APPENDIX C

Field Data Sheets

Table C1. Summary of Data Point Information

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro -logy**	**Hydric Soils**		**Additional Comments**
AL-04-UP9	14-Jun-06	Yes	No	Yes	No	The sampling point is located near the middle of Assessment Area 3, slightly northeast of the open field at the intersection of Lonseth and Gulf Road.
A-L04-WP08	14-Jun-06	Yes	Yes	Yes	Yes	The sampling point is situated in Assessment Area 3, near the middle of the Assessment Area, northwest of the open field at the corner of Lonseth and Gulf Road. The sampling point was not located by surveyors. Location on map is approximate.
A-L05-UP-10	23-Jan-07	No	No	No	No	The sampling point is situated near the wetland at the corner of Lonseth and Gulf in Assessment Area 9B.
A-L05-WP-12	23-Jan-07	Yes	Yes	Yes		The sampling point is situated in the wetland near the corner of Lonseth and Gulf near Assessment Area 2.
A-L06-UP-01	24-Jan-07	Yes	No	No	No	The sampling point is situated in the upland area at the southwest corner of the study area near Assessment Area 9B.
A-L06-UP-02	24-Jan-07	No	Yes	No	No	The sampling point is situated in the upland area at the southwest corner of the study area near Assessment Area 9B.
A-L06-W-02	24-Jan-07	Yes	Yes	No	Yes	The sampling point is situated in the wetland at the southwest corner of the study area near Assessment Area 9B.
A-L06-WP-01	24-Jan-07	Yes	Yes	Yes	Yes	The sampling point is situated in the wetland area at the southwest corner of the study area near Assessment Area 9B.
A-L08-UP-01	26-Jan-07	Yes	No	Yes	No	The sampling point is situated near the edge of a drainage and a wetland near the western property boundary south of Lonseth Road west of Assessment Area 8A. The sample point was not located by surveyors, so the location on the map was approximated from f

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro -logy**	**Hydric Soils**		**Additional Comments**
A-L08-WP-01	26-Jan-07	Yes	Yes	Yes	Yes	The sampling point is situated south of Henry in the wetland nearest the western property boundary near Assessment Area 10B.
A-L11-UP-01	27-Jan-07	No	No	No	No	The sampling point is situated south of Lonseth Road, slightly west of the creek in an upland field near Assessment Area 8A.
A-L11-WP-01	27-Jan-07	Yes	Yes	No	Yes	The sampling point is situated south of Henry in the wetland nearest the western property boundary in Assessment Areas 8B.
A-L12-UP-01	29-Jan-07	No	No	No	No	The sampling point is located in the northwest corner of Assessment Area 3. The sampling point was not found by surveyors. The location on the map is approximate.
A-L19-UP-01	30-Jan-07	No	No	Yes	No	The sampling point is located near an elevated portion of a field south of Aldergrove, near a small forested area east of Gulf Road in Assessment Area 3.
A-L19-WP-01	29-Jan-07	Yes	Yes	Yes	Yes	The sampling point is located in an elevated portion of a field south of Aldergrove, near a small forested area east of Gulf Road in Assessment Area 3.
A-L20-WP-01	31-Jan-07		Yes	Yes	Yes	Plot is in a grazed pasture near an elevated portion of a field south of Aldergrove, near a small forested area, west of Gulf Road in Assessment Area 3.
A-L24-UP-001	05-Feb-07	No	No	No	No	The sampling point is situated near the power line corridor, north of Lonseth Road in Grid P-6 of Assessment Unit 4.
A-L24-WP01	05-Feb-07	Yes		Yes		The sampling point is situated near the power line corridor, north of Lonseth Road in Grid P-6 of Assessment Unit 4.
A-L25-UP-001	06-Feb-07	No	No	No	No	The sampling point is located south of Lonseth Road, west of Gulf, in Assessment Area 8.

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro -logy**	**Hydric Soils**		**Additional Comments**
A-L25-WP-01	06-Feb-07	Yes	Yes	Yes	Yes	The sampling point is in the wetland south of Lonseth, west of Gulf in Assessment Area 8.
A-L26-UP-01	05-Feb-07	Yes	No	No	No	The sampling point is located in upland near the wetland B-L26. No herbaceous vegetation occurs below the forest canopy. The plot is located north of Henry road, just west of the boundary with the portion of the study area that is excluded from the prope
A-L27-UP-01	06-Feb-07	No	No	No	No	The sampling point is situated near the wetland that begins on the northeast portion of the exclusion area, south of Lonseth Road, just west of the Railroad tracks in Assessment Area 5B.
A-L27-WP-01	06-Feb-07	Yes	Yes	Yes	Yes	The sampling point is located in Assessment Area 5A.
A-L27-WP-02	06-Feb-07	Yes	Yes	Yes	Yes	The sampling point is situated in the wetland that begins on the northeast portion of the exclusion area, south of Lonseth Road, just west of the Railroad tracks in Assessment Area 5A.
A-L7-UP-01	24-Jan-07	No	No	No	No	The sampling point is located near the western boundary of the project area, along the diagonal property boundary north of Henry Road, near Assessment Area 9B.
A-L7-WP-01	24-Jan-07	Yes	Yes	No	Yes	The sampling point is located near the western boundary of the project area, along the diagonal property boundary north of Henry Road, near Assessment Area 9B.
A-L-WP-10	23-Jan-07	Yes	Yes	No	Yes	The sampling point is situated in the wetland, near the corner of Lonseth and Gulf in Assessment Area 9.
A-UP-07	12-Jun-06	No	No	Yes	No	The sampling point is located west of A-L03-F10. It is situated in the northeast corner of Assessment Area 3, and is representative of wetland communities in that area.

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro-logy**	**Hydric Soils**		**Additional Comments**
A-UP-P5	12-Jun-06	No	No	No	No	The sampling point is in Assessment area 2, near the eastern boundary of the unit. The sampling point is representative of other upland areas in the Assessment Area.
A-WP-04	12-Jun-06	Yes	Yes	Yes	Yes	Plot is located close to Lonseth at the northwest corner of Lonseth and Gulf, in Assessment Area 2.
A-WP06	12-Jun-06	Yes	Yes	Yes	Yes	Sampling point is located just east of A-L03-F10 in northeast corner of Assessment Area 3.
B-L02-PU-06	14-Jun-07	Yes	No	No	No	Plot is located east of the wetland in Assessment Area 7A. The data plot was not located by surveyors, so the location of the data plot was estimated on maps.
B-L02-PW-05	14-Jun-06	Yes	No	Yes	Yes	Sampling point is located approximately 150 feet northwest of B-L02-F157 in Assessment Area 7A. The sampling point was not located by surveyors, so the location of the sampling point was estimated on maps.
B-L03-4U	12-Jun-07	No	No	No	No	Sampling point is located near B-L03-F160 (or F60) in Assessment Area 1. The sampling point was not located by surveyors and is estimated on maps. It is representative of the upland area near the northwestern property boundary.
B-L04-1W	10-Jun-06	Yes	Yes	Yes	Yes	The sampling point is located between Lonseth and Aldergrove, west of Gulf, and southwest of B-L03-B125 in Assessment Area 1, at the north end of the parcel near the western property boundary.
B-L04-PU-02	10-Jun-06	Yes	No	No	No	Sampling point is located southeast of B-L04-F02, near the western property boundary, in Assessment Area 1.

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro-logy**	**Hydric Soils**		**Additional Comments**
B-L05-PW-07	14-Jun-06	Yes	Yes	Yes	Yes	The sampling point is located between Aldergrove and Loneseth, west of the pipeline, and 25 feet south of B-L05-F23 in Assessment Area 3. The sampling point is near the historic drainage where it opens up into a larger wetland area.
B-L06-PW8	13-Jun-06	Yes	Yes	Yes	Yes	Sampling point is between B-L06-F56 and B-L05-F112 in the historic drainage associated with Assessment Area 3.
B-L-06-UP-11	15-Jun-06	Yes	No	No	No	Sampling point is located approximately 15 feet south of A-L06-F4 in Assessment Area 3.
B-N-PW-12	16-Jun-06	Yes	No	Yes	Yes	The sampling point is in the westernmost field in Assessment Area 9A. The sample point was not located by surveyors, so the location was approximated from field notes.
B-PU-15	17-Jun-06	Yes	No	No	No	Sampling point is located north of the beach, approximately 50 feet north of the treeline and 150 feet from Gulf Road, in Assessment Area 12.
B-PU-20	30-Jan-07	No	No	No	No	The sampling point is located in Assessment Area 3, slightly west of the historic drainage.
B-PU-23	01-Feb-07	Yes	No	No	No	Ilex aquifolium and Polystichum munitum, among other species, are present further upland. The ground is covered with dead leaves and little vegetation is present. Soil pit was dug on the bank of the pond, approximately 15 feet from water's edge. Sampling
B-PU-25	01-Feb-07	Yes	No	NA	No	The sampling point is located within the cluster of small wetlands located along the drainage north of the beach and east of Gulf Road, towards the northern property boundary, in Assessment Area 13D. It is east of sampling point B-PW26.

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro -logy**	**Hydric Soils**		**Additional Comments**
B-PW-14	17-Jun-06	Yes	Yes	Yes	Yes	The sampling point Is located approximately 25 feet south of the shrub line and 100 feet east of Gulf Road, in the Coastal Lagoon, Assessment Area 12.
B-PW-16	17-Jun-06	Yes	Yes	Yes	Yes	The sampling point is located approximately 50 feet west of Gulf Road and 150 feet north of the tree line and is flagged from the road in Assessment Area 12.
B-PW-17	30-Jan-07	Yes	Yes	Yes	Yes	Sampling point connects to creek, loop A L06. The sampling point is in Assessment Area 13.
B-PW-22	01-Feb-07	Yes	Yes	Yes	Yes	Soil pit was dug approximately 2 feet from a pond. Roots and rocks in soil horizons and the B-horizon had redox features. The sampling point is in Assessment Area 13.
B-PW23	01-Feb-07	Yes	Yes	Yes	Yes	Soil pit was dug at the confluence of two drainage channels in Assessment Area 13A.
PW-18	30-Jan-07	Yes	Yes	Yes	Yes	The sampling point is in Assessment Area 3.
PW-26	01-Feb-07	Yes	Yes			The sampling point is in Assessment Area 13.
WP-AD-01	16-Jul-07	Yes	No			
WP-AD-02	16-Jul-07	Yes	No	Yes	Yes	
Z-L01-P-03	09-Jun-06	No	No	No	No	The sampling point is representative of the upland community in the southwest portion of Assessment Aea 2.
Z-L01-PU-01	09-Jun-06	No	No	No	No	Sampling point is located on the west side of the "old road" and just north of Lonseth, on the west side of the creek in Assessment Areas 2.
Z-L01-PW01	13-Jun-06	Yes	No	Yes	Yes	Sampling point is located at the south end of Assessment Area 2.
Z-L02-PW-01	13-Jun-06	Yes	No	Yes	Yes	Sampling point is located on the west side of the "old road" and just north of Lonseth, on the west side of the creek in Assessment Area 2.

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro -logy**	**Hydric Soils**		**Additional Comments**
Z-L02-PW-02	13-Jun-06	Yes	No	Yes	Yes	Sampling point is located on the west side of the "old road" and just north of Lonseth, on the west side of the creek in Assessment Area 2.
Z-L04-WP-01	15-Jun-06	Yes	No	Yes	Yes	The sampling point is in Assessment Area 11, South of Henry Road along the unnamed creek.
Z-L06-WP-01	15-Jun-06	Yes	Yes	Yes	Yes	Sampling point is west of F7 in Assessment Area 11, South of Henry Road along the unnamed creek.
Z-L08-UP-01	16-Jun-06	No	No	No	No	Sampling point is in Assessment Area 11, South of Henry Road on the east side of the unnamed creek.
Z-L13-UP-01	03-Feb-07	Yes	No	No	No	The sampling point is situated in the upland area west of the unnamed creek in Assessment Area 12.
Z-L13-UP02	23-Jan-07		No	No		The sampling point is situated in the upland area west of the unnamed creek in Assessment Area 12.
Z-L13-UP-03	23-Jan-07	No	No	No	No	The sampling point is located just west of the wetland associated with the southernmost portion of the creek in Assessment Area 12.
Z-L14-WP-01	23-Jan-07	Yes	No	No	Yes	The sampling point is located south of the small forested area south of Henry road, near the west end of the study area in Assessment Area 10A.
Z-L15-UP-02	24-Jan-07	No	No	No	No	Area is regularly hayed. Grasses are 6-10 inches tall. The sampling point is located west of the small forested parch south of Henry Road in Assessment Area 10A.
Z-L15-UP-03	24-Jan-07	No	No	No	No	Area is regularly hayed. Grasses were 6-10 inches tall, 2-3 feet tall in May. The sampling point is located west of the small forested parch south of Henry Road in Assessment Area 10A.
Z-L19-UP-01	24-Jan-07	No	No	No	No	Sampling point is located in one of two well-drained fields south of Henry Road in Assessment Area 10A.

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro -logy**	**Hydric Soils**		**Additional Comments**
Z-L19-UP-02	24-Jan-07	No	No	No	No	Sampling point is located in one of two well-drained fields south of Henry Road in Assessment Area 10A.
Z-L19-UP-03	24-Jan-07	No	No	No	No	Sampling point is located in one of two well-drained fields south of Henry Road in Assessment Area 10A.
Z-L19-WP-01	24-Jan-07	No	Yes	Yes	Yes	Sampling point is located between two well-drained fields south of Henry Road in Assessment Area 10B.
Z-L21-UP-01	06-Feb-07	No	Yes	No	No	Wetland vegetation and hydric soils are not present in the sampling point. Wetland hydrology is present, however, the presence of wetland hydrology is due primarily to recent, heavy rainfall.
Z-L21-WP-01	24-Jan-07	Yes	Yes	Yes	Yes	The presence of hydrophytic vegetation and wetland hydrology indicate that the sampling point is within a wetland.
Z-L22-UP01	06-Feb-07	No	No	No	No	The plot is in the field to the west of the wetland.
Z-L22-UP-01	24-Jan-07	No	No	No	No	The sampling point is situated south of Henry Road in a well drained field in Assessment Aea 10A.
Z-L22-UP-03	24-Jan-07	No	No	No	No	The sampling point is located in a mowed field south of Henry Road in Assessment Area 10A.
Z-L22-UP-04	24-Jan-07	No	No	No	No	The sampling point is situated in the open fields south of Henry Road in Assessment Area 10A.
Z-L22-UP-06	24-Jan-07	No	Yes	No	No	Soils are wet due to recent rain. Plot located in pasture, commonly plowed or tilled, just east of Z-L22-UP-04 in Assessment Area 10A.
Z-L22-WP01	27-Jan-07	Yes	Yes	No	Yes	The sampling point is situated in a drainage ditch at the edge of a gravel road. It appears that there are inclusions of gravel fill in the sampling point.
Z-L25-UP-01	25-Jan-07	No	No	No	No	The sampling point is located in an open field south of Henry Road that as recently been mowed and seeded in Assessment Area 9A.

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro -logy**	**Hydric Soils**		**Additional Comments**
Z-L25-WP-01	25-Jan-07	No	Yes	Yes	Yes	The sampling point is located in the wetland in the open fields north of Henry Road in Assessment Area 9A.
Z-L26-UP-02	25-Jan-07	No	No	No	No	The sampling point is located in the long field west of the creek, north of Henry Road in Assessment Area 9A.
Z-L26-UP-03	25-Jan-07	Yes	No	No	No	The sampling point is situated in the sloped field south of Henry Road in Assessment Area 9A.
Z-L26-WP-01	25-Jan-07	Yes	Yes	No	Yes	The sampling point is located in the wetland that extends through the two westernmost open fields, north of Henry Road in Assessment Area 9A.
Z-L27-UP-01	26-Jan-07	No	No	No	No	The sampling point is located east of the creek and south of Henry Road in Assessment Area 14.
Z-L27-WP-01	26-Jan-07	Yes	Yes	Yes	Yes	The sampling point is located just east of the creek, south of Henry Road in Assessment Area 14.
Z-L29-UP-01	30-Jan-07	No	?	No	No	The sample plot is located in the forested area near wetland Z-L29, just north of Henry Road near Gulf Road in Assessment Area 6.
Z-L29-UP-02	02-Feb-07	Yes	No	No	No	The sample plot is located in the forested area near wetland Z-L29, just north of Henry Road near Gulf Road in Assessment Area 6.
Z-L29-WP-01	02-Feb-07	Yes	Yes	Yes	Yes	The sample plot is located in the forested area near wetland Z-L29, just north of Henry Road near Gulf Road in Assessment Area 6.
Z-L30-UP-01	30-Jan-07	No	No	No	No	The sample plot is located in Assessment Area 13E
Z-L30-WP-01	31-Jan-07	Yes	Yes	?	Yes	The sample plot is located in Assessment Area 13E
Z-L31-WP-01	03-Feb-07	Yes	Yes	Yes	Yes	The sample plot is located in Assessment Area 4B
Z-L33-UP-01	03-Feb-07	Yes	No	No	No	Plot is located approximately 50 feet west of Kickerville Rd in Assessment Area 4B.

