAC
2. Populus balsamifera	60	Y	FAC
3.			
4.			
	90 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)			
1. Fraxinus latifolia (<3" DBH)	7	N	FACW
2. Oemleria cerasiformis	2	N	FACU
3. Ilex aquifolium	3	N	NL
4. Rosa pisocarpa	5	N	FAC
5. Cornus sericea	30	Y	FACW
Crataegus monogyna	5	N	NI
	52 = ~~Total Cover~~ Total		
Herb Stratum (Plot size: 1 m)			
1. Blechnum spicant	3	Y	FAC
2. Polystichum munitum	2	Y	FACU
3. Moss sp.	5	Y	NI
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: 5 m)			
1. Rubus armeniacus	90	Y	FACU
2.			
	90 = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 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: NI species not used for dominance test.
PFO - Pacific willow, cottonwood & alder form canopy over northern wetland. Large cottonwoods form canopy with sub-canopy of alders & willows below. Shrub layer beneath sub-canopy.

SOIL

Sampling Point: DP-5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10 YR 2/1	95	10 YR 4/3	5	C	M	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)
- ___ 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 friable

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:

Soil dry. Assuming groundwater comes to surface during early growing season/wet season based on Drainage District info.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Lochmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Merrill	Date: 9/16/2010 County: Pierce State: WA S/T/R: S34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-6

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Alnus rubra *	T	40	FAC	Rubus armeniacus *	S	70	FACU
Populus balsamifera *	T	60	FAC				
Rosa pisocarpa	S	5	FAC				
Crataegus monogyna	S	2	NL				
Corylus cornuta *	S	10	FACU				
Cornus sericea *	S	10	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 3/5, 60% *dominant based on 50/20 rule.

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: Yes No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

No indicators, data plot is on a slope above areas that appear to be wetter.

Larchmont DP-6

SOILS

Map Unit Name (Series & Phase) 19B Kapowsin gravelly loam

Drainage Class _____

Taxonomy (subgroup) _____

Field observations confirm mapped type? Yes No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-6	1	10YR3/2	—		SiL	
6-16	2	2.5Y4/2	7.5YR5/6	few (1%) distinct	Gr. SiL	20% gravel

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? Yes No

Soil disturbed.

Rationale for decision/remarks:

Not enough redox to be hydric

Wetland Determination (circle)

Hydrophytic vegetation present? Yes No

Hydric soils present? Yes No

Wetland hydrology present? Yes No

Is the sampling point within a wetland? Yes No

Rationale/Remarks:

NOTES: Upslope from DP-5. DP-6 is on edge of historic fill pad (road fill).

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/16/10
Applicant/Owner: PC State: WA Sampling Point: DP-6
Investigator(s): L. Brock, A. Merrill Section, Township, Range: S34/T20N/R3E
Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: 19B - Kapowsin gravelly loam 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? No Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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: Just upslope from DP-5. DP-6 is on edge of historic fill pad (road fill?)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	40	Y	FAC
2. Populus balsamifera	60	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Rosa pisocarpa	5	N	FAC
2. Crataegus monogyna	2	N	NL
3. Corylus cornuta	10	Y	FACU
4. Cornus sericea	10	Y	FACW
5.			
	27 = Total Cover		
Herb Stratum (Plot size: 1m)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ___)			
1. Rubus armeniacus	70	Y	FACU
2.			
	70 = 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: 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: Dominated by FAC trees & blackberry

SOIL

Sampling Point: DP-6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					SiL	
6-16	2.5Y 4/2	79	7.5YR 5/6	1	C	M	Gr. SiL	20% 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 ✓

Remarks: Soil appears to be disturbed. Not enough redox to meet hydric soil criteria

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: No indicators - data plot is on slope above areas that appear to be wetter.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock	Date: 9/16/2010 County: Pierce State: WA S/T/R: S34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-7

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix lucida *	S	40	FACW				
Salix scouleriana *	S	60	FAC				
Rubus spectabilis	S	20	FAC				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 2/2 100% *dominant based on 50/20 rule.

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PSS / PFO community

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. 2010	Water Marks: Yes No Drift Lines: (Yes) No	Sediment Deposits: Yes No Drainage Patterns: (Yes) No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. (Yes) No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: (Yes) No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Soil moist but not saturated. Indicators of hydrology present

Larchmont DP-7

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12	1	10YR 2/1	10YR 4/4	many (20%) distinct	muck	
			7.5YR 5/6	common (5%) distinct-prom.		
12-18	2	2.5Y 5/2	7.5YR 4/6	many (25%) distinct	Loamy sand	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

High O.M.

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: In wetland, ~20 ft. from edge @ flag A-16. NW side.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/16/2010

Applicant/Owner: PC State: WA Sampling Point: DP-7

Investigator(s): L. Brock Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 2-3

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: In wetland ~20 ft. from edge, flag A-16. NW side of wetland.

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: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lucida	40	Y	FACW
2. Salix scouleriana	60	Y	FAC
3. Rubus spectabilis	20	N	FAC
4.			
5.			
	120 = Total Cover		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 80% matted leaves

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

✓ 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: PSS/PFO portion of wetland.

SOIL

Sampling Point: DP-7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	75	10YR 4/4	20	C	M	muck	
			7.5YR 5/6	5	C	PL,RC		
12-18	2.5Y 5/2	75	7.5YR 4/6	25	C	M	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 ___

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: Soil moist but not saturated.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-8

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Agrostis sp. *	H	60	FAC				
Iris pseudacoris *	H	50	NI				
Equisetum telmateia	H	5	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 1/2 50% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities ✓ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PEM ditch.

Iris known to grow in wet areas.

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: (Yes) No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: (Yes) No
Dept. of inundation: 1 inches Depth to free water in pit: to surface inches Depth to saturated soil: to surface inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: Yes No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Water marks on Iris, drainage patterns in ditch. Soil sat to surface

DP-8

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? Yes (No)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	1	10 YR 4/1	10 YR 4/6	many (20%), distinct	Gr. SiL	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Surface O.M. layer likely removed when ditch was excavated.

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: Located in AB ditch, near gravel driveway on Schmitt property. Near flags AB-1, AB-10. Paired with DP-9.

Ditch drains SE corner of the project area.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-8

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34/T20N/R3E

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

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Located in AB ditch, near gravel driveway on Shmitt property. Near flags AB-1 & AB-10. Paired w/ DP-9.

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: 3x5' - ditch only)			
1. Agrostis sp.	60	Y	FAC
2. Iris pseudacoris	50	Y	NI
3. Equisetum telmateia	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115 = 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: 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
- ✓ 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: NI species not used for dominance test.
PEM ditch

SOIL

Sampling Point: DP-8

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10 YR 4/1	80	10 YR 4/6	20	C	M,PL	Gr. SiL	

[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): 1"

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Water marks on Iris, drainage patterns in ditch. Soil Sat. to surface

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Body	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? mowed lawn (Yes) No	Community ID: Transect ID: Plot ID: DP-9

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Agrostis sp. *	H	70	FAC				
Poa sp.	H	20	—				
Trifolium sp. *	H	30	—				
Taraxacum officinale	H	5	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 1/2, 50% * dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks:

Unable to identify Poa + Trifolium species.

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date.	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? Yes (No)
Rationale for decision/remarks:

Larchmont DP-9

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-9	1	10YR 3/2			mucky loam	
		10YR 4/4				
9-16	2	10YR 3/2	7.5YR 4/4	common (5%) distinct	SaL	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

High. O.M. - mucky mineral

Wetland Determination (circle)

Hydrophytic vegetation present? Yes (No)

Hydric soils present? (Yes) No

Wetland hydrology present? Yes (No)

Is the sampling point within a wetland? Yes (No)

Rationale/Remarks:

NOTES: Upland plot near AB ditch. Paired w/DP-8.

~1-1.5' higher than ditch.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-9

Investigator(s): L. Brock, A. Booy Section, Township, Range: _____

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): 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? Yes Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Upland plot near AB ditch, Area is maintained & mowed lawn. ~1-1.5' higher in elevation than ditch. Paired plot w/DP-8 near flag AB10.

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: 1m)			
1. Agrostis sp.	70	Y	FAC
2. Poa sp.	20	N	—
3. Trifolium sp.	30	Y	—
4. Taraxacum officinale	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125 = 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: 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
- ✓ 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: Can't identify lawn grasses to species because lawn is well-maintained & recently mowed. & clover

SOIL

Sampling Point: DP-9

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10 YR 3/2	50					Mucky loam	
	10 YR 4/4	50						
9-16	10 YR 3/2	95	7.5 YR 4/4	5	C	M	SaL	

[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:

Moist but not saturated. Assuming that ditch provides drainage for the lawn.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? mowed lawn (Yes) No	Community ID: Transect ID: Plot ID: DP-10

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix sitchensis *	T	20	FACW	Taraxacum officinale	H	20	FACU
Acer macrophyllum *	T	40	FACU	Poa sp.	H	30	—
Robinia pseudoacacia *	T	40	FACU				
Robinia pseudoacacia *	S	5	FACU				
Agrostis sp. *	H	90	FAC				
Ranunculus repens	H	25	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 2/5, 40% *dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks: mowed lawn - can't identify grasses

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: Yes No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? Yes (No)
Rationale for decision/remarks:

No hydro indicators. Lawn slightly higher than surrounding area, is likely better drained.

Larchmont DP-10

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? Yes No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-8	1	10YR 2/2	—		muck	
8-18	2	7.5YR 4/6			muck	
		10YR 5/2	diatomaceous earth			

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/remarks:

Organic

Wetland Determination (circle)

Hydrophytic vegetation present? Yes No

Hydric soils present? Yes No

Wetland hydrology present? Yes No

Is the sampling point within a wetland? Yes No

Rationale/Remarks:

NOTES: Upland plot in north lawn next to Schmitt house. Area is maintained + mowed. Paired plot with DP-11. DP-10 is outside of wetland between flags A-45 + A-46.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-10

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): flat - lawn Local relief (concave, convex, none): — Slope (%): 1-2

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck 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? Yes Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: Upland plot in lawn north of Shmitt house. Area is well-maintained & mowed. Paired plot with DP-11. DP-10 is outside of wetland between flags A45 & A46.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sitchensis (~12" DBH)	20	Y	FACW
2. Acer macrophyllum	40	Y	FACU
3. Robinia pseudoacacia	40	Y	FACU
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5m)			
1. Robinia pseudoacacia (saplings)	5	Y	FACU
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Agrostis sp.	90	Y	FAC
2. Ranunculus repens	25	N	FACW
3. Taraxacum officinale	20	N	FACU
4. Poa sp.	30	N	—
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	165	= 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (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: Mowed lawn - can't identify grasses.

SOIL

Sampling Point: DP-10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 2/2	100					muck	
8-18	7.5 YR 4/6	80					muck	
	10 YR 5/2	20	(diatomaceous earth mixed in)					

[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: No hydro indicators. Lawn is slightly higher than surrounding field, is likely better drained.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brick, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-11

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Phalaris arundinacea*	H	70	FACW				
Agrostis sp. *	H	40	FAC				
Vicia sp. (vetch)	H	2	—				
Rubus armeniacus*	S	10	FACU				

HYDROPHYTIC VEGETATION INDICATORS: PEM community

% of dominants OBL, FACW, & FAC: 2/3, 67% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Assuming GW is present in early growing season based on info from Drainage District.

Larchmont DP-11

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-18	1	10 YR 2/2	—		muck	
18+	2	10 YR 5/2	7.5 YR 4/4	many (40%) distinct	Sa L	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks: Soil similar to DP-1, dry organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: In large field, SE portion of wetland, near flag A-46. Paired with DP-10.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-11

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): flat field Local relief (concave, convex, none): concave-flat Slope (%): —

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: In wetland A in large field. Near flag A-46 + Shmitt lawn. Paired with DP-10.

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: 1m)			
1. Phalaris arundinacea	70	Y	FACW
2. Agrostis sp.	40	Y	FAC
3. Vicia sp. (vetch)	2	N	—
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	112 = Total Cover		
Woody Vine Stratum (Plot size: 5m)			
1. Rubus armeniacus	10	Y	FACU
2.			
	10 = 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: 3 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: PEM

SOIL

Sampling Point: DP-11

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10 YR 2/2	100					muck	
18+	10 YR 5/2	60	7.5 YR 4/4	40	C	M	Sal	

[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 similar to DP-1, dry

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: Assuming soil is saturated near surface when groundwater levels rise, based on info from drainage district.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-12

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Malus fusca *	T	40	FACW				
Salix scouleriana *	T	30	FAC				
Salix lucida *	T	20	FACW				
Spiraea douglasii *	S	40	FACW				
Rosa pisocarpa *	S	75	FAC				
Rubus laciniatus *	S	10	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 5/6, 83% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PFO/PSS community

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:
Assuming GW-saturation is present during early growing season based on info from Drainage district.

Larchmont DP-12

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-10	1	10YR 2/1	—		muck	
10-18	2	10YR 2/2	—		muck	
		10YR 3/3				

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: In wetland, ~50 ft west of DP-2, ~1' in elevation above ditch. Area accessed via mowed swath. DP-12 located to the north of the mowed line.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-12

Investigator(s): L. Brock, A. Body Section, Township, Range: S34/T20N/R3E

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: In wetland ~50 ft. west of DP-2, ~1' in elevation above ditch. Area accessed via mowed swath. DP-12 located to the north of this mowed line.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus fusca	40	Y	FACW
2. Salix scouleriana	30	Y	FAC
3. Salix lucida	20	Y	FACW
4.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5m)			
1. Spiraea douglasii	40	Y	FACW
2. Rosa pisocarpa	75	Y	FAC
3.			
4.			
5.			
	115	= Total Cover	

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

Woody Vine Stratum (Plot size: 5m)			
1. Rubus laciniatus	10	Y	FACU
2.			
	10	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (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: PFO/PSS community

SOIL

Sampling Point: DP-12

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 2/1	100					muck	
10-18	10 YR 2/2	50					muck	
	10 YR 3/3	50						

[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:

Assuming soil is saturated near the surface during the early growing/wet season, based on info from Drainage District.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/22/2010
Applicant/Owner: Pierce County	County: Pierce
Investigator(s): L. Brock, A. Booy	State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-13

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix sitchensis*	T	60	FAC	Rubus armeniacus	S	2	FACU
Oemleria cerasiformis	S	15	FACU	Polystichum munitum*	H	50	FACU
Rubus spectabilis	S	25	FAC				
Sambucus racemosa	S	15	FACU				
Corylus cornuta*	S	70	FACU				
Acer macrophyllum	S	5	FACU				

HYDROPHYTIC VEGETATION INDICATORS: PFO/PSS community

% of dominants OBL, FACW, & FAC: 1/3, 33% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

No hydro indicators

Larchmont DP-13

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-8	1	10YR 3/2	—		mucky loam	
8-16	2	10YR 3/1	—		mucky silt loam	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

mucky mineral

Wetland Determination (circle)

Hydrophytic vegetation present? Yes (No)

Hydric soils present? (Yes) No

Wetland hydrology present? Yes (No)

Is the sampling point within a wetland? Yes (No)

Rationale/Remarks:

NOTES:

Located in upland island near main ditch intersection with east-west ditch. Paired plot with DP-14. DP-13 ~ 20 feet away from flag U3-1.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-13

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34/T20N/R3E

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

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Upland Island near main ditch intersection with east-west ditch. Paired plot with DP-14. DP-13 is ~20ft away from U3-1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix scouleriana	60	Y	FAC
2.			
3.			
4.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5m)			
1. Oemleria cerasiformis	15	N	FACU
2. Rubus spectabilis	25	N	FAC
3. Sambucus racemosa	15	N	FACU
4. Corylus cornuta	70	Y	FACU
5. Acer macrophyllum (2" DBH)	5	N	FACU
Rubus armeniacus	2	N = ~~Total Cover~~	FACU
Herb Stratum (Plot size: 1m)	132	Total	
1. Polystichum munitum	50	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= 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: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (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: PFO/PSS

SOIL

Sampling Point: DP-13

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Mucky loam	
8-16	10YR 3/1	100					Mucky silt loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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: No hydro indicators

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-14

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix sitchensis *	T	80	FACW				
Oemleria cerasiformis *	S	10	FACU				
Athyrium filix-femina	H	2	FACW				
Ranunculus repens	H	2	FACW				
Phalaris arundinacea *	H	100	FACW				
Rubus armeniacus *	S	5	FACU				

HYDROPHYTIC VEGETATION INDICATORS: PFO community

% of dominants OBL, FACW, & FAC: 2/4, 50%

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

Dominants in shrub layer skew dominance test. Invasives present

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date.	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Assuming GW & saturation are present early in the growing season based on info from Drainage District.