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro -logy**	**Hydric Soils**		**Additional Comments**
Z-L34-WP-01	06-Feb-07	Yes	Yes	Yes	Yes	Plot is located in Assessment Area 4D.
Z-L34-WP-02	06-Feb-07	Yes	Yes	Yes	Yes	Plot is located in Assessment Area 4D.
Z-L37-UP-01	06-Feb-07	No	Yes	No	No	Plot is within mowed powerline corridor in Assessment Area 4A.
Z-L37-UP-02	06-Feb-07	No	No	No	No	Plot is within mowed powerline corridor in Assessment Area 4A.
Z-L37-WP-01	06-Feb-07	Yes	Yes	Yes	Yes	Plot is located within a powerline corridor in Assessment Area 4A.
Z-L37-WP-02	06-Feb-07	Yes	Yes		Yes	Plot is located within a powerline corridor in Assessment Area 4A.
Z-L37-WP-03	06-Feb-07	Yes	Yes	Yes	Yes	Plot is located within a powerline corridor in Assessment Area 4A.
Z-L37-WP-04	03-Feb-07	Yes	Yes	Yes	Yes	The sampling point is situated near the corner of Kickerville and Lonseth Road in Assessment Area 4A.
Z-L38-UP-01	06-Feb-07	No	No	Yes	No	Plot is located in pipeline corridor near Assessment Area 4E .
Z-L43-UP-01	07-Feb-07	No	No	No	No	Sampling point located between Gulf Road and plowed field, just north of Henry Road, in Assessment Area 7B.
Z-L43-WP-01	07-Feb-07	Yes	Yes	Yes		The sampling point is located in a plowed field just north of Henry Road, in Assessment Area 7B.
Z-L47-UP-01	20-Mar-07			No		The plot is located in a mowed field.
Z-L47-UP-02	20-Mar-07			No		The plot is located in a mowed field.
Z-L47-UP-05	20-Mar-07	No	Yes	No	No	The sampling point is located in a routinely mowed field.
Z-L47-UP-08	20-Mar-07					The sampling point is located in a routinely mowed field.
Z-L47-UP-09	20-Mar-07			Yes		The sampling point is located in a routinely mowed field.
Z-L4-PU-01	15-Jun-06	No	No	No	No	Sampling point is SE of F38 in Assessment Area 7B.
Z-L5-PW-01	16-Jun-06	Yes	Yes	No	Yes	Sampling point is SE of F38 in Assessment Area 7B.

		Wetland Indicators Present			Wetland Deter-mination	
Plot ID	**Date**	**Veg**	**Hydro -logy**	**Hydric Soils**		**Additional Comments**
Z-L9-UP-01	*06-Sep-06*	*No*	*No*	No	No	Sampling point is SE of F38 in Assessment Area 2.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, M. Villarreal

Date: 17-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Shrub
Transect ID:
Plot ID: B-PU-15

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Maianthemum dilatatum	Herb	FAC	80
2. Polystichum munitum	Herb	FACU	10
3. Oemleria cerasiformis	Herb	FACU	20
4. Rubus spectabilis	Shrub	FAC+	50
5. Pseudotsuga menziesii	Tree	FACU	10
6. Acer glabrum	Tree	FAC	30
7. Alnus rubra	Tree	FAC	20
8.			

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 80%

Remarks: 80% of the dominant species are FAC. Hydrophytic vegetation is present but one dominant species is FACU and two other FACU species are present at 10%. A lot of vine maple (Acer circinatum), snowberry (Symphoricarpos albus), and Pacific bleedingheart (Dicentra formosa) are present throughout the upland area. Thimbleberry (Rubus parviflorus) noted along the roadside and just inside the wooded area.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: B-PU-15

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aqualpic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 2/2	None	/ None	Sandy Silt
8-12	B	7.5YR 3/4	None	/ None	Sandy Silt
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located north of the beach, approximately 50 feet north of the treeline and 150 feet from Gulf Road, in assessment area 12.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 23-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: A-L05
Plot ID: A-L05-UP-010

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Rubus armeniacus	Shrub	FACU	4
2. Anthoxanthum odoratum	Herb	FACU	95
3. Dactylis glomerata	Herb	FACU	1
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: The data plot was visited in January and again in March when the vegetation was in bloom to confirm species identification.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology are present.

SOILS

Plot ID: A-L05-UP-010

Map Unit Name (Series and Phase): Birchbay silt loam, 3 to 8 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 3/2	None	/ None	Sandy Loam
8-10	B	10YR 3/4	None	/ None	Sand
10-16	C	10YR 3/2	None	/ None	Sandy Loam
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil matrix is relatively low chroma, but since redoxymorphic features are not present, it does not appear that the soils are hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Wetland indicators including vegetation, hydrology and soils are not present in the sampling point. The sampling point is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated near the wetland at the corner of Lonseth and Gulf in assessment area 9B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 23-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID: A-L05
Plot ID: A-L05-WP-12

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Agrostis capillaris	Herb	FAC	25
2. Phalaris arundinacea	Herb	FACW	25
3. Carex obnupta	Herb	OBL	25
4. Juncus effusus	Herb	FACW	25
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: Most of the dominant species in the sampling point are hydrophytic. One species of dominant vegetation in the sampling point is an unidentified species of Agrostis.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 4 (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [x] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and the depth to free water in the pit indicates that wetland hydrology is present in the sampling point.

SOILS

Plot ID: A-L05-WP-12

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A	10YR 3/1	None	/ None	Sandy Loam
5-10	A2	10YR 3/1	10YR 5/6	5% / Distinct	Sandy Loam
10-16	B	10YR 3/1	5YR 2.5/1	25% / Faint	Sandy Loam
			5YR 4/6	5% / Faint	Sandy Loam
16		10YR 4/4	None	/ None	Sand/Gravel

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma colors and redoxymorphic features in the surface layer indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland?

Remarks: The presence of hydrophytic vegetation, wetland hydrology, and hydric soils indcate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the wetland near the corner of Lonseth and Gulf near assessment area 2.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: A-L06
Plot ID: A-L06-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Populus balsamifera	Tree	FAC	50
2. Alnus rubra	Tree	FAC	8
3. Acer circinatum	Tree	FAC-	5
4. Rubus spectabilis	Shrub	FAC+	45
5. Rubus armeniacus	Shrub	FACU	5
6. Athyrium filix-femina	Herb	FAC	2
7. Polystichum munitum	Herb	FACU	1
8. Ilex aquifolium	Shrub	FACU	1
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: The vegetation in the sample plot is primarily facultative, with one dominant FAC species and one dominant FAC+ species. The presence of three FACU species and one FAC- species (Acer circinatum), is generally indicative of an upland forest in the study area.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	>12 (in.)
Depth to Saturated Soil:	>12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology are present.

SOILS

Plot ID: A-L06-UP-01

Map Unit Name (Series and Phase): Birchbay silt loam, 3 to 8 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 3/6	None	/ None	Sandy Loam
6-12	A2	10YR 4/4	None	/ None	Sandy Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Organics present in the A Soil Horizon. Hydric soils are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Facultative vegetation is present, suggesting that the sampling point could be in a wetland, However, wetland hydrology and soils are not present in the sampling point. The sampling point is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the upland area at the southwest corner of the study area near assessment area 9B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: A-L06
Plot ID: A-L06-UP-02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	60
2. Acer circinatum	Tree	FAC-	5
3. Thuja plicata	Tree	FAC	5
4. Rosa pisocarpa	Herb	FAC	3
5. Rubus armeniacus	Shrub	FACU	10
6. Polystichum munitum	Herb	FACU	3
7. Rubus ursinus	Shrub	FACU	15
8. Rubus spectabilis	Shrub	FAC+	30
9. Ilex aquifolium	Shrub	FACU	1
10. Symphoricarpos albus	Shrub	FACU	5
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: The vegetation in the sample plot is facultative, with one dominant FAC species and one dominant FAC+ species. The presence of five FACU species and one FAC- species (Acer circinatum), is generally indicative of an upland forest in the study area.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: >15 (in.)
Depth to Saturated Soil: 10 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Although one primary iindicator of wetland hydrology is present, the data were collected following substantial rainfall in January.

SOILS

Plot ID: A-L06-UP-02

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	7.5YR 3/3	None	/ None	Silt Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: No indicators of hydric soils are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: The lack of hydrophytic vegetation and hydric soils indicate that the sampling point is not within a wetland. Although indicators of wetland hydrology are present, the data were collected following substantial rainfall in January. As a result, hydrology is not a strong wetland indicator.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the upland area at the southwest corner of the study area near assessment area 9B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: A-L06
Plot ID: A-L06-W-02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	5
2. Rubus armeniacus	Shrub	FACU	5
3. Rubus ursinus	Shrub	FACU	5
4. Rubus spectabilis	Shrub	FAC+	5
5. Poa annua	Herb	FAC	75
6. Phalaris arundinacea	Herb	FACW	3
7. Carex obnupta	Herb	OBL	5
8. Juncus effusus	Herb	FACW	1

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: The indicator of the only dominant species is FAC. Non dominant psecies are primarily OBL, FACW or FAC. Wetland vegetation is present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 3 (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and the depth to free water in the pit indicates that wetland hydrology is present in the sampling point.

Plot ID: A-L06-W-02

SOILS

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/2	None	/ None	Silty Sandy Clay Loam
				/	
				/	
				/	–
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Although the soils are slightly low chroma (chroma value = 2), no redoxymoprhic features are present. Therefore, the soil does not appear to be hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? Yes

Remarks: Vegetation was not a useful wetland indicator. However, because wetland hydrology was present, and the soils were questionable, it was determined that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the wetland at the southwest corner of the study area near assessment area 9B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: A-L06
Plot ID: A-L06-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Populus balsamifera	Tree	FAC	70
2. Alnus rubra	Tree	FAC	5
3. Rubus spectabilis	Shrub	FAC+	5
4. Polystichum munitum	Herb	FACU	1
5. Ranunculus repens	Herb	FACW	1
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: It appears that wetland vegetation is present in the sampling point. Ground cover consists of moss and leaves.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: 0.05 (in.)
Depth to Free Water in Pit: Surface (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [x] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is inundated, saturated in the upper 12 inches, and contains water-stained leaves. Wetland hydrology is present.

SOILS

Plot ID: A-L06-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 2/1	None	/ None	
6-12	A2	10YR 3/1	None	/ None	
12-16	B	10YR 3/2	10YR 5/4	5% / Distinct	Clay Loam
			10YR 5/6	/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Although no redoximorphic features are present in the upper 10 inches of the soil matrix, the soil is low chroma which is an indicator of hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Indicators of wetland vegetation, hydrology and soils are present. The sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the wetland area at the southwest corner of the study area near assessment area 9B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 26-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: A-L08
Plot ID: A-L08-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	40
2. Crataegus douglasii	Tree	FAC	20
3. Rubus ursinus	Shrub	FACU	40
4. Phalaris arundinacea	Herb	FACW	15
5. Rubus armeniacus	Shrub	FACU	1
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: The dominant vegetation in the plot is facultative and FACU, suggestive of an upland forest. While 75% of the dominant vegetation is FAC or FACW, the species present are not typical of wetlands in the study area.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: >16 (in.)
Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No wetland hydrology indicators are present.

SOILS

Plot ID: A-L08-UP-01

Map Unit Name (Series and Phase): Birchbay silt loam, 3 to 8 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A	10YR 3/2	None	/ None	Clay Loam
5-16	A2	10YR 3/2	7.5YR 4/6	25% / Distinct	Clay Loam
			7.5YR 5/8	5% / Distinct	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Redoxymorphic features in the upper 12 inches suggest that hydric soils are present in the sampling point. Moss and leaf litter cover 45% of the area of the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? No

Remarks: Whereas hydrophytic vegetation is present, the species are primarily FAC and not typical of wetland species in the study area. Wetland hydrology is not present. The soils show redox features in the upper 10 inches, but no other indicators of hydric soils are present. The sampling point is situated near the wetland line, but the sampling point is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated near the edge of a drainage and a wetland near the western property boundary south of Lonseth Road west of assessment area 8A. The sample point was not located by surveyors, so the location on the map was approximated from field notes.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 26-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: A-L08
Plot ID: **A-L08-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	50
2. Rubus armeniacus	Shrub	FACU	5
3. Poa annua	Herb	FAC	30
4. Carex obnupta	Herb	OBL	20
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: The presence of a dominant obligate species and that 75% of the species in the plot are OBL, FACW or FAC indicate that wetland vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 5 (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and the depth to free water in the pit indicates that wetland hydrology is present in the sampling point. Moss is present throughout.

SOILS

Plot ID: A-L08-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 3/2	None	/ None	Silty Sandy Loam
10-16	B	10YR 3/2	7.5YR 4/6	5% / Distinct	Silty Sandy Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma colors and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point. Pea-sized gravel is present throughout soil profile.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation, wetland hydrology and hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated south of Henry in the wetland nearest the western property boundary near assessment area 108.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 27-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: A-L11
Plot ID: A-L11-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Anthoxanthum odoratum	Herb	FACU	45
2. Lolium sp.	Herb	NI	25
3. Poa sp.	Herb	NI	25
4. Cirsium arvense	Herb	FACU+	2
5. Taraxacum officinale	Herb	FACU	1
6. Trifolium repens	Herb	FAC	1
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks: None of the identified vegetation is OBL, FACW, or, FAC. Wetland vegetation is not dominant.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	>16 (in.)
Depth to Saturated Soil:	>16 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: A-L11-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 3/3	None	/ None	Sandy Loam
10-16	B	10YR 4/4	None	/ None	Sandy Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present. Small gravel is present throughout the soil profile. Larger cobbles are present at 10 inches and deeper.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: While facultative species were present, much of the vegetation could not be identified to species because the field was recently mowed. The vegetation was not used as a wetland indicator. No indicators of wetland hydrology or hydric soils were present. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated south of Lonseth Road, slightly west of the creek in an upland field near assessment area 8A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 27-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID: A-L11
Plot ID: A-L11-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Juncus effusus	Herb	FACW	70
2. Carex obnupta	Herb	OBL	30
3. Holcus lanatus	Herb	FAC	15
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of the dominant species are OBL or FACW. Hydrophytic vegetaton is present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 2.5 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and the shallow depth to free water in the pit indicates that wetland hydrology is present in the sampling point.

SOILS

Plot ID: A-L11-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 2/2	None	/ None	Sandy Silt Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil profile was homogenous throughout the 16 inch soil pit in the sampling plot. No indicators of hydric soil were apparent.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? Yes

Remarks: Wetland vegetation and hydrology are present. Although indicators of hydric soils are not present, it appears that the sampling point is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated south of Henry in the wetland nearest the western property boundary in assessment areas 8B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 29-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: A-L12
Plot ID: A-L12-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Rubus armeniacus	Shrub	FACU	30
2. Phalaris arundinacea	Herb	FACW	40
3. Cirsium arvense	Herb	FACU+	1
4. Symphoricarpos albus	Shrub	FACU	1
5. Unid'd grasses	Herb	NI	40
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks: The grass species were not identified due to the season and lack of seed heads. Of the identified vegetation, only 50 percent were FAC, FACW. Not obligate species were present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology are present.

Plot ID: A-L12-UP-01

SOILS

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-7	A	10YR 3/4	None	/ None	Silty Clay Loam
7-16	A2	10YR 4/6	None	/ None	Clay Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: One FACW species was dominant (Phalaris arunidinacea), but other species present in the sampling plot (including one dominant) were FACU. One species of dominant vegetation in the sampling point is an unidentified grass species that is likely an upland species, but remains unconfirmed due to the absence of seed heads during the January sampling. Wetland hydrology and hydric soils were not present in the sampling plot. Therefore, the sampling point is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in the northwest corner of assessment area 3. The sampling point was not found by surveyors. The location on the map is approximate.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard

Date: 30-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: A-L19
Plot ID: **A-L19-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Poa sp.	Herb	NI	25
2. Trifolium repens	Herb	FAC	5
3. Cirsium arvense	Herb	FACU+	5
4. Phalaris arundinacea	Herb	FACW	25
5. Juncus effusus	Herb	FACW	25
6. Dactylis glomerata	Herb	FACU	25
7. Taraxacum officinale	Herb	FACU	25
8. Rubus armeniacus	Shrub	FACU	25
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: It is highly probable that the unidientified species of Poa is an upland species. Two FACW species and three FACU species were also dominant. Hydrophytic vegetation is not dominant in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology are present.

SOILS

Plot ID: A-L19-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/3	7.5YR 3/4	5% / Distinct	Silty Clay Loam
12-16	A2	10YR 5/4	7.5YR 4/4	25% / Distinct	Silt Loam
			10YR 6/6	25% / Distinct	
				/	-
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Few, distinct redoxymorphic features occurred in the upper 12 inches. The soil matrix is lighter than most hydric soils in the study area.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? No

Remarks: The area appears to be a small upland patch in a large wetland mosaic system. The patch of upland is large enough, that it should not be considered a part of the wetland mosaic.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located near an elevated portion of a field south of Aldergrove, near a small forested area east of Gulf Road in assessment area 3.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 29-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID: A-L19
Plot ID: A-L19-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	50
2. Unid'd grasses			40
3. Juncus effusus	Herb	FACW	5
4. Carex obnupta	Herb	OBL	5
5. Poa sp.	Herb	NI	5
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): ~100%

Remarks: The grass species were not identified due to the season and lack of seed heads. No obligate species were present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water:	Surface (in.)
Depth to Free Water in Pit:	5 (in.)
Depth to Saturated Soil:	Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [x] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The presence of primary and secondary indicators of wetland hydrology (site is inundated, saturated in the upper 12 inches, and oxidized root channels in the upper 12 inches) suggest that wetland hydrology is present in the sampling point.

SOILS

Plot ID: A-L19-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A	10YR 2/2	None	/ None	Silty Clay
5-16	A2	10YR 2/2	7.5YR 3/4	5% / Distinct	Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [x] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Relatively low chroma colors, sulfidic odor, and redoxymorphic features in the upper 10 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Although the vegetation was not identified to species, the presence of wetland hydrology and hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in an elevated portion of a field south of Aldergrove, near a small forested area east of Gulf Road in assessment area 3.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, J. Rock

Date: 31-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID: A-L20
Is the area a potential Problem Area? (If needed, explain on reverse.)	No	Plot ID: A-L20-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Ranunculus acriformis	Herb	FACW-	25
2. Juncus effusus	Herb	FACW	10
3. Festuca rubra	Herb	FAC+	25
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: The grass species were not identified due to the season and lack of seed heads.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 10 (in.)

Depth to Saturated Soil: 5 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [x] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The presence of primary and secondary indicators of wetland hydrology (saturated in the upper 12 inches, and oxidized root channels in the upper 12 inches) suggest that wetland hydrology is present in the sampling point.

SOILS

Plot ID: A-L20-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/2	7.5YR 4/6	5% / Distinct	Silt Loam
12-16	A2		10YR 5/8	25% / Distinct	Sandy Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [x] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The generally low chroma matrix, concretions, and redoxymorphic features in the upper 10 inches indicate that hydric soils are present in the sampling point. Concretions are present in A2 soil Horizon.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Although the vegetation was not identified to species, the presence of wetland hydrology and hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is in a grazed pasture near an elevated portion of a field south of Aldergrove, near a small forested area, west of Gulf Road in assessment area 3.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Kinard, N. Tursich	Date: 05-Feb-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Forest Transect ID: Plot ID: A-L24-UP-001

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1.		FAC	40
2. Alnus rubra	Shrub	FAC	2
3. Sambucus racemosa			5
4. Rubus spectabilis	Shrub	FAC+	25
5. Acer circinatum	Tree	FAC-	25
6. Betula occidentalis	Tree	FACW	10
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: Most of the vegetation in the sample plot is facultative, with one FACW species and one FAC+ species. The presence of the upland species (Sambucus) and FAC- species (Acer circinatum), is generally indicative of an upland community in the study area. As could be expected, little herbaceous vegetation occurs below the alder forest canopy.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	>16 (in.)
Depth to Saturated Soil:	>16 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology are present, even during the rainy season.

SOILS

Plot ID: A-L24-UP-001

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 3/3	None	/ None	Silt Loam
10-16	A2	10YR 3/3	7.5YR 4/4	15% / Faint	Silt Loam
				/	
				/	–
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Few, faint redoxymorphic features occurred below 10 inches of depth. The soil matrix is lighter than most hydric soils in the study area.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: No indicators of hydrophytic vegetation, wetland hydrology or hydric soils are present. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated near the power line corridor, north of Lonseth Road in Grid P-6 of Assessment Unit 4.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich, J. Rock

Date: 05-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID:
Transect ID: A-L24
Plot ID: A-L24-WP01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	75
2. Alnus rubra	Shrub	FAC	30
3. Rubus procerus	Shrub	FACU	1
4. Phalaris arundinacea	Herb	FACW	90
5. Rubus spectabilis	Shrub	FAC+	10
6. Rubus ursinus	Shrub	FACU	10
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: 100% of the dominant species are FAC or FACW. FACU species are also present in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	>14 (in.)
Depth to Saturated Soil:	>14 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: One primary indicator (drainage patterns) is present in the sampling point.

Plot ID: A-L24-WP01

SOILS

Map Unit Name (Series and Phase): Birch bay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	3/2	None	/ None	Silt Loam
10-14	A2	3/2	10YR 4/6	25% / Distinct	Silt Loam
			10YR 6/4	5% / Distinct	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present?

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland?

Remarks:

Approved by HQUSACE 3/92

Additional Comments:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich, J. Rock

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID:
Plot ID: A-L25-UP-001

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1.		FAC	15
2. Acer circinatum	Tree	FAC-	5
3. Symphoricarpos albus			25
4. Rubus spectabilis	Shrub	FAC+	10
5. Polystichum munitum	Herb	FACU	2
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Wetland vegetation is not dominant in the sampling point.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology are present, even during the rainy season.

SOILS

Plot ID: A-L25-UP-001

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	7.5YR 4/4	None	/ None	Silt Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soils are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: No indicators of wetland vegetation, hydrology or soils are present. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located south of Lonseth Road, west of Gulf, in assessment area 8.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich, J. Rock

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID:
Plot ID: A-L25-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1.		FAC	80
2. Rubus spectabilis	Shrub	FAC+	50
3. Carex obnupta			70
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: The plot is dominated by hydrophytic vegetation, including an obligate species.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	Surface	(in.)
Depth to Free Water in Pit:	Surface	(in.)
Depth to Saturated Soil:	Surface	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☑ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is inundated with water. Wetland hydrology is present in February, and likely remains throughout the growing season.

SOILS

Plot ID: A-L25-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/1	None	/ None	Silty Clay Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Although no redoximorphic features are present, the soil is low chroma which is an indicator of hydric soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Indicators of wetland vegetation, hydrology and soils are present. The sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is in the wetland south of Lonseth, west of Gulf in assessment area 8.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, J. Rock

Date: 05-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area? No
(If needed, explain on reverse.)

Community ID: Upland Forest
Transect ID:
Plot ID: A-L26-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1.		FACW	45
2. Alnus rubra	Tree	FAC	10
3. Rubus spectabilis			45
4. Rubus armeniacus	Shrub	FACU	5
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Species in the sampling point were primarily facultative. One FACW Species was dominant, but in general, hydrophytic vegetation is not dominant in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology are present, even during the rainy season.

SOILS

Plot ID: A-L26-UP-01

Map Unit Name (Series and Phase): Kickerville silt loam

Drainage Class: well drained

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-2	O		None	/ None	
2-4	A	10YR 3/1	None	/ None	Silt Loam
4-10	A2	7.5YR 4/4	None	/ None	Silt Loam
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: No indicators of hydric soils are present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: No indicators of hydrophytic vegetation, wetland hydrology or hydric soils are present. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in upland near the wetland B-L26. No herbaceous vegetation occurs below the forest canopy. The plot is located north of Henry road, just west of the boundary with the portion of the study area that is excluded from the property in assessment area 5A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich, J. Rock

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: A-L27
Plot ID: A-L27-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Acer macrophyllum	Tree	FACU	45
2. Acer circinatum	Tree	FAC-	30
3. Alnus rubra	Tree	FAC	30
4. Betula papyrifera	Tree	FAC	10
5. Rubus spectabilis	Shrub	FAC+	25
6. Ribes lacustre	Shrub	FAC+	1
7. Ribes sp.	Shrub	NI	5
8. Polystichum munitum	Herb	FACU	5
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 10%

Remarks: The plot consists of 95% bare ground. Only 10% of the species identified are hydrophytic. Wetland vegetation is not present in the sampling point.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: >10 (in.)
Depth to Saturated Soil: 12 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The soil is not saturated to the surface, even during the month of February. The free water in the pit is primariliy the result of surface flow. The depth of the free water in pit is greater than 10 inches. Wetland hydrology is not present in the sampling point.

SOILS

Plot ID: A-L27-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	O		None	/ None	
3-5	A	10YR 2/1	None	/ None	
5-16	B	7.5YR 4/2	None	/ None	Sandy Clay Loam
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: No redoxymorphic features were present in the soil pit. A narrow horizon of low chroma colors was present (A), however, it does not appear that the soils are hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Wetland vegetation, hydrology and soils are not present. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated near the wetland that begins on the northeast portion of the exclusion area, south of Lonseth Road, just west of the Railroad tracks in assessment area 5B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich, J. Rock

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID:
Plot ID: A-L27-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	30
2. Unid'd grasses	Herb	NI	70
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks: Vegetation in the sampling point was difficult to identify to species because it was recently mowed. It appears that wetland vegetation may be present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	Surface	(in.)
Depth to Free Water in Pit:	Surface	(in.)
Depth to Saturated Soil:	Surface	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☑ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☑ Drift Lines
- ☑ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Primary indicators of wetland hydrology (site is inundated, saturated in the upper 12 inches, drift lines and sediment deposits) suggest that wetland hydrology is present in the sampling point.

SOILS

Plot ID: A-L27-WP-01

Map Unit Name (Series and Phase): Kickerville silt loam

Drainage Class: well drained

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	O		None	/ None	
6-16	A	10YR 2/2	10YR 4/6	30% / Distinct	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [x] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: A six inch layer of organic material was apparent at the surface. Below 6 inches, the matrix was low chroma, and mottles were comman and distinct.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation, wetland hydrology, and hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in Assesment area 5A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich, J. Rock

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area? No
(If needed, explain on reverse.)

Community ID: PFO
Transect ID:
Plot ID: A-L27-WP-02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1.		FAC	80
2. Acer circinatum	Tree	FAC-	30
3. Rubus spectabilis			30
4. Carex obnupta	Herb	OBL	90
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: The plot is dominated by hydrophytic vegetation, including an obligate species.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: 2 (in.)

Depth to Free Water in Pit: Surface (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is inundated. Wetland hydrology is present.

SOILS

Plot ID: A-L27-WP-02

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 3/1	None	/ None	Silt Loam
6-16	A2	10YR	10YR 4/6	/ Distinct	Sandy Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [x] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil contains a sulfidic odor, low-chroma colors andd distinct mottles, indicating that the soil is hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The sampling point contains wetland vegetation, wetland hydrology and hydric soils. Therefore, the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the wetland that begins on the northeast portion of the exclusion area, south of Lonseth Road, just west of the Railroad tracks in Assesment area 5A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: A-L07
Plot ID: A-L7-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	70
2. Thuja plicata	Tree	FAC	5
3. Rubus spectabilis	Shrub	FAC+	60
4. Rosa gymnocarpa	Shrub	FACU	3
5. Rubus armeniacus	Shrub	FACU	15
6. Crataegus douglasii	Tree	FAC	5
7. Polystichum munitum	Herb	FACU	5
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: The vegetation in the sample plot is primarily facultative, with one dominant FAC species and one dominant FAC+ species. The presence of three FACU species is generally indicative of an upland forest in the study area.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology are present.

SOILS

Plot ID: A-L7-UP-01

Map Unit Name (Series and Phase): Birchbay silt loam, 3 to 8% slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	7.5YR 3/2	None	/ None	Sandy Loam
10-16	A2	7.5YR 3/3	None	/ None	Sandy Clay Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil matrix is relatively low chroma in the upper 10 inches, but since redoxymorphic features are not present, it does not appear that they soils are hydric. The soils appear to have high organics in the A horizon, however the texture is sandy and no odor was detected.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: No indicators of hydrophytic vegetation, wetland hydrology or hydric soils were present in the sampling point. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located near the western boundary of the project area, along the diagonal property boundary north of Henry Road, near assessment area 9B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site? Yes
Is the site significantly disturbed (Atypical Situation)? No
Is the area a potential Problem Area? No
(If needed, explain on reverse.)

Community ID: PFO
Transect ID: A-L07
Plot ID: A-L7-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	70
2. Thuja plicata	Herb	FAC	1
3. Ilex aquifolium	Shrub	FACU	3
4. Polystichum munitum	Herb	FACU	1
5. Carex obnupta	Herb	OBL	1
6. Rubus spectabilis	Shrub	FAC+	60
7. Symphoricarpos albus	Shrub	FACU	10
8. Rubus armeniacus	Shrub	FACU	5

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Rosa pisocarpa	Shrub	FAC	1
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: The dominance of a FAC and FAC+ species and the presence of an OBL species (Carex obnupta) indicate that wetland vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 2 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and the depth to free water in the pit indicates that wetland hydrology is present in the sampling point.

SOILS

Plot ID: A-L7-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	7.5YR 3/2	None	/ None	
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Although the soils are somewhat low chroma (chroma value = 2), no redoxymoprhic features are present. Therefore, the soil noes not appear to be hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? No

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation and hydrology indcate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located near the western boundary of the project area, along the diagonal property boundary north of Henry Road, near assessment area 9B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, N. Tursich

Date: 23-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PSS
Transect ID: A-L05
Plot ID: A-L-WP-10

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Rubus armeniacus	Shrub	FACU	100
2. Alnus rubra	Tree	FAC	100
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: It appears that wetland vegetation is present in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 5 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The soil is saturated in the upper 12 inches and the depth of free water in pit is 5 inches. It appears that wetland hydrology is present in the sampling point.

SOILS

Plot ID: A-L-WP-10

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/2	None	/ None	Sandy Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Although the soils are slightly low chroma (chroma value = 2), no redoxymoprhic features are present. Therefore, the soil does not appear to be hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation and hydrology may indcate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the wetland, near the corner of Lonseth and Gulf in assessment area 9.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, V. Mead

Date: 12-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PSS
Transect ID: L-03
Plot ID: A-UP-07

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Acer macrophyllum	Tree	FACU	60
2. Populus tremuloides	Tree	FAC+	15
3. Acer circinatum	Tree	FAC-	30
4. Rubus spectabilis	Shrub	FAC+	10
5. Polystichum munitum	Herb	FACU	10
6. Rubus parviflorus	Shrub	FAC-	20
7. Athyrium filix-femina	Herb	FAC	10
- Bare ground			80

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 29%

Remarks: Fewer than 50% of the dominant species are OBL, FACW, or FAC

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks:

SOILS

Plot ID: A-UP-07

Map Unit Name (Series and Phase): Birchbay silt loam, 0 to 3% slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	A	7.5YR 2.5/2	None	/ None	Loam
3-18	B	10YR 3/2	10YR 5/2	3% / Faint	Sandy Loam
			7.5YR 5/8	25% / Distinct	Sandy Loam
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The presence of redox features in the upper 12 inches indicate that hydric soils are present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? No

Remarks: The lack of hydrophytic vegetation or wetland hydrology indicate that the sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located west of A-L03-F10. It is situated in the northeast corner of assessment area 3, and is representative of wetland communities in that area.

SOILS

Plot ID: A-UP-P5

Map Unit Name (Series and Phase):

Drainage Class:

Taxonomy (Subgroup):

Field Observations Confirm Mapped Type?