Larchmont DP-14

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12	1	10YR 2/2	—		muck	
12-16	2	10YR 3/3	—		SaL	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: Paired with plot DP-13. DP-14 is in wetland A in ditch, west of flag U3-3.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-14

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34, T20N, R3E

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 1-2

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Paired with Plot DP-13. DP-14 is in wetland A in ditch, just west of flag U3-3.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sitchensis	80	Y	FACW
2.			
3.			
4.			
	80 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Oemleria cerasiformis	10	Y	FACU
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Athyrium filix-femina	2	N	FACW
2. Ranunculus repens	2	N	FACW
3. Phalaris arundinacea	100	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: 5m)			
1. Rubus armeniacus	5	Y	FACU
2.			
	5 = 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: 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 = 0
FACW species	184	x 2 = 368
FAC species	0	x 3 = 0
FACU species	15	x 4 = 60
UPL species		x 5 =
Column Totals:	199 (A)	428 (B)

Prevalence Index = B/A = 2.15

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: PFO community.

SOIL

Sampling Point: DP-14

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 2/2	100					Muck	
12-16	10 YR 3/3	100					SaL	

[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:

Assuming that soil is saturated near the surface when GW levels rise in early growing/wet season, based on info from Drainage District.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Body	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-15

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix sitchensis *	T	80	FACW				
Malus fusca *	T	30	FACW				
Spiraea douglasii *	S	10	FACW				
Phalaris arundinacea *	H	60	FACW				
Ipomoea sp.	V	10	NL				
Rubus armeniacus *	S	15	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

PFO community - large willows

% of dominants OBL, FACW, & FAC: 4/5, 80%

* Dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date.	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: 1" inches Depth to free water in pit: to surface inches Depth to saturated soil: to surface inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Water flowing to the west

Larchmont DP-15

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	1	10YR 2/1	—		muck	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES:

DP-15 is in East-West ditch, in wetland. Paired plot with DP-16.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-15

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34 / T20N / R3E

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 1

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: DP-15 in East-West Ditch, in wetland A. Paired plot w/DP-16. Near flag A-53.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sitchensis	80	Y	FACW
2. Malus fusca	30	Y	FACW
3.			
4.			
	110	= Total Cover	

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

Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	60	Y	FACW
2. Ipomoea sp.	10	N	NL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	

Woody Vine Stratum (Plot size: 5m)			
1. Rubus armeniacus	15	Y	FACU
2.			
	15	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (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: PFO community, willows are large. Cottonwoods beyond plot.

SOIL

Sampling Point: DP-15

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10 YR 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)
- ___ 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): 1" - flowing

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

water flowing to the west.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-16

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Corylus cornuta *	T	45	FACU				
Salix scouleriana *	T	20	FAC				
Populus balsamifera *	T	30	FAC				
Polygonum cuspidatum *	S	15	NI				
Polystichum munitum *	H	40	FACW				
Rubus armeniacus *	S	15	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 2/6, 33%

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? Yes (No)
Rationale for decision/remarks:

Soil dry. At higher elevation - appears to be drained by ditch.

Larchmont DP-16

SOILS

Map Unit Name (Series & Phase) Dupont muck / Kapowsin gravelly loam

Drainage Class poorly drained (Dupont)

Taxonomy (subgroup) _____

Field observations confirm mapped type? Yes No

Near boundary of these two units - matches Dupont series

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-18	1	10YR 2/2	—		muck	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? Yes No

Hydric soils present? Yes No

Wetland hydrology present? Yes No

Is the sampling point within a wetland? Yes No

Rationale/Remarks:

NOTES: Paired plot with DP-15, on berm above ditch. Near flag A-53.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-16

Investigator(s): L. Brock, A. Body Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck/Kapowsin gravelly loam 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? No Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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: Paired plot with DP-15, on berm above ditch. Near flag A53.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Corylus cornuta	45	Y	FACU
2. Salix scouleriana	20	Y	FAC
3. Populus balsamifera	30	Y	FAC
4.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 m)			
1. Polygonum cuspidatum	15	Y	NI
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Polystichum munitum	40	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size: 5 m)			
1. Rubus armeniacus	15	Y	FACU
2.			
	15	= 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: 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 ___	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: NI species not used in dominance test.

SOIL

Sampling Point: DP-16

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10 YR 2/2	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)
- ___ 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: Soil dry. At higher elevation - appears to be drained by ditch.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, M. Muscari	Date: 9/23/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-17

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Malus fusca *	T	90	FACW	Rubus laciniatus	S	5	FACU
Ilex aquifolium *	S	10	NL				
Prunus emarginata *	S	5	FACU				
Sambucus racemosa *	S	10	FACU				
Polystichum munitum *	H	40	FACU				
Rubus armeniacus *	S	30	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 1/5, 20% * dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? Yes (No)
Rationale for decision/remarks:

on slope (slight slope) above wetland

Larchmont DP-17

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	1	10YR 2/1	—		muck	
16-26	2	10YR 2/2	10YR 5/6	few (1%) distinct	mucky loam	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ✓ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ✓ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? Yes (No)

Hydric soils present? (Yes) No

Wetland hydrology present? Yes (No)

Is the sampling point within a wetland? Yes (No)

Rationale/Remarks:

NOTES: Near flag A-34, in upland on west side of Wetland A.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/23/2010

Applicant/Owner: PC State: WA Sampling Point: DP-17

Investigator(s): L. Brock, M. Muscari Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): convex Slope (%): 3-5

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Near flag A-34, in upland (West side of wetland A)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Malus fusca	90	Y	FACW
2.			
3.			
4.			
	90 = Total Cover		

Sapling/Shrub Stratum (Plot size: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ilex aquifolium	10	Y	NL
2. Prunus emarginata	5	Y	FACU
3. Sambucus racemosa	10	Y	FACU
4.			
5.			
	25 = Total Cover		

Herb Stratum (Plot size: 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Polystichum munitum	40	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rubus armeniacus	30	Y	FACU
2. Rubus laciniatus	5	N	FACU
	35 = Total Cover		

% Bare Ground in Herb Stratum 40%

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (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: NL species not used in dominance test.

SOIL

Sampling Point: DP-17

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					muck	
16-26	10YR 2/2	99	10YR 5/6	1	C	M	mucky 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:

On slope (slight slope) above wetland.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, M. Muscari	Date: 9/23/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-18

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Phalaris arundinacea	H	100	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 1/1, 100% PEM ditch

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: Yes No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Moist in top 6", drier (but still moist) below. Likely flowing/standing water in early growing season based on info from Drainage District.

Larchmont DP-18

SOILS

Map Unit Name (Series & Phase) Kapowsin gravelly loam

Drainage Class moderate

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-6	1	10YR 2/2	—		Silt loam	
6-9	2	5Y 5/1	7.5YR 5/8	(many-20%) distinct	Clay loam	
9-16	3	5Y 5/1	7.5YR 5/8	many-40%, distinct	Clay loam	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: In AC-ditch, north side of Wetland A.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/23/2010

Applicant/Owner: PC State: WA Sampling Point: DP-18

Investigator(s): L. Brock, M. Muscari Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 2-3

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

Soil Map Unit Name: Kapowsin gravelly loam 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (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: In wetland AC-Ditch, west edge

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: 1m)			
1. Phalaris arundinacea	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = 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: 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

___ 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: PEM ditch

SOIL

Sampling Point: DP-18

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 2/2	100					Sil	
6-9	5Y 5/1	80	7.5YR 5/8	20	C	M	Cl loam	
9-16	5Y 5/1	60	7.5YR 5/8	40	C	M	Cl 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:

Moist in top 6", drier (but still moist) below, likely flowing/standing water in early growing season based on info from Drainage District.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/14/2010
Applicant/Owner: Pierce County	County: Pierce State: WA
Investigator(s): L. Brock, R. Baker, A. Merrill	S/T/R: T20N, R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-1

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Rosa pisocarpa	S	30	FAC	Hypericum formosum	H	2	FAC
Amelanchier alnifolia	S	1	FACU				
Crataegus monogyna	S	Trace	FACU				
Rubus armeniacus	S	2	FACU				
Agrostis sp.	H	10	FAC				
Elymus repens	H	40	NL				
Polygonum (pink) sp.	H	Trace	FACW/OBL				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 2/3 66%

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: date - Sept.	Water Marks: Yes (No) Drift Lines: Yes (No)	Sediment Deposits: Yes (No) Drainage Patterns: Yes (No)
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes (No) FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes (No)
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other: Surface soil cracks, stunted/stressed plants.	

Wetland hydrology present? (Yes) No Soil dry in top layer. Moist below 17"
Rationale for decision/remarks:
Area is a discrete swale. Assuming hydrology based on Drainage District Info that groundwater comes to surface during early growing season.

Larchmont DP-1

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-17	1	10YR2/1	7.5YR 3/4	Common, dist. (10%)	muck	
		10YR3/2				
17-23	2	2.5Y 4/2	10YR3/4	many, dist (40%)	loamy sand	
23+	3	2.5Y 6/2	2.5Y 5/3	Common	Sand	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-1 located in field, north of the MacDonald/Schmitt shared property boundary. North of flag A-44 ~30 ft.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/14/10

Applicant/Owner: PC State: WA Sampling Point: DP-1

Investigator(s): L. Brock, R. Baker, A. Merrill Section, Township, Range: T20N, R3E

Landform (hillslope, terrace, etc.): field-flat Local relief (concave, convex, none): none Slope (%): —

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont Muck NWI classification: PSS-NWI mapping

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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: DP-1 located in field, north of the McDonald/Schmitt shared property boundary. North of flag A-44 ~30 feet.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa pisocarpa	30	Y	FAC
2. Amelanchier alnifolia	1	N	FACU
3. Crataegus monogyna	TR	N	FACU
4. Rubus armeniacus	2	N	FACU
5.			
	33 = Total Cover		

Herb Stratum (Plot size: 1 m.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Agrostis sp.	10	Y	FAC
2. Elymus repens	40	Y	NL
3. Polygonum sp. (pink flower-smartweed)	1	N	FACW/OBL
4. Hypericum formosum	2	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	53 = Total Cover		

Woody Vine Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
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
- ✓ 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: NL species not used for dominance test

Plant community: PEM

SOIL

Sampling Point: DP-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-17	10 YR 2/1	45	7.5 YR 3/4	10	C	M	Muck	
	10 YR 3/2	45						
17-23	2.5 Y 4/2	60	10 YR 3/4	40	C	M	Loamy Sand	
23+	2.5 Y 6/2	98	2.5 Y 5/3	2	C	M	Sand	small pockets of clay – redox occurs w/in pockets of the clay

[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: Soil is dry in top layer. Soil moist below 17". Area is in a discrete swale. Soil surface has cracks and plants are more sparse and stunted than in surrounding areas. Assuming based on Drainage District info that groundwater comes to surface during the early growing season.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce Co. Investigator(s): L. Brock / R. Baker / A. Merrill	Date: 9/14/2010 County: Pierce State: WA S/T/R: S34 / 20N / 3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-2

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Malus fusca *	S	60	FACW	Phalaris arundinacea *	H	5	FACW
Salix sitchensis *	S	20	FACW	Carex hendersonii *	H	2	FAC
Salix lucida *	S	20	FACW	Polystichum munitum	H	1	FACU
Spiraea douglasii	S	15	FACW				
Crataegus monogyna	S	1	FACU				
Ilex aquifolium	S	Trace	NL				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 5/5 100% * dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

PSS plant community

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: (Yes) No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No Soil slightly moist from 0-16". In adjacent ditch
Rationale for decision/remarks: areas (above and below data plot) soil surface appears to hold water - surface is bare except for willows. Few herbs compared to adjacent wetland. Assuming ditches hold water during early growing season based on Drainage District info.

Larchmont DP-2

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-7	1	10 YR 3/1	—		muck	
7-16	2	10 YR 2/1	7.5 YR 3/3	common (5%), distinct	muck	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-2 located in central ditch. Access to ditch from 9th Ave, along a swath that has been mowed for monitoring wells.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/14/10

Applicant/Owner: PC State: WA Sampling Point: DP-2

Investigator(s): L. Brock, R. Baker, A. Merrill Section, Township, Range: S34 / T20 N / R3 E

Landform (hillslope, terrace, etc.): depression - ditch Local relief (concave, convex, none): concave Slope (%): —

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: DP-2 located in central ditch. Access to ditch from 9th Ave, along a swath that has been mowed for monitoring wells.

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: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Malus fusca	60	Y	FACW
2. Salix sitchesis	20	Y	FACW
3. Salix lucida	20	Y	FACW
4. Spiraea douglasii	15	N	FACW
5. Crataegus monogyna	1	N	FACU
Ilex aquifolium	Trace	N	NL
	116 Total	~~= Total Cover~~	

Herb Stratum (Plot size: 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Phalaris arundinacea	5	Y	FACW
2. Carex hendersonii	2	Y	FAC
3. Polystichum munitum	1	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	8 = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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: PSS plant community.

SOIL

Sampling Point: DP-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	10 YR 3/1	100					muck	
7-16	10 YR 2/1	95	7.5 YR 3/3	5	C	M,PL	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)
- ___ 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: Soil slightly moist from 0-16". In adjacent ditch areas (above and below data plot) soil surface appears to hold water - surface is bare except for willows - few herbs compared to adjacent wetland. Assuming that ditches hold water during early growing season based on Drainage District info.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/14/2010
Applicant/Owner: Pierce Co.	County: Pierce State: WA
Investigator(s): L. Brock / R. Baker	S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-3

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix scouleriana *	T	30	FAC	Rosa pisocarpa *	S	20	FAC
Phalaris arundinacea *	H	30	FACW				
Ipomoea sp. *	H	40	NL				
Lactuca serriola	H	5	FACU				
Rubus lacinatus *	S	30	FACU				
Rubus armeniacus *	S	70	FACU				

HYDROPHYTIC VEGETATION INDICATORS: PFO - 3 out of 5 strata.

% of dominants OBL, FACW, & FAC: 3/6 50% * dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PFO/PSS Plant community, at the edge of forested area.

Upland invasives skew dominance test. Without blackberry, site would likely be dominated by hydrophytic veg.

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Soil moist in 10-18" layer - surface layer dry. Assuming GW present in the early growing season - based on Drainage District info.

Larchmont DP-3

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-10	1	10YR 2/1	—		muck	
10-18	2	7.5YR 2.5/2	7.5YR 3/3	many (40%)	Silt loam	

Hydric Soil Indicators: (Check all that apply)

- ___ Histosol
- ✓ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic moisture regime
- ___ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ___ Concretions
- ___ High organic content in surface layer of sandy soils
- ___ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-3 located on former Boschee property ~15 ft. south of East-West ditch. Area is ~2 ft. higher in elevation than the ditch.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/14/10

Applicant/Owner: PC State: WA Sampling Point: DP-3

Investigator(s): L. Brock, R. Baker Section, Township, Range: S34 / T20 N / R3E

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: DP-3 located on former Boschee property, ~15 ft. south of East-West ditch, Area is ~2 ft. higher in elevation than ditch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix scouleriana	30	Y	FAC
2.			
3.			
4.			
	Y = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Rosa pisocarpa	20	Y	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Phalaris arundinacea	30	Y	FACW
2. Ipomoea sp.	40	Y	NL
3. Lactuca serriola	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. Rubus laciniatus	30	Y	FACU
2. Rubus armeniacus	70	Y	FACU
	100 = 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: 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: NL species not used for dominance test.
PFO/PSS community, at the edge of forested area. 3/5 Strata for PFO community.