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A1	10YR 3/2	None	/ None	Silt Loam
10-12	A2	10YR 2/2	None	/ None	Silt Loam
12-18	B	10YR 4/2	10YR 2/2	40% / Faint	Silt Loam
			10YR 4/4	3% / Distinct	Silt Loam
			10YR 4/6	3% / Faint	Silt Loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: There are no indicators of hydric soils in the upper 12 inches of the soil profile. The surface layer contains approximately 1 inch of organic leaf on top of soil.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: No indicators of wetland vegetaion, wetland hydrology or hydric soils are present. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is in Assessment area 2, near the eastern boundary of the unit. The sampling point is representative of other upland areas in the the assessment aresa.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Kinard, M. Villarreal

Date: 12-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: L-02
Plot ID: A-WP-04

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	90
2. Rubus spectabilis	Shrub	FAC+	25
3. Spiraea douglasii	Shrub	FACW	40
4. Geum macrophyllum	Herb	FACW-	20
5. Ranunculus repens	Herb	FACW	20
6. Veronica americana	Herb	OBL	20
7. Carex obnupta	Herb	OBL	20
8. Poa annua	Herb	FAC	80

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Oemleria cerasiformis (FACU) is also present in the sampling plot at less than 20%. 100% of the dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: 10 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is saturated in the upper 12 inches, indicating that wetland hydrology is present in the sampling point.

SOILS

Plot ID: A-WP-04

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	A	10YR 3/2	None	/ None	
3-18	A2	2.5YR 3/2	10YR 5/6	35% /	Silt Loam
			10YR 4/6	5% /	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [x] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is located close to Lonseth at the northwest corner of Lonseth and Gulf, in assessment area 2.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, V. Mead

Date: 12-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: L03
Plot ID: A-WP06

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	60
2. Populus balsamifera	Tree	FAC	20
3. Thuja plicata	Tree	FAC	20
4. Acer circinatum	Tree	FAC-	10
5. Rubus spectabilis	Shrub	FAC+	10
6. Lonicera involucrata	Shrub	FAC+	10
7. Cornus sericea	Shrub	FACW	20
8. Spiraea douglasii	Shrub	FACW	10

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Polystichum munitum	Herb	FACU	10
10. Glyceria elata	Herb	FACW+	60
11. Phalaris arundinacea	Herb	FACW	10
12. Carex obnupta	Herb	OBL	10
13. Ranunculus acris	Herb	FACW-	10
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: 100% of the dominant species are FAC or FACW. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	3 (in.)
Depth to Saturated Soil:	Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and contains free water in the pit. Wetland hydrology is present in the sampling point.

SOILS

Plot ID: A-WP06

Map Unit Name (Series and Phase): Birchbay Silt Loam, 0 to 3 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthodslopes

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	A	10YR 2/1	None	/ None	Silt
3-12	B	10YR 4/1	10YR 6/6	3% /	Silty Clay
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located just east of A-L03-F10 in northeast corner of assessment area 3.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: E. Hale, M. Villarreal	Date: 14-Jun-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Forest Transect ID: B-L02 Plot ID: B-L02-PU-06

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	40
2. Populus balsamifera	Tree	FAC	20
3. Rubus spectabilis	Shrub	FAC+	40
4. Rubus parviflorus	Shrub	FAC-	10
5. Rubus discolor	Shrub	FACU	10
6. Oemleria cerasiformis	Herb	FACU	10
7. Symphoricarpos albus	Shrub	FACU	10
8. Rubus ursinus	Shrub	FACU	20
9. Polystichum munitum	Herb	FACU	15
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: 75% of the dominant species are FAC or FAC+. Hydrophytic vegetation is present but no FACW or OBL species are present. One FACU species (Rubus ursinus) is dominant with many other FACU species present at 10% to 15%.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

- Depth of Surface Water: None (in.)
- Depth to Free Water in Pit: None (in.)
- Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: B-L02-PU-06

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-13	A	7.5YR 3/2	None	/ none	Silt Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is located east of the wetland in assessment area 7A. The data plot was not located by surveyors, so the location of the data plot was estimated.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, M. Villarreal

Date: 14-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PSS
Transect ID: B-L02
Plot ID: B-L02-PW-05

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	75
2. Spiraea douglasii	Shrub	FACW	40
3. Lonicera involucrata	Shrub	FAC+	20
4. Symphoricarpos albus	Shrub	FACU	15
5. Carex obnupta	Herb	OBL	90
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: 100% of the dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	None (in.)
Depth to Saturated Soil:	None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☑ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Only one secondary indicator of wetland hydrology is present but sampling point was observed in mid-June. This area may show additional indicators of wetland hydrology during the growing season.

SOILS

Plot ID: B-L02-PW-05

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 2/1	None	/ None	Clay Loam
8-12	B	10YR 4/1	10YR 7/8	5% / Faint	Clay Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Wetland hydrology is not present due to seasonal dryness. Area is assumed to be in a wetland due to presence of hydrophytic vegetation and hydric soils.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located approximately 150 feet northwest of B-L02-F157 in assessment area 7A. The sampling point was not located by surveyors, so the location of the sampling point was estimated.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale

Date: 12-Jun-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Shrub
Transect ID: B-L03
Plot ID: **B-L03-4U**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Maianthemum dilatatum	Herb	FAC	70
2. Rubus spectabilis	Shrub	FAC+	20
3. Sorbus aucuparia	Tree	UPL	20
4. Sambucus racemosa	Shrub	FACU	20
5. Rubus parviflorus	Shrub	FAC-	20
6. Acer circinatum	Tree	FAC-	20
7. Alnus rubra	Tree	FAC	75
8. Dryopteris expansa	Herb	UPL	25

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Polystichum munitum	Herb	FACU	
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 38%

Remarks: Also present nearby is holly (Ilex aquifolia), sword fern (Polystichum munitum), and snowberry (Symphoricarpos albus). Only 38% of the dominant species are FAC or FAC+. Other dominant vegetation includes FAC-, FACU, and UPL species. Wetland vegetation does not appear to be dominant in this sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: B-L03-4U

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A	10YR 2/2	None	/ None	Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Samping point is located near B-L03-F160 (or F60) in assessment area 1. The sampling point was not located by surveyors, but it is representative of the upland area near the northwestern property boundary.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, M. Villarreal

Date: 10-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: B-L04
Plot ID: B-L04-1W

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Ranunculus acris	Herb	FACW-	20
2. Rubus spectabilis	Shrub	FAC+	20
3. Phalaris arundinacea	Herb	FACW	20
4. Carex sp.	Herb	NI	20
5. Carex obnupta	Herb	OBL	20
6. Urtica dioica	Herb	FAC+	20
7. Populus tremuloides	Tree	FAC+	20
8. Alnus rubra	Tree	FAC	75

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Populus balsamifera	Tree	FAC	20
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 89%

Remarks: Lady fern (Athyrium filix-femina), Indian plum (Oemleria cersiformis), and red elderberry (Sambucus racemosa) are also presen, along with moss at the bottom of the trees. 89% of the dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [x] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [x] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is located within 25 feet of standing water. Indicators present include drainage patterns (indicated by old road beds) and water-stained leaves. The sampling point was observed in mid-June and may show additional indicators of wetland hydrology during earlier parts of the growing season.

SOILS

Plot ID: B-L04-1W

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 3/1	None	/ None	Silt Loam
6-13	B	10YR 4/2	7.5YR 4/6	30% /	Silt
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation, wetland hydroogy and hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located between Lonseth and Aldergrove, west of Gulf, and southwest of B-L03-B125 in assessment area 1, at the north end of the parcel near the western property boundary.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, M. Villarreal

Date: 10-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: B-L04
Plot ID: B-L04-PU-02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	75
2. Sorbus aucuparia	Tree	UPL	20
3. Rubus spectabilis	Shrub	FAC+	20
4. Sambucus racemosa	Shrub	FACU	20
5. Symphoricarpos albus	Shrub	FACU	20
6. Maianthemum dilatatum	Herb	FAC	75
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks: Black twinberry (Lonicera involucrata, FAC+), is also present in the area. 50% of the dominant species are FAC or FAC+. The other dominant species are FACU and UPL.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: B-L04-PU-02

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	7.5YR 2.5/3	None	/ None	Silt Loam
8-16	A	7.5YR 2.5/3	7.5YR 4/6	50% / Prominent	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Redoximorphic features are present in the upper 12 inches, but the soils do not exhibit low chroma color, indicating that hydric soils are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located southeast of B-L04-F02, near the western property boundary, in assesment area 1.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, M. Villarreal

Date: 14-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: B-L05
Plot ID: B-L05-PW-07

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	50
2. Populus balsamifera	Tree	FAC	10
3. Lonicera involucrata	Shrub	FAC+	20
4. Rubus spectabilis	Shrub	FAC+	20
5. Acer circinatum	Tree	FAC-	10
6. Rosa nutkana	Shrub	FAC	10
7. Carex obnupta	Herb	OBL	30
8. Phalaris arundinacea	Herb	FACW	10

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Carex sp.	Herb	NI	30
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 80%

Remarks: 80% of the dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☑ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are present.

SOILS

Plot ID: B-L05-PW-07

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	7.5YR 3/1	7.5YR 6/6	15% / Faint	Clay Loam
6-12	B	10YR 5/2	10YR 6/8	40% /	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 10 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located between Aldergrove and Loneseth, west of the pipeline, and 25 feet south of B-L05-F23 in assessment area 3. The sampling point is near the historic drainage where it opens up into a larger wetland area.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: E. Hale, M. Villarreal	Date: 13-Jun-06 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PFO Transect ID: B-L06 Plot ID: B-L06-PW8

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	55
2. Rubus spectabilis	Shrub	FAC+	30
3. Lysichiton americanum	Herb	OBL	40
4. Athyrium filix-femina	Herb	FAC	30
5. Oemleria cerasiformis	Herb	FACU	20
6. Polystichum munitum	Herb	FACU	20
7. Acer circinatum	Tree	FAC-	20
8. Ranunculus acris	Herb	FACW-	40

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Veronica americana	Herb	OBL	50
10. Claytonia lanceolata	Herb	FAC-	20
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 60%

Remarks: 60% of the dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

- Depth of Surface Water: 1 (in.)
- Depth to Free Water in Pit: (in.)
- Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☑ Inundated
- ☐ Saturated in Upper 12 Inches
- ☑ Water Marks
- ☑ Drift Lines
- ☑ Sediment Deposits
- ☑ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The historic drainage is 3 to 4 feet wide on average and banks are 6 inches high. Wetland hydrology indicators are present.

SOILS

Plot ID: B-L06-PW8

Map Unit Name (Series and Phase): Birchbay silt loam, 0 to 3 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	7.5YR 2.5/1	None	/ None	Silt Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Pebbles were observed throughout the soil profile. Low chroma color indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is between B-L06-F56 and B-L05-F112 in the historic drainage associated with assessment area 3.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, M. Villarreal

Date: 15-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: B-L06
Plot ID: B-L-06-UP-11

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	75
2. Ilex aquifolium	Shrub	NI	10
3. Acer circinatum	Tree	FAC-	10
4. Holodiscus discolor	Shrub	UPL	10
5. Rubus spectabilis	Shrub	FAC+	40
6. Symphoricarpos albus	Shrub	FACU	10
7. Polystichum munitum	Herb	FACU	10
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: 100% of dominant species are FAC or FAC+. Hydrophytic vegetation is present. Other species present (all at 10%) are FAC-, FACU, and UPL.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: B-L-06-UP-11

Map Unit Name (Series and Phase): Birchbay silt loam, 0 to 3 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-9	A	10YR 3/2	None	/ None	Loam
9-14	A2	10YR 5/3	None	/ None	Sandy Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located approximately 15 feet south of A-L06-F4 in assessment area 3.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, K. Dunkin

Date: 16-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID: Field "N"
Plot ID: B-N-PW-12

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Carex obnupta	Herb	OBL	30
2. Juncus ensifolius	Herb	FACW	30
3. Juncus effusus	Herb	FACW	20
4. Alopecurus pratensis	Herb	FACW	10
5. Cirsium arvense	Herb	FACU+	15
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: 100% of the dominant species are FACW or OBL. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: 14 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Soils were moist to the surface but only saturated up to 14 inches. The sampling point was observed in mid-June and may show additional indicators of wetland hydrology during earlier parts of the growing season.

SOILS

Plot ID: B-N-PW-12

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	2.5Y 2.5/1	None	/ None	Silt Loam
9-15	B	2.5Y 5/2	7.5Y 5/4	40% /	Silt Loam with fine gravels
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Fine roots present in the A Horizon and root channels in the B Horizon. Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Hydrophytic vegetation and low chroma soils indicate that the sampling point is within a wetland. Wetland hydrology is not present due to seasonal dryness.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is in the westernmost field in assessment area 9A. The sample point was not located by surveyors, so the location was approximated from field notes.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, J. Rock

Date: 30-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: B-L08
Plot ID: B-PU-20

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Symphoricarpos albus	Shrub	FACU	15
2. Dactylis glomerata	Herb	FACU	40
3. Agrostis sp.	Herb	NI	10
4. Rubus ursinus	Shrub	FACU	5
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: One dominant species in the sampling point is an unidentified Agrostis that is likely upland, but remains unconfirmed due to the absence of seed heads during the January sampling. All other species, including the dominant species (Dactylis glomerata), are FACU. Hydrophytic vegetation is not present in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: B-PU-20

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/4	10YR 5/8	3% / Faint	Sandy Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: High chroma color indicates non-hydric soils.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: The lack of hydrophytic vegetation, wetland hydrology, and hydric soils indicate that the sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The samplint point is located in assessment area 3, slighlty west of the historic drainage.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, J. Rock, E. Christensen

Date: 01-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID:
Plot ID: B-PU-23

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Rubus discolor	Shrub	FACU	10
2. Rubus spectabilis	Shrub	FAC+	70
3. Alnus rubra	Tree	FAC	90
4.			
5.			
6.			
7.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of dominant vegetation is FAC or FAC+. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: B-PU-23

Map Unit Name (Series and Phase): Birchbay silt loam, 3 to 8 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	O	10YR 2/1	None	/ None	
3-14	A	10YR 3/3	None	/ None	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of wetland hydrology and hydric soils, it is determined that this data plot is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Ilex aquifolium and Polystichum munitum, among other species, are present further upland. The ground is covered with dead leaves and little vegetation is present. Soil pit was dug on the bank of the pond, approximately 15 feet from water's edge. Sampling point is located in assessment area 13F.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, J. Rock

Date: 01-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: B-L24
Plot ID: **B-PU-25**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	65
2. Alnus rubra	Shrub	FAC	10
3. Rubus spectabilis	Shrub	FAC+	25
4. Polystichum munitum	Herb	FACU	5
5. Ilex aquifolium	Shrub	NI	1
6.			
7.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of the dominant species are FAC or FAC+. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: B-PU-25

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? N/A

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	O			/	
3-16	A			/	Sand
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil profile could not be completed due to heavy concentration of roots within the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? NA

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of wetland hydrology, it is determined that this data plot is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located within the cluster of small wetlands located along the drainage north of the beach and east of Gulf Road, towards the northern property boundary, in assessment area 13D. It is east of sampling point B-PW26.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, M. Villarreal

Date: 17-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID: Near Shore
Plot ID: B-PW-14

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Rosa pisocarpa	Shrub	FAC	20
2. Spiraea douglasii	Shrub	FACW	20
3. Typha latifolia	Herb	OBL	30
4. Scirpus microcarpus	Herb	OBL	20
5. Eleocharis palustris	Herb	OBL	20
6. Potentilla anserina	Herb	OBL	30
7. Carex obnuota	Herb	OBL	10
8. Distichlis spicata	Herb	FACW	20
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of dominant species are FAC, FACW, or OBL. Hyrophytic vegetation is dominant.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: Surface (in.)

Depth to Free Water in Pit: Surface (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [x] Drift Lines
- [x] Sediment Deposits
- [x] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are present.

SOILS

Plot ID: B-PW-14

Map Unit Name (Series and Phase): Neptune very gravelly sandy loam, 0 to 3% slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Entic haploxerolls

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-14	O	7.5YR 2.5/3	None	/ None	Peat-like
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [x] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Soil is highly organic humus and standing water is present. Hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point Is located approximately 25 feet south of the shrub line and 100 feet east of Gulf Road, in the Coastal Lagoon, assessment area 12.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, M. Villarreal

Date: 17-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID:
Plot ID: B-PW-16

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Lysichiton americanum	Herb	OBL	20
2. Maianthemum dilatatum	Herb	FAC	20
3. Equisetum telmateia	Herb	FACW	5
4. Athyrium filix-femina	Herb	FAC	10
5. Dicentra formosa	Herb	FACU	25
6. Cornus stolonifera	Herb	FACW	20
7. Rubus spectabilis	Shrub	FAC+	40
8. Alnus rubra	Tree	FAC	60

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 83%

Remarks: 83% of the dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water:	Surface	(in.)
Depth to Free Water in Pit:	Surface	(in.)
Depth to Saturated Soil:	Surface	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [x] Drift Lines
- [ ] Sediment Deposits
- [x] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are present.