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					muck	
10-18	7.5YR 2.5/2	60	7.5YR 3/3	40	C	M	SiL	↑ o.m., mucky mineral

[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: Soil moist in 10-18" layer - surface layer dry. Assuming that groundwater comes to surface during early growing season/wet season, based on Drainage District info.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/14/2010
Applicant/Owner: Pierce Co.	County: Pierce
Investigator(s): L. Brock / R. Baker / A. Merrill	State: WA S/T/R: S34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-4

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix scouleriana *	T	40	FAC				
Sambucus racemosa *	S	80	FACU				
Salix scouleriana *	S	20	FAC				
Ranunculus repens *	H	20	FACW				
Phalaris arundinacea *	H	20	FACW				
Elepsona comunus *	H	40	NL				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 4/6, 67% *dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

PSS/PFO community - PFO 3/5 Strata

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Soil dry in both layers. Assuming GW is present in early growing season based on Drainage District info.

Larchmont DP-4

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-14	1	10YR 2/1			muck	
14-20+	2	7.5YR 2.5/2	7.5YR 4/4	many (40%), distinct	silt loam	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

High. O.M.

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-4 across from flag A-28, other side of main ditch ~20 ft. away from main ditch, ~1-2 ft. higher in elevation.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/14/10

Applicant/Owner: PC State: _____ Sampling Point: DP-4

Investigator(s): L. Brock, R. Baker, A. Merrill Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): bench above ditch Local relief (concave, convex, none): convex Slope (%): 2-3

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: DP-4 is across from flag A-28, other side of main ditch. ~20 ft away from main ditch, ~1-2 ft. higher in elevation

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix scouleriana (DBH 6"+)	40	Y	FAC
2.			
3.			
4.			
	40 = Total Cover		

Sapling/Shrub Stratum (Plot size: 5m)			
1. Sambucus racemosa	80	Y	FACU
2. Salix scouleriana	20	Y	FAC
3.			
4.			
5.			
	100 = Total Cover		

Herb Stratum (Plot size: 1m)			
1. Ranunculus repens	20	Y	FACW
2. Phalaris arundinacea	20	Y	FACW
3. Elepsona comunus	40	Y	NL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = 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: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (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: Swordfern nearby on base of elderberry. This area appears slightly drier than others (based on veg). Adjacent areas have PHAR and AT FI-FE in understory. PSS/PFO community, PFO-3/5 strata

SOIL

Sampling Point: DP-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10 YR 2/1	100					muck	
14-20+	7.5 YR 2.5/2	60	7.5 YR 4/4	40	C	M	SiL	

[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: Soil dry in both layers. Assuming that groundwater comes to surface during early growing season/wet season based on Drainage district info.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/16/2010
Applicant/Owner: Pierce County	County: Pierce State: WA
Investigator(s): L. Brock, A. Merrill	S/T/R: S 34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-5

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Alnus rubra *	T	30	FAC	Crataegus monogyna	S	5	NL
Populus balsamifera *	T	60	FAC	Blechnum spicant *	H	3	FAC
Fraxinus latifolia	S	7	FACW	Polystichum munitum *	H	2	FACU
Oemleria cerasiformis	S	2	FACU	Moss sp. *	H	5	NI
Ilex aquifolium	S	3	NL	Rubus armeniacus *	S	90	FACU
Rosa pisocarpa	S	5	FAC				
Cornus sericea *	S	30	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 4/7 57% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PFO community - 3/5 Strata
Large cottonwoods form canopy, with sub-canopy of alder and shrub layer below.

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. data	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Soil dry. Assuming GW comes to surface in the early growing season based on Drainage District Info.

Larchmont DP-5

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	1	10YR 2/1			muck	soil friable

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

High O.M.

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: DP-5 just downslope of fill area (road easement) where maintenance crew cut in. Near flag A-1. Paired plot w/DP-6.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/16/10

Applicant/Owner: PC State: WA Sampling Point: DP-5

Investigator(s): L. Brock, A. Merrill Section, Township, Range: S 34 / T 20 N / R 3 E

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: In wetland A, DP-5 is just downslope of fill area (road easement), where maintenance crew cut in. Near flag A-1. Paired plot w/DP-6

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	30	Y	FAC
2. Populus balsamifera	60	Y	FAC
3.			
4.			
	90 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5 m)			
1. Fraxinus latifolia (<3" DBH)	7	N	FACW
2. Oemleria cerasiformis	2	N	FACU
3. Ilex aquifolium	3	N	NL
4. Rosa pisocarpa	5	N	FAC
5. Cornus sericea	30	Y	FACW
Crataegus monogyna	5	N	NI
	52 = ~~Total Cover~~ Total		
Herb Stratum (Plot size: 1 m)			
1. Blechnum spicant	3	Y	FAC
2. Polystichum munitum	2	Y	FACU
3. Moss sp.	5	Y	NI
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: 5 m)			
1. Rubus armeniacus	90	Y	FACU
2.			
	90 = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ 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: NI species not used for dominance test.
PFO - Pacific willow, cottonwood & alder form canopy over northern wetland. Large cottonwoods form canopy with sub-canopy of alders & willows below. Shrub layer beneath sub-canopy.

SOIL

Sampling Point: DP-5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10 YR 2/1	95	10 YR 4/3	5	C	M	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)
- ___ 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 friable

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:

Soil dry. Assuming groundwater comes to surface during early growing season/wet season based on Drainage District info.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Lochmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Merrill	Date: 9/16/2010 County: Pierce State: WA S/T/R: S34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-6

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Alnus rubra *	T	40	FAC	Rubus armeniacus *	S	70	FACU
Populus balsamifera *	T	60	FAC				
Rosa pisocarpa	S	5	FAC				
Crataegus monogyna	S	2	NL				
Corylus cornuta *	S	10	FACU				
Cornus sericea *	S	10	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 3/5, 60% *dominant based on 50/20 rule.

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: Yes No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

No indicators, data plot is on a slope above areas that appear to be wetter.

Larchmont DP-6

SOILS

Map Unit Name (Series & Phase) 19B Kapowsin gravelly loam

Drainage Class _____

Taxonomy (subgroup) _____

Field observations confirm mapped type? Yes No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-6	1	10YR3/2	—		SiL	
6-16	2	2.5Y4/2	7.5YR5/6	few (1%) distinct	Gr. SiL	20% gravel

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? Yes No

Soil disturbed.

Rationale for decision/remarks:

Not enough redox to be hydric

Wetland Determination (circle)

Hydrophytic vegetation present? Yes No

Hydric soils present? Yes No

Wetland hydrology present? Yes No

Is the sampling point within a wetland? Yes No

Rationale/Remarks:

NOTES: Upslope from DP-5. DP-6 is on edge of historic fill pad (road fill).

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/16/10
Applicant/Owner: PC State: WA Sampling Point: DP-6
Investigator(s): L. Brock, A. Merrill Section, Township, Range: S34/T20N/R3E
Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5
Subregion (LRR): Lat: Long: Datum:
Soil Map Unit Name: 19B - Kapowsin gravelly loam 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? No Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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: Just upslope from DP-5. DP-6 is on edge of historic fill pad (road fill?)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	40	Y	FAC
2. Populus balsamifera	60	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Rosa pisocarpa	5	N	FAC
2. Crataegus monogyna	2	N	NL
3. Corylus cornuta	10	Y	FACU
4. Cornus sericea	10	Y	FACW
5.			
	27 = Total Cover		
Herb Stratum (Plot size: 1m)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: ___)			
1. Rubus armeniacus	70	Y	FACU
2.			
	70 = 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: 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: Dominated by FAC trees & blackberry

SOIL

Sampling Point: DP-6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					SiL	
6-16	2.5Y 4/2	79	7.5YR 5/6	1	C	M	Gr. SiL	20% 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 ✓

Remarks: Soil appears to be disturbed. Not enough redox to meet hydric soil criteria

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: No indicators - data plot is on slope above areas that appear to be wetter.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock	Date: 9/16/2010 County: Pierce State: WA S/T/R: S34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-7

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix lucida *	S	40	FACW				
Salix scouleriana *	S	60	FAC				
Rubus spectabilis	S	20	FAC				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 2/2 100% *dominant based on 50/20 rule.

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PSS / PFO community

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. 2010	Water Marks: Yes No Drift Lines: (Yes) No	Sediment Deposits: Yes No Drainage Patterns: (Yes) No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. (Yes) No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: (Yes) No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Soil moist but not saturated. Indicators of hydrology present

Larchmont DP-7

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12	1	10YR 2/1	10YR 4/4	many (20%) distinct	muck	
			7.5YR 5/6	common (5%) distinct-prom.		
12-18	2	2.5Y 5/2	7.5YR 4/6	many (25%) distinct	Loamy sand	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

High O.M.

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: In wetland, ~20 ft. from edge @ flag A-16. NW side.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/16/2010

Applicant/Owner: PC State: WA Sampling Point: DP-7

Investigator(s): L. Brock Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 2-3

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: In wetland ~20 ft. from edge, flag A-16. NW side of wetland.

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: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lucida	40	Y	FACW
2. Salix scouleriana	60	Y	FAC
3. Rubus spectabilis	20	N	FAC
4.			
5.			
	120 = Total Cover		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 80% matted leaves

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

✓ 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: PSS/PFO portion of wetland.

SOIL

Sampling Point: DP-7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	75	10YR 4/4	20	C	M	muck	
			7.5YR 5/6	5	C	PL,RC		
12-18	2.5Y 5/2	75	7.5YR 4/6	25	C	M	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 ___

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: Soil moist but not saturated.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-8

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Agrostis sp. *	H	60	FAC				
Iris pseudacoris *	H	50	NI				
Equisetum telmateia	H	5	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 1/2 50% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities ✓ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PEM ditch.

Iris known to grow in wet areas.

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: (Yes) No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: (Yes) No
Dept. of inundation: 1 inches Depth to free water in pit: to surface inches Depth to saturated soil: to surface inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: Yes No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Water marks on Iris, drainage patterns in ditch. Soil sat to surface

DP-8

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? Yes (No)

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	1	10 YR 4/1	10 YR 4/6	many (20%), distinct	Gr. SiL	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Surface O.M. layer likely removed when ditch was excavated.

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: Located in AB ditch, near gravel driveway on Schmitt property. Near flags AB-1, AB-10. Paired with DP-9.

Ditch drains SE corner of the project area.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-8

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34/T20N/R3E

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

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Located in AB ditch, near gravel driveway on Shmitt property. Near flags AB-1 & AB-10. Paired w/ DP-9.

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: 3x5' - ditch only)			
1. Agrostis sp.	60	Y	FAC
2. Iris pseudacoris	50	Y	NI
3. Equisetum telmateia	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115 = 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: 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
- ✓ 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: NI species not used for dominance test.
PEM ditch

SOIL

Sampling Point: DP-8

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10 YR 4/1	80	10 YR 4/6	20	C	M,PL	Gr. SiL	

[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): 1"

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Water marks on Iris, drainage patterns in ditch. Soil Sat. to surface

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Body	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? mowed lawn (Yes) No	Community ID: Transect ID: Plot ID: DP-9

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Agrostis sp. *	H	70	FAC				
Poa sp.	H	20	—				
Trifolium sp. *	H	30	—				
Taraxacum officinale	H	5	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 1/2, 50% * dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks:

Unable to identify Poa + Trifolium species.

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date.	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? Yes (No)
Rationale for decision/remarks:

Larchmont DP-9

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-9	1	10YR 3/2			mucky loam	
		10YR 4/4				
9-16	2	10YR 3/2	7.5YR 4/4	common (5%) distinct	SaL	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

High. O.M. - mucky mineral

Wetland Determination (circle)

Hydrophytic vegetation present? Yes (No)

Hydric soils present? (Yes) No

Wetland hydrology present? Yes (No)

Is the sampling point within a wetland? Yes (No)

Rationale/Remarks:

NOTES: Upland plot near AB ditch. Paired w/DP-8.

~1-1.5' higher than ditch.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-9

Investigator(s): L. Brock, A. Booy Section, Township, Range: _____

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): 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? Yes Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Upland plot near AB ditch, Area is maintained & mowed lawn. ~1-1.5' higher in elevation than ditch. Paired plot w/DP-8 near flag AB10.

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: 1m)			
1. Agrostis sp.	70	Y	FAC
2. Poa sp.	20	N	—
3. Trifolium sp.	30	Y	—
4. Taraxacum officinale	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125 = 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: 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
- ✓ 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: Can't identify lawn grasses to species because lawn is well-maintained & recently mowed. & clover

SOIL

Sampling Point: DP-9

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-9	10 YR 3/2	50					Mucky loam	
	10 YR 4/4	50						
9-16	10 YR 3/2	95	7.5 YR 4/4	5	C	M	SaL	

[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:

Moist but not saturated. Assuming that ditch provides drainage for the lawn.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? mowed lawn (Yes) No	Community ID: Transect ID: Plot ID: DP-10

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix sitchensis *	T	20	FACW	Taraxacum officinale	H	20	FACU
Acer macrophyllum *	T	40	FACU	Poa sp.	H	30	—
Robinia pseudoacacia *	T	40	FACU				
Robinia pseudoacacia *	S	5	FACU				
Agrostis sp. *	H	90	FAC				
Ranunculus repens	H	25	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 2/5, 40% *dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks: mowed lawn - can't identify grasses

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: Yes No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? Yes (No)
Rationale for decision/remarks:

No hydro indicators. Lawn slightly higher than surrounding area, is likely better drained.

Larchmont DP-10

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? Yes No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-8	1	10YR 2/2	—		muck	
8-18	2	7.5YR 4/6			muck	
		10YR 5/2	diatomaceous earth			

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/remarks:

Organic

Wetland Determination (circle)

Hydrophytic vegetation present? Yes No

Hydric soils present? Yes No

Wetland hydrology present? Yes No

Is the sampling point within a wetland? Yes No

Rationale/Remarks:

NOTES: Upland plot in north lawn next to Schmitt house. Area is maintained + mowed. Paired plot with DP-11. DP-10 is outside of wetland between flags A-45 + A-46.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-10

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): flat - lawn Local relief (concave, convex, none): — Slope (%): 1-2

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck 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? Yes Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: Upland plot in lawn north of Shmitt house. Area is well-maintained & mowed. Paired plot with DP-11. DP-10 is outside of wetland between flags A45 & A46.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sitchensis (~12" DBH)	20	Y	FACW
2. Acer macrophyllum	40	Y	FACU
3. Robinia pseudoacacia	40	Y	FACU
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5m)			
1. Robinia pseudoacacia (saplings)	5	Y	FACU
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Agrostis sp.	90	Y	FAC
2. Ranunculus repens	25	N	FACW
3. Taraxacum officinale	20	N	FACU
4. Poa sp.	30	N	—
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	165	= 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (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: Mowed lawn - can't identify grasses.

SOIL

Sampling Point: DP-10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 2/2	100					muck	
8-18	7.5 YR 4/6	80					muck	
	10 YR 5/2	20	(diatomaceous earth mixed in)					

[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: No hydro indicators. Lawn is slightly higher than surrounding field, is likely better drained.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brick, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-11

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Phalaris arundinacea*	H	70	FACW				
Agrostis sp. *	H	40	FAC				
Vicia sp. (vetch)	H	2	—				
Rubus armeniacus*	S	10	FACU				

HYDROPHYTIC VEGETATION INDICATORS: PEM community

% of dominants OBL, FACW, & FAC: 2/3, 67% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Assuming GW is present in early growing season based on info from Drainage District.

Larchmont DP-11

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-18	1	10 YR 2/2	—		muck	
18+	2	10 YR 5/2	7.5 YR 4/4	many (40%) distinct	Sa L	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks: Soil similar to DP-1, dry organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: In large field, SE portion of wetland, near flag A-46. Paired with DP-10.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-11

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): flat field Local relief (concave, convex, none): concave-flat Slope (%): —

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: In wetland A in large field. Near flag A-46 + Shmitt lawn. Paired with DP-10.