SOILS

Plot ID: B-PW-16

Map Unit Name (Series and Phase): Birchbay silt loam, 3 to 8 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	7.5YR 2.5/1	None	/ None	Silt
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [x] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and the presence of a sulfidic odor indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located approximately 50 feet west of Gulf Road and 150 feet north of the tree line and is flagged from the road in assessment area 12.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: E. Hale, J. Rock	Date: 30-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PEM Transect ID: B-L09 Plot ID: **B-PW-17**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	90
2. Rubus armeniacus	Shrub	FACU	3
3.			
4.			
5.			
6.			
7.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of dominant vegetation is FACW. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 12 (in.)

Depth to Saturated Soil: 10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The point was sampled during a wet time of the year with recent heavy rainfall. The soils are not inundated nor saturated above 10 inches and may not meet wetland criteria during the growing season.

SOILS

Plot ID: B-PW-17

Map Unit Name (Series and Phase): Birchbay silt loam, 0 to 3 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10YR 4/2	None	/ None	Silt Loam
4-16	A2	10YR 3/2	7.5YR 4/6	5% / Distinct	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [x] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Relatively low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The combination of hydrophytic vegetation, soil saturation to the surface and inundation, and presence of hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point connects to creek, loop A L06. The sampling point is in assessment area 13.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, J. Rock, E. Christensen

Date: 01-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: B-L11
Plot ID: B-PW-22

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	40
2. Rubus spectabilis	Shrub	FAC+	75
3. Alnus rubra	Tree	FAC	90
4.			
5.			
6.			
7.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: Indicators for Glyceria species occurring in the region are FACW+ or OBL. The indicator for Phalaris arundinacea is FACW. The other dominant species are FAC and FAC+. Hydrophytic vegetation is present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 6 (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [x] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and the depth to free water in the pit and the presence of water marks indicates that wetland hydrology is present in the sampling point.

SOILS

Plot ID: B-PW-22

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-2	O	10YR 2/1	None	/ None	
2-8	A	10YR 3/2	None	/ None	Loam
8-16	B	2.5Y 4/3	5YR 5/3	5% /	Clay Loam
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [x] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Hydric soil indicators are present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Soil pit was dug approximately 2 feet from a pond. Roots and rocks in soil horizons and the B-horizon had redox features. The sampling point is in assessment area 13.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: J. Rock, E. Christensen

Date: 01-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID: B-L18
Plot ID: B-PW23

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Glyceria elata	Herb	FACW+	75
2. Lysichiton americanum	Herb	OBL	10
3. Boykinia elata	Herb	FAC	15
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Indicators for Glyceria species occurring in the region are FACW+ or OBL. The indicator for Phalaris arundinacea is FACW. Considering an obligate species (Lysichiton americanum) is present at 15%, hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: Surface (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and contains free water in the pit to the surface. Wetland hydrology is present in the sampling point.

SOILS

Plot ID: B-PW23

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/1	None	/ None	Silt Loam
12-16	B	10YR 4/1	None	/ None	Sand
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Soil pit was dug at the confluence of two drainage channels in assessment area 13A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: E. Hale, J. Rock	Date: 30-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PEM Transect ID: B-L05 Plot ID: PW-18

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	98
2. Carex obnupta	Herb	OBL	2
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of dominant vegetation is FACW and an obligate species is present. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: (in.)

Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☑ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point inundated. Wetland hydrology is present.

SOILS

Plot ID: PW-18

Map Unit Name (Series and Phase): Birchbay silt loam, 0 to 3 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 4/2	None	/ None	Organincs with Silt
6-16	B	10YR 4/2	7.5YR 4/6	5% /	Silt
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The combination of hydrophytic vegetation, inundation, and presence of hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is in assessment are 3.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Hale, J. Rock, E. Christensen

Date: 01-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: B-L24
Plot ID: PW-26

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	10
2. Oemleria cerasiformis	Herb	FACU	1
3. Rubus spectabilis	Shrub	FAC+	1
4. Carex obnupta	Herb	OBL	90
5. Polystichum munitum	Herb	FACU	2
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of the dominant species are OBL. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: 8 (in.)
Depth to Free Water in Pit: surface (in.)
Depth to Saturated Soil: surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☑ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is inundated with 8" of water. Wetland hydrology is present in the sampling point.

SOILS

Plot ID: PW-26

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
				/	
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil profile could not be completed due to complete inundation of the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present?

Is this Sampling Point Within a Wetland?

Remarks:

Approved by HQUSACE 3/92

Additional Comments: The sampling point is in assessnent area 13.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, J. Leach	Date: 16-Jul-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PEM Transect ID: Plot ID: WP-AD-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	100
2.			
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology

SOILS

Plot ID: WP-AD-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/1		/	Silt Loam
13-16	A	10YR 3/1	10YR 8/3	/	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Some charcoal was present in the soil taken from the sample pit. Additionally, there were a few areas where depletions were present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present?

Is this Sampling Point Within a Wetland?

Remarks:

Approved by HQUSACE 3/92

Additional Comments:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, J. Leach

Date: 16-Jul-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: N/A
Plot ID: WP-AD-02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Equisetum arvense	Herb	FAC	25
2. Phalaris arundinacea	Herb	FACW	25
3. Rubus procerus	Shrub	FACU	
4. Alnus rubra	Tree	FAC	40
5. Agrostis - bent grass	Herb	FAC	45
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Carex abrupta, an upland species, was also present outside of the sample plot.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☐ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The data was taken in July when no hydrology was present throughout the study area.

SOILS

Plot ID: WP-AD-02

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-11	A	10YR 3/2	None	/ None	Silt Loam
11-18	B	10YR 3/2	10YR 4/3	10% /	Silt Loam
			7.5YR 4/4	15% /	Silt Loam
			7.5YR 3/4	15% /	Silt Loam
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Soils are moist throughout the soil profile, but not saturated.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks:

Approved by HQUSACE 3/92

Additional Comments:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Chambers, M. Villarreal

Date: 09-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: L-01
Plot ID: Z-L01-P-03

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	60
2. Symphoricarpos albus	Shrub	FACU	60
3. Rubus spectabilis	Shrub	FAC+	40
4. Pteridium aquilinum	Herb	FACU	20
5. Dicentra formosa	Herb	FACU	20
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 40%

Remarks: Sword fern (Polystichum munitum) is also present close to sampling point. Only 40% of dominant species are FAC or FAC+. Hydrophytic vegetation is not dominant in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L01-P-03

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	O		None	/ None	
3-16	A	7.5YR 3/4	None	/ None	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is representative of the upland community in the sothwest portion of assessment area 2.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Chambers, M. Villarreal

Date: 09-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: Z-L01
Plot ID: **Z-L01-PU-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	75
2. Sambucus racemosa	Shrub	FACU	25
3. Oemleria cerasiformis	Herb	FACU	25
4. Rubus spectabilis	Shrub	FAC+	25
5. Polystichum munitum	Herb	FACU	25
6. Dryopteris expansa	Herb	UPL	25
7. Maianthemum dilatatum	Herb	FAC	25
8. Symphoricarpos albus	Shrub	FACU	25

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 38%

Remarks: 38% of dominant species are FAC. All other dominant species are FACU or UPL. Wetland vegetation is not dominant in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L01-PU-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-15	A	7.5YR 3/2	None	/ None	Sandy Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located on the west side of the "old road" and just north of Lonseth, on the west side of the creek in Assessment areas 2.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Chambers, V. Mead

Date: 13-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: Z-L02
Plot ID: **Z-L01-PW01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Carex obnupta	Herb	OBL	20
2. Poa annua	Herb	FAC	10
3. Spiraea douglasii	Shrub	FACW	40
4. Lonicera involucrata	Shrub	FAC+	40
5. Ribes lacustre	Shrub	FAC+	20
6. Rubus spectabilis	Shrub	FAC+	60
7. Physocarpus capitatus	Shrub	FACW-	20
8. Rhamnus purshiana	Shrub	FAC-	20

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Alnus rubra	Tree	FAC	85
10. Cornus stolonifera	Shrub	FACW	20
11. Populus balsamifera	Tree	FAC	20
12. Betula papyrifera	Tree	FAC	10
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 90%

Remarks: Sword fern (Polystichum munitum) is present outside of the sampling point. 90% of dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is dominant.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetalnd hydrology are present in the sampling point.

SOILS

Plot ID: Z-L01-PW01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	7.5YR 3/1	None	/ None	
8-12	B	10YR 5/2	10YR 6/6	10% /	Silt
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes
Wetland Hydrology Present?	No
Hydric Soils Present?	Yes
Is this Sampling Point Within a Wetland?	Yes

Remarks: Based on the presence of hydrophytic vegetation,and hydric soils, it is determined that this data plot is in a wetland. Wetland hydrology was not present due to the season.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located at the south end of assessment area 2.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Chambers, V. Mead	Date: 13-Jun-06 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PFO Transect ID: Plot ID: Z-L02-PW-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1.		OBL	20
2. Poa annua	Herb	FAC	10
3. Spiraea douglasii	Shrub	FAC	40
4. Lonicera involucrata	Shrub	FAC+	40
5. Ribes lacustre	Shrub	FAC+	20
6. Rubus spectabilis	Shrub	FAC+	60
7. Physocarpus capitatus	Shrub	FACW-	20
8. Rhamnus purshiana	Shrub	FAC-	20

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Alnus rubra	Tree	FAC	85
10. Cornus stolonifera	Shrub	FACW	20
11. Populus balsamifera	Tree	FAC	20
12. Betula papyrifera	Tree	FAC	10
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 90%

Remarks: Sword fern (Polystichum munitum) is present outside of the sampling point. 90% of dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is dominant.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

- Depth of Surface Water: None (in.)
- Depth to Free Water in Pit: None (in.)
- Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetalnd hydrology are present in the sampling point.

SOILS

Plot ID: Z-L02-PW-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	7.5YR 3/1	None	/ None	
8-12	B	10YR 5/2	10YR 6/6	10% /	Silt
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation,and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located on the west side of the "old road" and just north of Lonseth, on the west side of the creek in Assessment areas 2.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Chambers, V. Mead

Date: 13-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PSS
Transect ID: Z-L02
Plot ID: Z-L02-PW-02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Lonicera involucrata	Shrub	FAC+	45
2. Athyrium filix-femina	Herb	FAC	25
3. Glyceria elata	Herb	FACW+	25
4. Oenanthe sarmentosa	Herb	OBL	45
5. Rubus spectabilis	Shrub	FAC+	70
6. Spiraea douglasii	Shrub	FACW	40
7. Maianthemum dilatatum	Herb	FAC	20
8. Symphoricarpos albus	Shrub	FACU	20
9. Rubus parviflorus	Shrub	FAC-	5
10. Ribes lacustre	Shrub	FAC+	25
11. Physocarpus capitatus	Shrub	FACW-	20
12. Unid'd sp.	Tree	NI	20
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 82%

Remarks: The unidentified species were not included in the total number of dominant species in the sampling point. 82% of dominant species were FAC, FACW, or OBL. Hydrophytic vegetation is dominant.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [x] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [x] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Primary and secondary indicators include water marks and water-stained leaves.

SOILS

Plot ID: Z-L02-PW-02

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 3/3	None	/ None	Silty Sand
6-12	B	10YR 4/4	7.5YR 4/4	50% /	Silty Sand
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point, but the soil matrix is lighter than most hydric soils in the study area.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The vegetation and soils in the sampling point indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located on the west side of the "old road" and just north of Lonseth, on the west side of the creek in Assessment areas 2.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Chambers, V. Mead

Date: 15-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: Z-L04
Plot ID: **Z-L04-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	85
2. Rubus spectabilis	Shrub	FAC+	15
3. Ranunculus repens	Herb	FACW	25
4. Glyceria elata	Herb	FACW+	25
5. Veronica americana	Herb	OBL	15
6. Carex obnupta	Herb	OBL	25
7. Athyrium filix-femina	Herb	FAC	10
8. Phalaris arundinacea	Herb	FACW	10
9. Rubus armeniacus	Shrub	FACU	5
10. Juncus sp.	Herb	NI	5
11. Dactylis glomerata	Herb	FACU	5
12. Festuca arundinacea	Herb	FAC-	5
13. Spiraea douglasii	Shrub	FACW	15
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Indian plum (Oemleria cerasiformis) and tufts of moss are present in vicinity of sampling point. The unidentified species were not included in the total number of dominant species in the sampling point. 82% of dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is dominant.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L04-WP-01

Map Unit Name (Series and Phase): Whatcom silt loam, 30 to 60% slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Aqualpic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A	7.5YR 3/2	7.5YR 4/4	20% /	Silt Loam
5-13	B	7.5YR 3/2	10YR 5/2	50% /	Silt Loam
			10YR 5/6	/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Relatively low chroma color and redoxymorphic features in the upper 5 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The vegetation and soils in the sampling point indicate that the sampling point is within a wetland. No indicators of wetland hydrology due to late Spring sampling.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is in assessment area 11, South of Henry Road along the unnamed creek.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Chambers, V. Mead	Date: 15-Jun-06 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PFO Transect ID: Z-L06 Plot ID: **Z-L06-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Lysichiton americanum	Herb	OBL	20
2. Equisetum arvense	Herb	FAC	40
3. Tellima grandiflora	Herb	UPL	20
4. Tolmiea menziesii	Herb	FAC	60
5. Rubus spectabilis	Shrub	FAC+	50
6. Athyrium filix-femina	Herb	FAC	50
7. Glyceria elata	Herb	FACW+	40
8. Alnus rubra	Tree	FAC	40
9. Thuja plicata	Tree	FAC	20
10. Lonicera involucrata	Shrub	FAC+	20
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 89%

Remarks: The unidentified species were not included in the total number of dominant species in the sampling point. 89% of the dominant species are FAC, FACW, or OBL. Hydrophytic vegetation is dominant.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	None (in.)
Depth to Saturated Soil:	None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☑ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☑ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Sampling point is near a drainage channel and standing water exist within the wetland. Primary and secondary indicators include water marks and water-stained leaves. Sampling point is within a wetland.

SOILS

Plot ID: Z-L06-WP-01

Map Unit Name (Series and Phase): Whatcom silt loam, 30 to 60% slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Aqualpic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 3/2	None	/ None	Sand
6-12	B	10YR 2/2	7.5YR 5/6	5% /	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is west of F7 in assessment area 11, South of Henry Road along the unnamed creek.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Chambers, M. Kinard	Date: 16-Jun-06 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Shrub Transect ID: Z-L08 Plot ID: **Z-L08-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Acer circinatum	Tree	FAC-	60
2. Oemleria cerasiformis	Herb	FACU	25
3. Polystichum munitum	Herb	FACU	40
4. Symphoricarpos albus	Shrub	FACU	20
5. Dicentra formosa	Herb	FACU	20
6. Montia sp.	Herb	NI	40
7. Alnus rubra	Tree	FAC	75
8. Tellima grandiflora	Herb	UPL	60
9. Carex tumulicola	Herb	FACU	25
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). <1%

Remarks: The unidentified species were not included in the total number of dominant species in the sampling point. Less than 1% of the dominant species are FAC. Hydrophytic vegetation is not dominant.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L08-UP-01

Map Unit Name (Series and Phase): Whatcom silt loam, 30 to 60 percent slopes

Drainage Class: moderately well

Taxonomy (Subgroup): Aqualpic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	A	10YR 3/3	None	/ None	Silty/Sandy Loam
3-9	B	7.5YR 3/3	10YR 4/6	5% / Faint	Silty/Sandy Loam
9-14	C	10YR 3/4	10YR 4/6	5% / Faint	Silty/Sandy Loam
14-18		10YR 6/2	10YR 3/3	40% / Distinct	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Mottling of colors is present starting at 3 inches and the matrix is not a chroma of 2 or less.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is in assessment area 11, South of Henry Road on the east side of the unnamed creek.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 03-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L13
Plot ID: **Z-L13-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	90
2. Anthoxanthum odoratum	Herb	FACU	25
3. Ranunculus acriformis	Herb	FACW-	25
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: The vegetation in the plot was recently mowed, so it was not possible to identify the Fescue to species in January. The site was revisited in March to identify the dominant vegetation.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	14 (in.)
Depth to Saturated Soil:	None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology were present in the data plot.