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: 1m)			
1. Phalaris arundinacea	70	Y	FACW
2. Agrostis sp.	40	Y	FAC
3. Vicia sp. (vetch)	2	N	—
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	112 = Total Cover		
Woody Vine Stratum (Plot size: 5m)			
1. Rubus armeniacus	10	Y	FACU
2.			
	10 = 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: 3 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: PEM

SOIL

Sampling Point: DP-11

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10 YR 2/2	100					muck	
18+	10 YR 5/2	60	7.5 YR 4/4	40	C	M	Sal	

[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 similar to DP-1, dry

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: Assuming soil is saturated near surface when groundwater levels rise, based on info from drainage district.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-12

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Malus fusca *	T	40	FACW				
Salix scouleriana *	T	30	FAC				
Salix lucida *	T	20	FACW				
Spiraea douglasii *	S	40	FACW				
Rosa pisocarpa *	S	75	FAC				
Rubus laciniatus *	S	10	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 5/6, 83% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks: PFO/PSS community

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:
Assuming GW-saturation is present during early growing season based on info from Drainage district.

Larchmont DP-12

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-10	1	10YR 2/1	—		muck	
10-18	2	10YR 2/2	—		muck	
		10YR 3/3				

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: In wetland, ~50 ft west of DP-2, ~1' in elevation above ditch. Area accessed via mowed swath. DP-12 located to the north of the mowed line.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-12

Investigator(s): L. Brock, A. Body Section, Township, Range: S34/T20N/R3E

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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: In wetland ~50 ft. west of DP-2, ~1' in elevation above ditch. Area accessed via mowed swath. DP-12 located to the north of this mowed line.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus fusca	40	Y	FACW
2. Salix scouleriana	30	Y	FAC
3. Salix lucida	20	Y	FACW
4.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5m)			
1. Spiraea douglasii	40	Y	FACW
2. Rosa pisocarpa	75	Y	FAC
3.			
4.			
5.			
	115	= Total Cover	

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

Woody Vine Stratum (Plot size: 5m)			
1. Rubus laciniatus	10	Y	FACU
2.			
	10	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (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: PFO/PSS community

SOIL

Sampling Point: DP-12

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 2/1	100					muck	
10-18	10 YR 2/2	50					muck	
	10 YR 3/3	50						

[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:

Assuming soil is saturated near the surface during the early growing/wet season, based on info from Drainage District.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont	Date: 9/22/2010
Applicant/Owner: Pierce County	County: Pierce
Investigator(s): L. Brock, A. Booy	State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-13

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix sitchensis*	T	60	FAC	Rubus armeniacus	S	2	FACU
Oemleria cerasiformis	S	15	FACU	Polystichum munitum*	H	50	FACU
Rubus spectabilis	S	25	FAC				
Sambucus racemosa	S	15	FACU				
Corylus cornuta*	S	70	FACU				
Acer macrophyllum	S	5	FACU				

HYDROPHYTIC VEGETATION INDICATORS: PFO/PSS community

% of dominants OBL, FACW, & FAC: 1/3, 33% *dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

No hydro indicators

Larchmont DP-13

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-8	1	10YR 3/2	—		mucky loam	
8-16	2	10YR 3/1	—		mucky silt loam	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

mucky mineral

Wetland Determination (circle)

Hydrophytic vegetation present? Yes (No)

Hydric soils present? (Yes) No

Wetland hydrology present? Yes (No)

Is the sampling point within a wetland? Yes (No)

Rationale/Remarks:

NOTES:

Located in upland island near main ditch intersection with east-west ditch. Paired plot with DP-14. DP-13 ~ 20 feet away from flag U3-1.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-13

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34/T20N/R3E

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

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Upland Island near main ditch intersection with east-west ditch. Paired plot with DP-14. DP-13 is ~20ft away from U3-1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix scouleriana	60	Y	FAC
2.			
3.			
4.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5m)			
1. Oemleria cerasiformis	15	N	FACU
2. Rubus spectabilis	25	N	FAC
3. Sambucus racemosa	15	N	FACU
4. Corylus cornuta	70	Y	FACU
5. Acer macrophyllum (2" DBH)	5	N	FACU
Rubus armeniacus	2	N = ~~Total Cover~~	FACU
Herb Stratum (Plot size: 1m)	132	Total	
1. Polystichum munitum	50	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50	= 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: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (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: PFO/PSS

SOIL

Sampling Point: DP-13

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Mucky loam	
8-16	10YR 3/1	100					Mucky silt loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 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: No hydro indicators

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34 / T20N / R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-14

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix sitchensis *	T	80	FACW				
Oemleria cerasiformis *	S	10	FACU				
Athyrium filix-femina	H	2	FACW				
Ranunculus repens	H	2	FACW				
Phalaris arundinacea *	H	100	FACW				
Rubus armeniacus *	S	5	FACU				

HYDROPHYTIC VEGETATION INDICATORS: PFO community

% of dominants OBL, FACW, & FAC: 2/4, 50%

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

Dominants in shrub layer skew dominance test. Invasives present

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date.	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Assuming GW & saturation are present early in the growing season based on info from Drainage District.

Larchmont DP-14

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-12	1	10YR 2/2	—		muck	
12-16	2	10YR 3/3	—		SaL	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: Paired with plot DP-13. DP-14 is in wetland A in ditch, west of flag U3-3.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-14

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34, T20N, R3E

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 1-2

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Paired with Plot DP-13. DP-14 is in wetland A in ditch, just west of flag U3-3.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sitchensis	80	Y	FACW
2.			
3.			
4.			
	80 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Oemleria cerasiformis	10	Y	FACU
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Athyrium filix-femina	2	N	FACW
2. Ranunculus repens	2	N	FACW
3. Phalaris arundinacea	100	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
Woody Vine Stratum (Plot size: 5m)			
1. Rubus armeniacus	5	Y	FACU
2.			
	5 = 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: 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 = 0
FACW species	184	x 2 = 368
FAC species	0	x 3 = 0
FACU species	15	x 4 = 60
UPL species		x 5 =
Column Totals:	199 (A)	428 (B)

Prevalence Index = B/A = 2.15

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: PFO community.

SOIL

Sampling Point: DP-14

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 2/2	100					Muck	
12-16	10 YR 3/3	100					SaL	

[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:

Assuming that soil is saturated near the surface when GW levels rise in early growing/wet season, based on info from Drainage District.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Body	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-15

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Salix sitchensis *	T	80	FACW				
Malus fusca *	T	30	FACW				
Spiraea douglasii *	S	10	FACW				
Phalaris arundinacea *	H	60	FACW				
Ipomoea sp.	V	10	NL				
Rubus armeniacus *	S	15	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

PFO community - large willows

% of dominants OBL, FACW, & FAC: 4/5, 80%

* Dominant using 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date.	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: 1" inches Depth to free water in pit: to surface inches Depth to saturated soil: to surface inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Water flowing to the west

Larchmont DP-15

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	1	10YR 2/1	—		muck	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES:

DP-15 is in East-West ditch, in wetland. Paired plot with DP-16.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-15

Investigator(s): L. Brock, A. Booy Section, Township, Range: S34 / T20N / R3E

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 1

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: DP-15 in East-West Ditch, in wetland A. Paired plot w/DP-16. Near flag A-53.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sitchensis	80	Y	FACW
2. Malus fusca	30	Y	FACW
3.			
4.			
	110	= Total Cover	

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

Herb Stratum (Plot size: _____)			
1. Phalaris arundinacea	60	Y	FACW
2. Ipomoea sp.	10	N	NL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	

Woody Vine Stratum (Plot size: 5m)			
1. Rubus armeniacus	15	Y	FACU
2.			
	15	= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (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: PFO community, willows are large. Cottonwoods beyond plot.

SOIL

Sampling Point: DP-15

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10 YR 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)
- ___ 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): 1" - flowing

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

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

water flowing to the west.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, A. Booy	Date: 9/22/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-16

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Corylus cornuta *	T	45	FACU				
Salix scouleriana *	T	20	FAC				
Populus balsamifera *	T	30	FAC				
Polygonum cuspidatum *	S	15	NI				
Polystichum munitum *	H	40	FACW				
Rubus armeniacus *	S	15	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 2/6, 33%

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? Yes (No)
Rationale for decision/remarks:

Soil dry. At higher elevation - appears to be drained by ditch.