SOILS

Plot ID: Z-L13-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/2	None	/ None	Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: No indicators of hydric soil were present in the data plot.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Hydric vegetation was dominant, but no obligate species were present. Wetland hydrology and hydric soils werenot present in the sampling point. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the upland area west of the unnamed creek in assessment area 12.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, E. Christensen	Date: 23-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Transect ID: Z-L13 Plot ID: Z-L13-UP02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	70
2. Anthoxanthum odoratum	Herb	FACU	25
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 14 (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Free water in the pit is a result of heavy rainfall. No indicators of wetland hydrology are present in the sampling point.

SOILS

Plot ID: Z-L13-UP02

Map Unit Name (Series and Phase): Birch Bay Silt Loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 2/2	None	/ None	Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Soil is homogenous throughout pit to where standing water begins at 14 inches. Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland?

Remarks:

Approved by HQUSACE 3/92

Additional Comments:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, E. Christensen	Date: 23-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Meadow Transect ID: Plot ID: Z-L13-UP-03

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1.		NI	65
2.			
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: The vegetation in the sampling point is an unidentified species of Fescue that is likely an upland species, but remains unconfirmed due to the absence of seed heads during the January sampling.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 2 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The soil was saturated to the surface in January, but the water appears to be surface flow and not necessarily indicative of wetland hydrology.

SOILS

Plot ID: Z-L13-UP-03

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 2/2	None	/ None	Loam
10-18	B	10YR 3/4	None	/ None	Sand
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: No indicators of hydric soils are present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: No indicators of wetland vegetation, hydrology or soils are present. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located just west of the wetland associated with the southernmost portion of the creek in assessment area 12.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 23-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)?	No	Transect ID: Z-L14
Is the area a potential Problem Area? (If needed, explain on reverse.)	No	Plot ID: Z-L14-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Carex obnupta	Herb	OBL	40
2. Juncus effusus	Herb	FACW	20
3. Festuca sp.	Herb	NI	15
4. Alnus rubra	Tree	FAC	20
5. Rosa nutkana	Shrub	FAC	25
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 60%

Remarks: The presence of obligate species and that 60% of the species in the plot are OBL, FACW or FAC indicate that wetland vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	14 (in.)
Depth to Saturated Soil:	Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: It appears that most of the water in the sampling point is coming from surface flow. The soil is saturated in the upper 12 inches, suggesting that wetland hydrology may be present.

SOILS

Plot ID: Z-L14-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 2/2	None	/ None	Loam
10-18	B	10YR 3/3	None	/ None	Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: No redoxymorphic features are present, the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? Yes

Remarks: The vegetation is hydrophytic and wetland hydrology is present. The sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located south of the small forested area south of henry road, near the west end of the study area in assessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: D. Halladay, K. Dunkin

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L15
Plot ID: **Z-L15-UP-02**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	80
2. Anthoxanthum odoratum	Herb	FACU	30
3. Agrostis capillaris	Herb	FAC	10
4. Ranunculus repens	Herb	FACW	1
5. Trifolium arvense	Herb	UPL	5
6. Taraxacum officinale	Herb	FACU	1
7. Hypochaeris radicata	Herb	FACU	5
8. Phalaris arundinacea	Herb	FACW	1
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50

Remarks: Dominant vegetation in the sampling point are an unidentified Poa and Fescue species that are likely upland species, but were unconfirmed in January. Species listed above reflect the species identified the following May. Half of the dominant species were OBL, FACW or FAC. The weedy species are primarily upland species.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	5 (in.)
Depth to Saturated Soil:	5 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The point was sampled during a wet time of the year with recent heavy rainfall. The soils are not inundated nor saturated to the surface and would not likely meet wetland criteria during the growing season.

SOILS

Plot ID: Z-L15-UP-02

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	2.5YR 3/1	None	/ None	Loam
12-14	A2	2.5YR 4/2	None	/ None	Loam
14-18	B	5YR 5/2	10YR 5/6	25% / Prominent	Sandy Clay Loam
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil is low chroma within the upper 12 inches but because redoxymorphic features are not present in the upper 12 inches, the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Due to the dominance of possible upland species, the low likelihood of wetland hydrology during the growing season, and the lack of hydric soils, this sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Area is regularly hayed. Grasses are 6-10 inches tall. The sampling point is located west of the small forested parch south of Henry Road in asssessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: D. Halladay, K. Dunkin

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L15
Plot ID: **Z-L15-UP-03**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	75
2. Anthoxanthum odoratum	Herb	FACU	40
3. Trifolium arvense	Herb	UPL	5
4. Unid'd grass sp.	Herb	NI	5
5. Vicia sp.	Herb	NI	1
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Dominant vegetation in the sampling point were unconfirmed during the January survey. The site was revisited in May to confirm vegetation while grasses were in bloom.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 12 (in.)
Depth to Saturated Soil: 8 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The point was sampled during a wet time of the year with recent heavy rainfall. The soils are not inundated nor saturated to the surface and would not likely meet wetland criteria during the growing season.

SOILS

Plot ID: Z-L15-UP-03

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/2	None	/ None	Loam
16-18	B	10YR 3/2	None	/ None	Silty Clay Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil matrix is relatively low chroma. But, redoxymorphic features are not present and it does not appear that the sampling point is in a wetland.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Due to the dominance of possible upland species, the low likelihood of wetland hydrology during the growing season, and the lack of hydric soils, this sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Area is regularly hayed. Grasses were 6-10 inches tall, 2-3 feet tall in May.The sampling point is located west of the small forested parch south of Henry Road in asssessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: D. Halladay, K. Dunkin

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L19
Plot ID: **Z-L19-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Ranunculus acris	Herb	FACW-	1
2. Holcus lanatus	Herb	FAC	30
3. Festuca rubra	Herb	FAC+	10
4. Trifolium repens	Herb	FAC	5
5. Anthoxanthum odoratum	Herb	FACU	10
6. Alopecurus pratensis	Herb	FACW	10
7. Myosotis scorpioides	Herb	FACW	1
8. Cirsium arvense	Herb	FACU+	1
9. Medicago lupulina	Herb	FAC	1
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: The sampling plot was revisited on May 28, 2007 and the vegetation listed above represents species present in May. The January sampling event consisted of five unidentified species and a mixture of trace amounts of FACW and FACU species.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	11 (in.)
Depth to Saturated Soil:	Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point was sampled during a wet time of the year with recent heavy rainfall and is located in a small deperession area. The sampling point would unlikely meet wetland hydrology criteria during the growing season.

SOILS

Plot ID: Z-L19-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-11	A	7.5YR 3/2	None	/ None	Silt Loam
11-21	B	2.5Y 5/2	10YR 4/4	15% / Prominent	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Relatively low chroma colors are present throughout the soil matrix, but redoxymoprhic features are not present above 10 inches. The presence of hydric soils is questionable in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: The lack of wetland vegetation, hydrology and soils indicate that the sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located in one of two well-drained fields south of Henry Road in assessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: D. Halladay, K. Dunkin	Date: 24-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Meadow Transect ID: Z-L19 Plot ID: **Z-L19-UP-02**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Hypochaeris radicata	Herb	FACU	75
2. Trifolium sp.	Herb	NI	1
3. Plantago sp.	Herb	NI	5
4. Poa sp.	Herb	NI	10
5. Unid'd grass sp.	Herb	NI	40
6. Alopecurus pratensis	Herb	FACW	5
7. Festuca sp.	Herb	NI	5
8. Anthoxanthum odoratum	Herb	FACU	1
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: A dominant species in the sampling point is an unidentified grass that is likely an upland species, but remains unconfirmed due to the absence of seed heads during the January sampling. The other dominant vegetation is a FACU species (Hypochaeris radicata) and is generally indicative of an upland plot in the study area.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 14 (in.)

Depth to Saturated Soil: 12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The point was sampled during a wet time of the year with recent heavy rainfall. The soils are not inundated nor saturated above 12 inches and would not likely meet wetland criteria during the growing season.

SOILS

Plot ID: Z-L19-UP-02

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-2	A	7.5YR 3/2	None	/ None	Silt Loam
2-12	B	10YR 2/2	None	/ None	Sandy Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil matrix is relatively low chroma. But, redoxymorphic features are not present and it does not appear that the sampling point is in a wetland.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Due to the dominance of confirmed and suspected upland species, the unlikelihood of wetland hydrology during the growing season, and the lack of hydric soils, this sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located in one of two well-drained fields south of Henry Road in assessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: D. Halladay, K. Dunkin

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L19
Plot ID: **Z-L19-UP-03**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Equisetum telmateia	Herb	FACW	25
2. Alopecurus pratensis	Herb	FACW	30
3. Festuca rubra	Herb	FAC+	10
4. Plantago lanceolata	Herb	FAC	1
5. Rubus laciniatus	Shrub	FACU+	1
6. Anthoxanthum odoratum	Herb	FACU	30
7. Holcus lanatus	Herb	FAC	30
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 75%

Remarks: The sampling plot was revisited on May 28, 2007 and the vegetation listed above represents species present in May. The January sampling event consisted of four unidentified species and a mixture of FAC and mostly FACU species. {Festuca sp 25, Rubus laciniatus FACU+ 10, Rosa sp 10, Alnus rubra FAC 20, Cirsium arvense FACU+ 1, Rubus armeniacus FACU 5, Poa sp 60, Trifolium sp 1}

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 14 (in.)

Depth to Saturated Soil: 12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The point was sampled during a wet time of the year with recent heavy rainfall. The soils are not inundated nor saturated within the upper 12 inches and would not likely meet wetland criteria during the growing season.

SOILS

Plot ID: Z-L19-UP-03

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-13	A	10YR 3/2	None	/ None	Silt Loam
13-17	B	10YR 4/2	10YR 5/3	15% / Faint	Sandy Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil is relatively low chroma, but because redoximorphic features are not present in the upper 12 inches, the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Due to the dominance of one FAC species and two suspected upland species, the unlikelihood of wetland hydrology during the growing season, and the lack of hydric soils, this sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located in one of two well-drained fields south of Henry Road in assessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: D. Halladay, K. Dunkin	Date: 24-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PEM Transect ID: Z-L19 Plot ID: **Z-L19-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Agrostis sp.	Herb	NI	60
2. Spiraea douglasii	Shrub	FACW	15
3. Phalaris arundinacea	Herb	FACW	1
4. Juncus effusus	Herb	FACW	1
5. Trifolium sp.	Herb	NI	1
6. Rubus armeniacus	Shrub	FACU	5
7. Rubus laciniatus	Shrub	FACU+	5
8. Unid'd grass sp.	Herb		50

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Dominant vegetation in the sampling point are an unidentified Agrostis and other grass species that are likely upland species, but remains unconfirmed due to the absence of seed heads during the January sampling. Spiraea douglasii is present at 15% and two FACU species (Rubus discolor and Rubus lacinatus) and two FACW species (Phalaris arundinacea and Juncus effusus) are present within the plot at trace amounts. It does not appear that wetland vegetation is dominant in the sampling point and wetland vegetation in the sampling point is not indicitive of a wetland.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 8 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and most of the surrounding area is inundated, suggesting that wetland hydrology is present in the sampling point and would satisfy wetland criteria during the growing season.

SOILS

Plot ID: Z-L19-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	7.5YR 2.5/1	None	/ None	Silt Loam
10-16	B	2.5Y 3/2	7.5YR 4/3	15% / Distinct	Silty Clay Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The combination of soil saturation to the surface and presence of hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is located between two well-drained fields south of Henry Road in assessment area 10B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Christensen

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L21
Plot ID: **Z-L21-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	80
2. Anthoxanthum odoratum	Herb	FACU	80
3. Taraxacum laevigatum	Herb	UPL	10
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: Half of the dominant species are FAC, FACW, or OBL.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 5 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The soil is saturated to the surface due to heavy rainfall.

SOILS

Plot ID: Z-L21-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-18	A	10YR 2/2	None	/ None	Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil matrix is relatively dark but not low-chroma, and redoxymorphic features are not present in the upper 12 inches. Hydric soils are not present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Wetland vegetation and hydric soils are not present in the sampling point. Wetland hydrology is present, however, the presence of wetland hydrology is due primarily to recent, heavy rainfall.

Approved by HQUSACE 3/92

Additional Comments:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: E. Christensen	Date: 24-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Transect ID: Z-L21 Plot ID: **Z-L21-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	80
2. Anthoxanthum aristatum	Herb	UPL	80
3. Crataegus douglasii	Tree	FAC	50
4. Alnus rubra	Tree	FAC	30
5. Symphoricarpos albus	Shrub	FACU	15
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: More than half of the dominant vegetation is OBL, FACW, or FAC.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 3 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The soil is saturated in the upper 12 inches. Wetland hydrology is present in the sampling point.

SOILS

Plot ID: Z-L21-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 2/2	None	/	Sandy Loam
6-18	B	10YR 5/2	10YR 6/6	25% /	Sandy Clay
				/	
				/	-
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil is low chroma with redoxymorphic features in the upper 12 inches. Hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation and wetland hydrology indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Christensen, D. Halladay

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadows
Transect ID: Z-L22
Plot ID: **Z-L22-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Taraxacum officinale	Herb	FACU	25
2. Trifolium arvense	Herb	UPL	5
3. Anthoxanthum odoratum	Herb	FACU	80
4. Ranunculus repens	Herb	FACW	1
5. Festuca rubra	Herb	FAC+	75
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: The sampling plot was revisited on May 28, 2007 and the vegetation listed above represents species present in May. The January sampling event consisted of two unidentified species and two FAC and one FACU species.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 9 (in.)

Depth to Saturated Soil: 4 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The point was sampled during a wet time of the year with recent heavy rainfall. The soils are not inundated nor saturated to the surface and would not likely meet wetland criteria during the growing season.

SOILS

Plot ID: Z-L22-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 2/2	None	/ None	Loam
12-16	B	10YR 5/2	10YR 6/6	25% / Prominent	Sandy Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil is relatively low chroma, but because redoximorphic features are not present in the upper 12 inches, the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Due to the dominance of confirmed and suspected upland species, the unlikelihood of wetland hydrology during the growing season, and the lack of hydric soils, this sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated south of Henry Road in a well drained field in assessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L22
Plot ID: Z-L22-UP-03

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	80
2. Taraxacum officinale	Herb	FACU	20
3. Plantago lanceolata	Herb	FAC	10
4. Lotus corniculatus	Herb	FAC	20
5. Anthoxanthum odoratum	Herb	FACU	50
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks: The area was visited once in January and again in May to confirm species identification when the grasses were in bloom. Half of the dominant species are OBL, FACW, or, FAC. Weedy species and other non-dominant species are more likely to be Upland.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 14 (in.)
Depth to Saturated Soil: 14 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Even after a period of heavy rainfall in January, no indicators of wetland hydrology are present.

SOILS

Plot ID: Z-L22-UP-03

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 2/2	None	/ None	Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil profile was homogenous throughout the 16 + inch soil pit in the sampling plot. No signs of hydric soil were apparent.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: While facultative species were present, much of the vegetation could not be identified to species because the field was recently mowed. The vegetation was not used as a wetland indicator.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in a mowed field south of Henry Road in assessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L22
Plot ID: **Z-L22-UP-04**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Anthoxanthum odoratum	Herb	FACU	15
2. Festuca rubra	Herb	FAC+	25
3. Ranunculus acris	Herb	FACW-	1
4. Trifolium pratense	Herb	FACU	1
5. Cynosurus cristatus	Herb	UPL	10
6. Taraxacum officinale	Herb	FACU	1
7. Holcus lanatus	Herb	FAC	10
8. Hypochaeris radicata	Herb	FACU	10

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Plantago lanceolata	Herb	FAC	5
10. Alopecurus pratensis	Herb	FACW	5
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100

Remarks: The sampling plot was revisited on May 28, 2007 and the vegetation listed above represents species present in May. The January sampling event consisted of two unidentified species and two FAC and one FACU species (Festuca sp NI 90; Taraxacum officinale FACU 20; Lotus corniculatus FAC 10; Plantago lanceolata FAC 5; Poa sp. NI 15)

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The soil is saturated to the surface. Some ponding water was observed near the tree line, however, these data were collected during a wet period in January when wetland hydrology was present in non-wetland areas.

SOILS

Plot ID: Z-L22-UP-04

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A	10YR 2/2	None	/ None	Loam
14-18	B	10YR 5/2	10YR 6/6	30% / Prominent	Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil is somewhat low chroma with redox below 14 inches. Because redox is not present in the upper 12 inches, the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Some facultative species are present, but because the data were collected mid-winter after the field had been mowed, vegetation is not a reliable indicator. Wetland hydrology is also present, but areas of ponded water are typically the result of recent surface flow from heavy rainfall. Hydric soils are not present. The sampling point is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the open fields south of Henry Road in assessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 24-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L22
Plot ID: **Z-L22-UP-06**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	80
2. Ranunculus repens	Herb	FACW	5
3. Trifolium arvense	Herb	UPL	5
4. Anthoxanthum odoratum	Herb	FACU	50
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50

Remarks: The sampling plot was revisited on May 28, 2007 and the vegetation listed above represents species present in May. The January sampling event consisted of two unidentified species and two FAC and one FACU species.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: Surface (in.)

Depth to Free Water in Pit: Surface (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is inundated and saturated to the surface. Wetland hydrology is present in the sampling point.

SOILS

Plot ID: Z-L22-UP-06

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A	10YR 3/2	None	/ None	Loam
14-	B	10YR 4/2	5YR 5/8	15% /	Sandy Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil is relatively low chroma, but because redoximorphic features are not present in the upper 12 inches, the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks:

Approved by HQUSACE 3/92

Additional Comments: Soils are wet due to recent rain. Plot located in pasture, commonly plowed or tilled, just east of Z-L22-UP-04 in assessment area 10A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Christensen

Date: 27-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Wetland
Transect ID: Z-L22
Plot ID: Z-L22-WP01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Juncus effusus	Herb	FACW	80
2. Moss	NA	NI	80
3. Anthoxanthum odoratum	Herb	FACU	30
4. Festuca rubra	Herb	FAC+	30
5. Rubus armeniacus	Shrub	FACU	10
6.			
7.			
8.			

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 66%

Remarks: More than 50% of the dominant vegetation is FAC, FACW, or OBL. Hydrophytic vegetation is present in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The soil is saturated to the surface. Wetland hydrology is present.

SOILS

Plot ID: Z-L22-WP01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 2/2	None	/ None	Sandy Loam
8-12	B	10YR 5/3	None	/ None	Sand
12-18	C	N/A N/A	None	/ None	Gravel
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: No indicators of hydric soil are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation and wetland hydrology indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in a drainage ditch at the edge of a gravel road. It appears that there are inclusions of gravel fill in the sampling point.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 25-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L25
Plot ID: **Z-L25-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca sp.	Herb	NI	60
2. Lotus corniculatus	Herb	FAC	5
3. Taraxacum officinale	Herb	UPL	5
4. Rubus spectabilis	Shrub	FAC+	5
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0

Remarks: Bare ground covered 30% of the plot. Vegetation included few dominant species. The only dominant vegetation (Fescue) could not be identified to species because the field had recently been mowed and no seed heads were present. Species of upland weeds were present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 11 (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No indicators of wetland hydrology are present in th sampling point.

SOILS

Plot ID: Z-L25-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-9	A	10YR 3/3		/	Silt Loam
9-18	B	10YR 3/3	7.5YR 4/6	5% / Faint	Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil appears to be churned and recently tilled. Some slight redoxymorphic features were observed, but it does not appear that the soil is hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: No indicators of wetland vegetation, hydrology or soils are present. The sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in an open field south of Henry Road that as recently been mowed and seeded in assessment area 9A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 25-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID: Z-L25
Plot ID: **Z-L25-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Holcus mollis	Herb	FACU	30
2. Juncus effusus	Herb	FACW	30
3. Medicago lupulina	Herb	FAC	10
4. Rubus armeniacus	Shrub	FACU	5
5. Rubus spectabilis	Shrub	FAC+	5
6. Alnus rubra	Tree	FAC	20
7. Carex obnupta	Herb	OBL	20
8. Phalaris arundinacea	Herb	FACW	20
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0

Remarks: The site is inundated and little vegetation remains. The only vegetation observed in the sampling point is an unidentified species of Fescue.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: 2 (in.)

Depth to Free Water in Pit: Inundated (in.)

Depth to Saturated Soil: 10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [x] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is inundated. Primary indicators of wetland hydrology are present in the sampling point.

SOILS

Plot ID: Z-L25-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 3/2	10YR 6/1	10% / Faint	Silt Loam
8-10	B		10YR 5/8	10% / Faint	organic till layer
10-18	B2	10YR 4/2	5YR 4/6	25% / Prominent	Clay Loam
				/	-
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The presence of prominent redoxymorphic features and low chroma colors indicates the presence of hydric soils.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The inundation of the sampling point and presence of hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in the wetland in the open fields north of Henry Road in assessment area 9A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, E. Christensen	Date: 25-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Meadow Transect ID: Z-L26 Plot ID: Z-L26-UP-02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	60
2. Anthoxanthum aristatum	Herb	UPL	25
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Dominant vegetation in the sampling point are an unidentified Poa and Fescue species that are likely upland species, but remains unconfirmed due to the absence of seed heads during the January sampling.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 10 (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Even after a period of heavy rainfall in January, no indicators of wetland hydrology are present. Moss is present in the sampling point at 20%.

SOILS

Plot ID: Z-L26-UP-02

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/2	None	/ None	Silt Loam
12-18	B	2.5YR 5/2	10YR 5/	5% /	Sandy Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: The soil is somewhat low chroma with redox below 12 inches. Soil in sample plot was not as red as other upland plots.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Although the vegetation was not identified to species, the lack of wetland hydrology and hydric soils indicate that the sampling point is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in the long field west of the creek, north of Henry Road in assessment area 9A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, E. Christensen	Date: 25-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Meadow Transect ID: Z-L26 Plot ID: Z-L26-UP-03

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	25
2. Ranunculus acris	Herb	FACW-	10
3. Anthoxanthum odoratum	Herb	FACU	10
4. Phalaris arundinacea	Herb	FACW	35
5. Cynosurus cristatus	Herb	UPL	10
6. Poa palustris	Herb	FAC	5
7. Rumex crisous	Herb	FAC+	1
8. Agrostis capillaris	Herb	FAC	1
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100

Remarks: The sampling plot was revisited on May 28, 2007 and the vegetation listed above represents species present in May. The January sampling event consisted of two unidentified species and Phalaris arundinacea. While the dominant species are hydrophytic, volunteers and emergent weeds are primarily upland species.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

- Depth of Surface Water: None (in.)
- Depth to Free Water in Pit: 11 (in.)
- Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Soil was saturated in the upper 12 inches, but it is apparently from surface water not ground water.

SOILS

Plot ID: Z-L26-UP-03

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/2	None	/ None	
12-	A	10YR 3/2	10YR 5/6	/	
				/	
				/	-
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil is somewhat low chroma with redox below 12 inches. Because redox is not present in the upper 12 inches, the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: The lack of distnict wetland hydrology and hydric soils, an unidentifiable vegetation led us to determine that the sampling point is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated in the sloped field south of Henry Road in assessment area 9A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, E. Christensen	Date: 25-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PEM Transect ID: Z-L26 Plot ID: **Z-L26-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Carex obnupta	Herb	OBL	60
2. Phalaris arundinacea	Herb	FACW	35
3. Ranunculus repens	Herb	FACW	15
4. Juncus effusus	Herb	FACW	50
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: All species identified in the sampling point are hydrophytic.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	4 (in.)
Depth to Free Water in Pit:	0 (in.)
Depth to Saturated Soil:	0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☑ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is inundated. Wetland hydrology is present.

SOILS

Plot ID: Z-L26-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-7	A	10YR 3/2	None	/ None	Silt Loam
7-18	B	10YR 5/2	None	/ None	Sandy Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: No indicators of hydric soils are present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? Yes

Remarks: Although indicators of hydric soils are not present, the presence of hydrophytic vegetation and wetland hydrology indicate that the sampling point s in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in the wetland that extends through the two westernmost open fields, north of Henry Road in assessment area 9A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 26-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L27
Plot ID: **Z-L27-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Pteridium aquilinum	Herb	FACU	15
2. Alnus rubra	Tree	FAC	40
3. Rubus spectabilis	Shrub	FAC+	20
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Species in the sampling point were primarily facultative, with one dominant FAC species and one dominant FAC+ species. One FACU species was present at 15%. Hydrophytic vegetation is not dominant in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L27-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-1	duff		None	/ None	
1-16	A	10YR 3/3	None	/ None	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Duff layer is approximately 1 inch.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: The lack of wetland vegetation, hydrology and soils indicate that the sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located east of the creek and south of Henry Road in asssessment area 14.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 26-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID: Z-L27
Plot ID: **Z-L27-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Carex obnupta	Herb	OBL	40
2. Rubus spectabilis	Shrub	FAC+	20
3. Tellima grandiflora	Herb	UPL	25
4. Alnus rubra	Tree	FAC	30
5. Populus balsamifera	Tree	FAC	1
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: The presence of a dominant obligate species and that 75% of the species in the plot are OBL, FACW or FAC indicate that hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)
Depth to Free Water in Pit: Surface (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☑ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The presence of two primary indicators of wetland hydrology (site is inundated and saturated in the upper 12 inches) suggest that wetland hydrology is present in the sampling point.

SOILS

Plot ID: Z-L27-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 2/2	None	/ None	Silt Loam
		10YR 4/3	5YR 5/6	25% / Faint	Silt Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Because the sample plot was inundated with water, it was not possible to thoroughly evaluate the soil profile below 10 inches. The low chroma color and redoxymorphic features in the upper 10 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation, wetland hydrology and hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located just east of the creek, south of Henry Road in asssessment area 14.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: D. Halladay	Date: 30-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Forest Transect ID: Z-L29 Plot ID: **Z-L29-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Rubus armeniacus	Shrub	FACU	25
2. Rubus laciniatus	Shrub	FACU+	5
3. Polystichum munitum	Herb	FACU	50
4. Rubus spectabilis	Shrub	FAC+	25
5. Alnus rubra	Tree	FAC	30
6. Acer circinatum	Tree	FAC-	10
7. Oemleria cerasiformis	Herb	FACU	25
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 40%

Remarks: Species in the sampling point were primarily facultative. Less than 50% of the dominant species were FAC, FACW or OBL.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

- Depth of Surface Water: None (in.)
- Depth to Free Water in Pit: 10 (in.)
- Depth to Saturated Soil: 8 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The point was sampled during a wet time of the year with recent heavy rainfall. The soils are not inundated nor saturated to the surface and may not likely meet wetland criteria during the growing season.

SOILS

Plot ID: Z-L29-UP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-18	A	7.5YR 3/2	None	/ None	Silt Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil is relatively low chroma, but because redoximorphic features are not present, the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? ?

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Due to the dominance of FAC and FACU species, the unlikelihood of wetland hydrology during the growing season, and the lack of hydric soils, this sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sample plot is located in the forested area near wetland Z-L29, just north of Henry Road near Gulf Road in assessment area 6.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 02-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: Z-L29
Plot ID: **Z-L29-UP-02**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Thuja plicata	Tree	FAC	25
2. Ranunculus acriformis	Herb	FACW-	20
3. Populus balsamifera	Tree	FAC	25
4. Rubus spectabilis	Shrub	FAC+	20
5. Physocarpus capitatus	Shrub	FACW-	20
6. Polystichum munitum	Herb	FACU	20
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: The vegetation in the plot is primarily facultative and upland, with more than 50% of the dominant vegetation FAC, FACW or OBL. Wetland vegetation is present in the sample point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 6 (in.)
Depth to Saturated Soil: 4 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Water is present in the pit, but it appears to be coming from surface flow.

SOILS

Plot ID: Z-L29-UP-02

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-18	A	10YR 3/2	None	/ None	Sandy Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: The soil matrix is homogenous throughout the 18 inch pit. There are no indicators of hydric soil in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Wetland vegetation is present but it is not dominant, and no obligate species occur in the sampling point. Hydrology in the sampling point appears to be coming from surface flow, following a substantial rainy period. The soils show no hydric indicators. The sampling point is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sample plot is located in the forested area near wetland Z-L29, just north of Henry Road near Gulf Road in assessment area 6.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 02-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: Z-L29
Plot ID: **Z-L29-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Carex obnupta	Herb	OBL	25
2. Carex hoodii	Herb	FAC	15
3. Polystichum munitum	Herb	FACU	20
4. Alnus rubra	Tree	FAC	25
5. Rubus spectabilis	Shrub	FAC+	35
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 60%

Remarks: The dominance of the obligate species (Carex obnupta) and other FAC species indicate that wetland vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: 4 (in.)
Depth to Free Water in Pit: Surface (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☑ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The presence of four inches of standing water indicates that wetland hydrology is present.

SOILS

Plot ID: Z-L29-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam, 0 to 2 percent slopes

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	A	10YR 3/3	None	/ None	Silt Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Because the sample plot was inundated with water, it was not possible to thoroughly evaluate the soil profile. Even though the plot was located in a relatively dry area compared to the surrounding area, it was not possible to complete the evaluation.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation and standing water indicate that the sampling point is within a wetland. The soil in the wetland was difficult to evaluate because the area was inundated.

Approved by HQUSACE 3/92

Additional Comments: The sample plot is located in the forested area near wetland Z-L29, just north of Henry Road near Gulf Road in assessment area 6.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: D. Halladay, E. Christensen

Date: 30-Jan-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: Z-L30
Plot ID: **Z-L30-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Rubus armeniacus	Shrub	FACU	100
2. Alnus rubra	Tree	FAC	95
3. Abies grandis	Tree	FACU-	15
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: The dominant vegetation in the plot is facultative and FACU, suggestive of an upland forest. Wetland vegetation is not present in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Even after a period of heavy rainfall in January, no indicators of wetland hydrology are present.

SOILS

Plot ID: Z-L30-UP-01

Map Unit Name (Series and Phase): Neptune very gravelly sandy loam

Drainage Class: excessive

Taxonomy (Subgroup): Entic haploxerolls

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	7.5YR 2.5/1	None	/ None	Sandy Loam
8-18	B	7.5YR 3/4	None	/ None	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: The soil is relatively low chroma in the upper 8 inches but is not consistent throughout the profile. Redoximorphic features are not present and the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: The absence of hydrophytic vegetation, wetland hydrology and hydric soils indicate that the sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sample plot is located in assessment area 13E

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: D. Halladay, E. Christensen	Date: 31-Jan-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PFO Transect ID: Z-L30 Plot ID: **Z-L30-WP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Spiraea douglasii	Shrub	FACW	30
2. Salix lucida	Tree	FACW	50
3. Carex obnupta	Herb	OBL	75
4. Rosa nutkana	Shrub	FAC	40
5. Populus balsamifera	Tree	FAC	20
6. Alnus rubra	Tree	FAC	30
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 83%

Remarks: The presence of a dominant obligate species and that 83% of the species in the plot are OBL, FACW or FAC indicate that wetland vegetation is present. Typha latifolia is prevalent in the surrounding wetland area.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	Surface	(in.)
Depth to Free Water in Pit:	Surface	(in.)
Depth to Saturated Soil:	Surface	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☑ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The presence of two primary indicators of wetland hydrology (site is inundated and saturated in the upper 12 inches) suggest that wetland hydrology is present in the sampling point. The surrounding wetland area is inundated with 6+ inches of water.

SOILS

Plot ID: Z-L30-WP-01

Map Unit Name (Series and Phase): Neptune very gravelly sandy loam

Drainage Class: excessive

Taxonomy (Subgroup): Entic haploxerolls

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	O	10YR 2/1	None	/ None	organic material
3-15	A		None	/ None	gravel
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [x] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil profile was not completed because gravel was encountered at 3 inches and remained throughout the rest of the pit. Sulfidic odor was prevalent at the sampling point. The plot is located 10 feet east of the road.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? ?

Is this Sampling Point Within a Wetland? Yes

Remarks: Even though a soil profile could not be completed due to gravel encountered, the predominance of hydrophytic vegetation and wetland hydrology indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sample plot is located in assessment area 13E

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: J. Rock, E. Christensen

Date: 03-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: Z-L31
Plot ID: Z-L31-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	75
2. Carex obnupta	Herb	OBL	25
3. Rubus spectabilis	Shrub	FAC+	50
4. Spiraea douglasii	Shrub	FACW	50
5. Alnus rubra	Tree	FAC	75
6. Populus balsamifera	Tree	FAC	25
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of the dominant species are FAC, FAC+, FACW, and OBL. Hydrophytic vegetation is present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: 3 (in.)
Depth to Free Water in Pit: Inundated (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is inundated with 3" of water and saturated to the surface. Wetland hydrology is present in the sampling point.