Larchmont DP-16

SOILS

Map Unit Name (Series & Phase) Dupont muck / Kapowsin gravelly loam

Drainage Class poorly drained (Dupont)

Taxonomy (subgroup) _____

Field observations confirm mapped type? Yes No

Near boundary of these two units - matches Dupont series

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-18	1	10YR 2/2	—		muck	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? Yes No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? Yes No

Hydric soils present? Yes No

Wetland hydrology present? Yes No

Is the sampling point within a wetland? Yes No

Rationale/Remarks:

NOTES: Paired plot with DP-15, on berm above ditch. Near flag A-53.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/22/2010

Applicant/Owner: PC State: WA Sampling Point: DP-16

Investigator(s): L. Brock, A. Body Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: Dupont muck/Kapowsin gravelly loam 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? No Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? No (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: Paired plot with DP-15, on berm above ditch. Near flag A53.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Corylus cornuta	45	Y	FACU
2. Salix scouleriana	20	Y	FAC
3. Populus balsamifera	30	Y	FAC
4.			
	95	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 m)			
1. Polygonum cuspidatum	15	Y	NI
2.			
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Polystichum munitum	40	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size: 5 m)			
1. Rubus armeniacus	15	Y	FACU
2.			
	15	= 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: 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 ___	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: NI species not used in dominance test.

SOIL

Sampling Point: DP-16

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10 YR 2/2	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)
- ___ 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: Soil dry. At higher elevation - appears to be drained by ditch.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, M. Muscari	Date: 9/23/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-17

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Malus fusca *	T	90	FACW	Rubus laciniatus	S	5	FACU
Ilex aquifolium *	S	10	NL				
Prunus emarginata *	S	5	FACU				
Sambucus racemosa *	S	10	FACU				
Polystichum munitum *	H	40	FACU				
Rubus armeniacus *	S	30	FACU				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 1/5, 20% * dominant based on 50/20 rule

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: Yes (No)
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: (Yes) No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? Yes (No)
Rationale for decision/remarks:

on slope (slight slope) above wetland

Larchmont DP-17

SOILS

Map Unit Name (Series & Phase) Dupont muck

Drainage Class poorly drained

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-16	1	10YR 2/1	—		muck	
16-26	2	10YR 2/2	10YR 5/6	few (1%) distinct	mucky loam	

Hydric Soil Indicators: (Check all that apply)

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic moisture regime
- ✓ Reducing conditions
- ✓ Gleyed or low-chroma colors
- ____ Concretions
- ____ High organic content in surface layer of sandy soils
- ✓ Organic streaking in sandy soils
- ✓ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ✓ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

organic soil

Wetland Determination (circle)

Hydrophytic vegetation present? Yes (No)

Hydric soils present? (Yes) No

Wetland hydrology present? Yes (No)

Is the sampling point within a wetland? Yes (No)

Rationale/Remarks:

NOTES: Near flag A-34, in upland on west side of Wetland A.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/23/2010

Applicant/Owner: PC State: WA Sampling Point: DP-17

Investigator(s): L. Brock, M. Muscari Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): convex Slope (%): 3-5

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

Soil Map Unit Name: Dupont muck 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (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: Near flag A-34, in upland (West side of wetland A)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Malus fusca	90	Y	FACW
2.			
3.			
4.			
	90 = Total Cover		

Sapling/Shrub Stratum (Plot size: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ilex aquifolium	10	Y	NL
2. Prunus emarginata	5	Y	FACU
3. Sambucus racemosa	10	Y	FACU
4.			
5.			
	25 = Total Cover		

Herb Stratum (Plot size: 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Polystichum munitum	40	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rubus armeniacus	30	Y	FACU
2. Rubus laciniatus	5	N	FACU
	35 = Total Cover		

% Bare Ground in Herb Stratum 40%

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (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: NL species not used in dominance test.

SOIL

Sampling Point: DP-17

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					muck	
16-26	10YR 2/2	99	10YR 5/6	1	C	M	mucky 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:

On slope (slight slope) above wetland.

DATA FORM 1
Routine Wetland Determination
(WA State Wetland Delineation Manual or
1987 Corps Wetland Delineation Manual)

Project Site: Larchmont Applicant/Owner: Pierce County Investigator(s): L. Brock, M. Muscari	Date: 9/23/2010 County: Pierce State: WA S/T/R: S34/T20N/R3E
Do normal circumstances exist on the site? (Yes) No Is the site significantly disturbed (atypical situation)? Yes (No) Is the area a potential problem area? Yes (No)	Community ID: Transect ID: Plot ID: DP-18

VEGETATION

Dominant Plant Species	Stratum	Percent cover	Indicator	Dominant Plant Species	Stratum	Percent cover	Indicator
Phalaris arundinacea	H	100	FACW				

HYDROPHYTIC VEGETATION INDICATORS:

% of dominants OBL, FACW, & FAC: 1/1, 100% PEM ditch

Check all indicators that apply & explain below:

Regional knowledge of plant communities _____ Wetland Plant List (Natl or regional) _____ OTHER _____
Physiological or reproductive adaptations _____ Morphological adaptations _____
Technical literature _____ Wetland plant data base _____

Hydrophytic vegetation present: (Yes) No
Rationale for Decision/Remarks:

HYDROLOGY

Is it the growing season: (Yes) No Based on: Sept. date	Water Marks: Yes No Drift Lines: Yes No	Sediment Deposits: Yes No Drainage Patterns: Yes No
Dept. of inundation: none inches Depth to free water in pit: none inches Depth to saturated soil: none inches	Oxidized Root (live roots) Channels <12 in. Yes No FAC Neutral: Yes No	Local Soil Survey: Yes No Water-stained Leaves: Yes No
Check all that apply & explain below: Stream, lake or gage data: _____ Aerial photographs: _____ Other:	Other:	

Wetland hydrology present? (Yes) No
Rationale for decision/remarks:

Moist in top 6", drier (but still moist) below. Likely flowing/standing water in early growing season based on info from Drainage District.

Larchmont DP-18

SOILS

Map Unit Name (Series & Phase) Kapowsin gravelly loam

Drainage Class moderate

Taxonomy (subgroup) _____

Field observations confirm mapped type? (Yes) No

Profile Description

Depth (inches)	Horizon	Matrix color (Munsell moist)	Mottle colors (Munsell moist)	Mottle abundance size & contrast	Texture, concretions, structure, etc.	Drawing of soil profile (match description)
0-6	1	10YR 2/2	—		Silt loam	
6-9	2	5Y 5/1	7.5YR 5/8	(many-20%) distinct	Clay loam	
9-16	3	5Y 5/1	7.5YR 5/8	many-40%, distinct	Clay loam	

Hydric Soil Indicators: (Check all that apply)

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic moisture regime
- _____ Reducing conditions
- ✓ Gleyed or low-chroma colors
- _____ Concretions
- _____ High organic content in surface layer of sandy soils
- _____ Organic streaking in sandy soils
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (explain in remarks)

Hydric soils present? (Yes) No

Rationale for decision/remarks:

Wetland Determination (circle)

Hydrophytic vegetation present? (Yes) No

Hydric soils present? (Yes) No

Wetland hydrology present? (Yes) No

Is the sampling point within a wetland? (Yes) No

Rationale/Remarks:

NOTES: In AC-ditch, north side of Wetland A.

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

Project/Site: Larchmont City/County: PC Sampling Date: 9/23/2010

Applicant/Owner: PC State: WA Sampling Point: DP-18

Investigator(s): L. Brock, M. Muscari Section, Township, Range: S34/T20N/R3E

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 2-3

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

Soil Map Unit Name: Kapowsin gravelly loam 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? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (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: In wetland AC-Ditch, west edge

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: 1m)			
1. Phalaris arundinacea	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = 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: 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

___ 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: PEM ditch

SOIL

Sampling Point: DP-18

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 2/2	100					Sil	
6-9	5Y 5/1	80	7.5YR 5/8	20	C	M	Cl loam	
9-16	5Y 5/1	60	7.5YR 5/8	40	C	M	Cl 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.)

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- ___ 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)

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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:

Moist in top 6", drier (but still moist) below, likely flowing/standing water in early growing season based on info from Drainage District.