SOILS

Plot ID: Z-L31-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 2/1	None	/ None	Loam
8-16	B	10YR 6/1	10YR 5/6	25% / Distinct	Clay Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the presence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sample plot is located in assessment area 4B

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Christensen

Date: 03-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: Z-L33
Plot ID: **Z-L33-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Rubus ursinus	Shrub	FACU	90
2. Phalaris arundinacea	Herb	FACW	75
3. Rosa nutkana	Shrub	FAC	20
4. Oemleria cerasiformis	Herb	FACU	20
5. Populus balsamifera	Tree	FAC	60
6. Alnus rubra	Tree	FAC	60
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 67%

Remarks: 67% of the dominant species are FAC or FACW. Hydrophytic vegetation is present but two FACU species (Rubus ursinus and Oemleria cerasiformis) are also dominant.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 17 (in.)
Depth to Saturated Soil: 16 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L33-UP-01

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-18	A	10YR 3/2	None	/ None	Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Soils are homogenous throughout the profile. The soil is relatively low chroma, but because redoximorphic features are not present in the upper 12 inches, the soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? No
Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is located approximately 50 feet west of Kickerville Rd in assessment area 4B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen, D. Halladay

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PFO
Transect ID: Z-L34
Plot ID: Z-L34-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Acer circinatum	Tree	FAC-	75
2. Alnus rubra	Tree	FAC	25
3. Rubus spectabilis	Shrub	FAC+	5
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: 50% of the dominant species are FAC. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: 3 (in.)
Depth to Free Water in Pit: Surface (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☑ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks:

SOILS

Plot ID: Z-L34-WP-01

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 3/1	None	/ None	
6-16	B	10YR 6/2	10YR 5/8	40% /	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation, wetland hydrology and hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is located in assessment area 4D.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen, D. Halladay

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PSS
Transect ID: Z-L34
Plot ID: **Z-L34-WP-02**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Oemleria cerasiformis	Herb	FACU	15
2. Lonicera involucrata	Shrub	FAC+	1
3. Rubus spectabilis	Shrub	FAC+	50
4. Ranunculus repens	Herb	FACW	50
5. Rubus laciniatus	Shrub	FACU+	10
6. Alnus rubra	Tree	FAC	90
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: 100% of the dominant species are FAC, FAC+, or FACW. Hydrophytic vegetation is present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: 4 (in.)
Depth to Free Water in Pit: Surface (in.)
Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and inundated. Wetland hydrology is present.

SOILS

Plot ID: Z-L34-WP-02

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8	A	10YR 3/2	None	/ None	Silt Loam
8-16	B	10YR 4/2	10YR 6/8	40% /	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Total depth of soil pit is estimated due to inundation. Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The combination of hydrophytic vegetation, soil saturation to the surface and inundation, and presence of hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is located in assessment area 4D.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen, D. Halladay

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PSS
Transect ID: Z-L37
Plot ID: Z-L37-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	100
2. Rubus armeniacus	Shrub	FACU	25
3. Symphoricarpos albus	Shrub	FACU	25
4. Rosa nutkana	Shrub	FAC	5
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: Only 33% of the dominant species are hydrophytic. Other dominant species are FACU. Wetland vegetation is not dominant in the sampling point and wetland vegetation in the sampling point is not indicitive of a wetland.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: 9 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The point was sampled during a wet time of the year with recent heavy rainfall. The soils are not inundated nor saturated to the surface and are not likely to meet wetland criteria during the growing season.

SOILS

Plot ID: Z-L37-UP-01

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 3/3	None	/ None	Loam
10-16	B	7.5YR 3/3	None	/ None	Loam
	B	7.5YR 2.5/2	None	/ None	Loam
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Due to the predominance of two FACU species, the unlikelihood of wetland hydrology during the growing season, and the lack of hydric soils, this sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is within mowed powerline corridor in assessment area 4A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, E. Christensen, D. Halladay	Date: 06-Feb-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Shrub Transect ID: Z-L37 Plot ID: **Z-L37-UP-02**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Betula papyrifera	Tree	FAC	50
2. Cirsium sp.	Herb	NI	5
3. Festuca sp.	Herb	NI	60
4. Poa sp.	Herb	NI	70
5. Symphoricarpos albus	Shrub	FACU	15
6. Rubus armeniacus	Shrub	FACU	10
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Two of the three dominant species in the sampling point are unidentified species of Fescue and Poa that are likely upland species, but remains unconfirmed due to the absence of seed heads during the January sampling. A dominant FAC species (Betula papyrifera) is present, along with two other FACU species. Wetland vegetation does not appear to be dominant in this sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L37-UP-02

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	A	10YR 2/2	None	/ None	Loam
7-11	B	7.5YR 3/4	None	/ None	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Due to the dominance of one FAC species and two suspected upland species, the absence of wetland hydrology, and the lack of hydric soils, this sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is within mowed powerline corridor in assessment area 4A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M.Gray, E. Christensen, D. Halladay

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PSS
Transect ID: Z-L37
Plot ID: Z-L37-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	100
2. Spiraea douglasii	Shrub	FACW	15
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of dominant vegetation is FACW. Hydrophytic vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: 10 (in.)
Depth to Saturated Soil: 2 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is saturated close to the surface, suggesting that wetland hydrology is present in the sampling point and may also satisfy wetland criteria during the growing season.

SOILS

Plot ID: Z-L37-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-18	A	10YR 3/2	10YR 5/8	10% /	Silty Clay Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Relatively low chroma colors and redoxymorphic features throughout the matrix indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The combination of hydrophytic vegetation, soil saturation near the surface, and presence of hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is located within a powerline corridor in assessment area 4A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, E. Christensen, D. Halladay	Date: 06-Feb-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PSS Transect ID: Z-L37 Plot ID: Z-L37-WP-02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	100
2. Spiraea douglasii	Shrub	FACW	30
3. Lonicera involucrata	Shrub	FAC+	25
4. Carex obnupta	Herb	OBL	20
5. Rubus armeniacus	Shrub	FACU	15
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: 100% of dominant vegetation is FAC, FACW, or OBL. Hydrophytic vegetation is present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: 2 (in.)

Depth to Free Water in Pit: Surface (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [x] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and inundated. Wetland hydrology is present.

SOILS

Plot ID: Z-L37-WP-02

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-18	A	10YR 3/2	None	/ None	Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Soils are homogenous throughout the pit. The low chroma color may indicate that hydric soils are present in the sampling point but no redoximorphic features were present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present?

Is this Sampling Point Within a Wetland? Yes

Remarks: Wetland vegetation and hydrology are present. Although indicators of hydric soils are not present, it appears that the sampling point is in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is located within a powerline corridor in assessment area 4A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: D. Halladay	Date: 06-Feb-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PFO Transect ID: Z-L37 Plot ID: Z-L37-WP-03

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Carex obnupta	Herb	OBL	95
2. Rubus spectabilis	Shrub	FAC+	50
3. Acer circinatum	Tree	FAC-	1
4. Alnus rubra	Tree	FAC	75
5. Symphoricarpos albus	Shrub	FACU	5
6. Populus balsamifera	Tree	FAC	10
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 100% of dominant vegetation is FAC, FAC+, or OBL. Hydrophytic vegetation is present.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and the depth to free water in the pit indicates that wetland hydrology is present in the sampling point.

SOILS

Plot ID: Z-L37-WP-03

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/1	None	/ None	Silty Clay Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The low chroma matrix indicate that hydric soil is present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation, wetland hydrology and hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is located within a powerline corridor in assessment area 4A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: E. Christensen, J. Rock	Date: 03-Feb-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: PFO Transect ID: Z-L37 Plot ID: **Z-L37-WP-04**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Carex obnupta	Herb	OBL	100
2. Rubus spectabilis	Shrub	FAC+	30
3. Populus balsamifera	Tree	FAC	30
4. Alnus rubra	Tree	FAC	100
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: The dominance of the obligate species (Carex obnupta) and other FAC species indicate that wetland vegetation is present.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	1	(in.)
Depth to Free Water in Pit:	12	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☑ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is inundated in February. Characteristics of wetland hydrology are confirmed in the sampling point.

SOILS

Plot ID: Z-L37-WP-04

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A	10YR 2/1	None	/ None	Loam
4-16	B	10YR 6/1	10YR 5/6	40% / Distinct	Silty Clay
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [x] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Hydric soil indicators including sulfidic odor and low chroma colors suggest that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? Yes

Remarks: The presence of hydrophytic vegetation, wetland hydrology and hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is situated near the corner of Kickerville and Lonseth Road in assessment area 4A.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, D. Halladay

Date: 06-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Meadow
Transect ID: Z-L38
Plot ID: Z-L38-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	100
2. Festuca rubra	Herb	FAC+	5
3. Symphoricarpos albus	Shrub	FACU	15
4. Rubus armeniacus	Shrub	FACU	10
5. Thuja plicata	Tree	FAC	15
6. Pteridium aquilinum	Herb	FACU	1
7. Holodiscus discolor	Shrub	UPL	1
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: The FACW species Phalaris arundinacea is dominant but other species present are FAC, FACU, and UPL. Another species in the sampling point is an unidentified species of Fescue that is likely an upland species, but remains unconfirmed due to the absence of seed heads during the January sampling. Wetland vegetation in the sampling point is not indicitive of a wetland.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)
Depth to Free Water in Pit: None (in.)
Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L38-UP-01

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-7	A	10YR 3/3	None	/ None	Silt Loam
7-8	B	10YR 3/3	10YR 5/6	10% /	Silt Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: The soil profile was only completed to 8 inches due to proximity to underground pipeline. Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland? No

Remarks: One FACW species was dominant (Phalaris arunidinacea), but other species present in the sampling plot were FACU and UPL. Hydric soils are present, but with the absence of any indicators of wetland hydrology, the sampling point is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Plot is located in pipeline corridor near assessment area 4E .

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: E. Christensen, D. Halladay	Date: 07-Feb-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Forest Transect ID: Z-L43 Plot ID: **Z-L43-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca sp.	Herb	NI	15
2. Alnus rubra	Tree	FAC	100
3. Rubus ursinus	Shrub	FACU	30
4. Oemleria cerasiformis	Herb	FACU	5
5. Rubus spectabilis	Shrub	FAC+	5
6. Poa sp.	Herb	NI	30
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: One dominant species in the sampling point is an unidentified Poa that is likely upland, but remains unconfirmed due to the absence of seed heads during the February sampling. Therefore, it was not included in the percent of species in the sampling point that are OBL, FACW or FAC. The other dominant species (Alnus rubra and Rubus ursinus) are FAC and FACU. Wetland vegetation does not appear to be dominant in this sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L43-UP-01

Map Unit Name (Series and Phase): Birchbay silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/2	None	/ None	Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: The absence of hydrophytic vegetation, wetland hydrology, and hydric soils indicate that the sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point located between Gulf Road and plowed field, just north of Henry Road, in assessment area 7B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: E. Christensen, D. Halladay

Date: 07-Feb-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PEM
Transect ID: Z-L43
Plot ID: Z-L43-WP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Phalaris arundinacea	Herb	FACW	80
2. Festuca rubra	Herb	FAC+	10
3. Poa sp.	Herb	NI	25
4. Vicia americana	Herb	FAC	5
5. Juncus effusus	Herb	FACW	10
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: One dominant species in the sampling point is an unidentified Poa that is likely upland, but remains unconfirmed due to the absence of seed heads during the February sampling. Therefore, it was not included in the percent of species in the sampling point that are OBL, FACW or FAC. The other dominant species (Phalaris arundinacea) is FACW. Hydrophytic vegetation is present in the sampling point.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 8 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: The sampling point is saturated to the surface and the depth to free water in the pit indicates that wetland hydrology is present in the sampling point.

SOILS

Plot ID: Z-L43-WP-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-9	A	10YR 3/2	None	/ None	Loam
9-18	B	2.5YR 5/2	10YR 5/8	25% /	Clay Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Low chroma color and redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland?

Remarks: The combination of hydrophytic vegetation, soil saturation to the surface, and presence of hydric soils indicate that the sampling point is within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in a plowed field just north of Henry Road, in assessment area 78.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, E. Christensen	Date: 20-Mar-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Transect ID: Z-L47 Plot ID: Z-L47-UP-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca rubra	Herb	FAC+	85
2. Taraxacum officinale	Herb	FACU	10
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 8 (in.)

Depth to Saturated Soil: 2 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks:

SOILS

Plot ID: Z-L47-UP-01

Map Unit Name (Series and Phase): Birch Bay Silt Loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16	A	10YR 3/2	None	/ None	Silt Loam
16-18	B	10YR 3/2	7.5YR 4/3	5% / Faint	Silt Loam
				/	
				/	-
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Wetland Hydrology Present?

Hydric Soils Present? No

Is this Sampling Point Within a Wetland?

Remarks:

Approved by HQUSACE 3/92

Additional Comments: The plot is located in a mowed field.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 20-Mar-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID:
Transect ID: Z-L47
Plot ID: Z-L47-UP-02

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca			
2. Juncus effusus	Herb	FACW	
3. Ranunculus	Herb		
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [x] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks:

SOILS

Plot ID: Z-L47-UP-02

Map Unit Name (Series and Phase): Birch Bay Silt Loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type?

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-18	A	10YR 3/2	None	/ None	Silt Loam
16-18	A2	10YR 3/2	10YR 5/6	5% / Faint	Sandy Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Wetland Hydrology Present?

Hydric Soils Present? No

Is this Sampling Point Within a Wetland?

Remarks:

Approved by HQUSACE 3/92

Additional Comments:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: M. Gray, E. Chrisenesen	Date: 20-Mar-07 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Transect ID: Z-L47 Plot ID: **Z-L47-UP-05**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Ranunculus acriformis	Herb	FACW-	5
2. Plantago lanceolata	Herb	FAC	10
3. Anthoxanthum odoratum	Herb	FACU	25
4. Festuca rubra	Herb	FAC+	25
5. Holcus lanatus	Herb	FAC	10
6. Cynosurus cristatus	Herb	UPL	1
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: The sampling plot was revisited on May 29, 2007 and the vegetation listed above represents species present in May. The March sampling event consisted ofonly two identifiable FAC species. 50% of the dominant species present during the May sampling wre FAC+, but the other species was FACU. Wetland vegetation is not dominant in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 16 (in.)

Depth to Saturated Soil: 2 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☑ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: The sampling point is saturated to within two inches of the surface and contains free water in the pit. Wetland hydrology is present in the sampling point.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 20-Mar-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID:
Transect ID: Z-L47
Plot ID: Z-L47-UP-08

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Poa sp.	Herb	NI	40
2. Grass sp.	Herb	NI	60
3. Ranunculus			10
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 8 (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [ ] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks:

SOILS

Plot ID: Z-L47-UP-08

Map Unit Name (Series and Phase): Birch Bay Silt Loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 2/2	None	/ None	Silt Loam
10-	B	10YR 6/2	10YR 5/8	5% / Distinct	Sandy Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?
Wetland Hydrology Present?
Hydric Soils Present?

Is this Sampling Point Within a Wetland?

Remarks:

Approved by HQUSACE 3/92

Additional Comments:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Gray, E. Christensen

Date: 20-Mar-07
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID:
Transect ID: Z-L47
Plot ID: Z-L47-UP-09

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Festuca	Herb		
2. Taraxacum officinale	Herb	FACU	
3. Plantago	Herb		
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☐ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks:

SOILS

Plot ID: Z-L47-UP-09

Map Unit Name (Series and Phase): Birch Bay Silt Loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-18	A	10YR 3/2	None	/ None	Silt Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Content in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List
- [ ] Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?

Wetland Hydrology Present?

Hydric Soils Present? Yes

Is this Sampling Point Within a Wetland?

Remarks:

Approved by HQUSACE 3/92

Additional Comments:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Chambers, V. Mead

Date: 15-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: Upland Forest
Transect ID: Z-L4
Plot ID: Z-L4-PU-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Alnus rubra	Tree	FAC	75
2. Populus balsamifera	Tree	FAC	25
3. Ilex aquifolium	Shrub	NI	25
4. Acer macrophyllum	Tree	FACU	25
5. Rubus parviflorus	Shrub	FAC-	25
6. Rubus laciniatus	Shrub	FACU+	25
7. Rubus spectabilis	Shrub	FAC+	30
8. Oemleria cerasiformis	Herb	FACU	20

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9. Physocarpus capitatus	Shrub	FACW-	10
10. Rubus armeniacus	Shrub	FACU	40
11. Galium aparine	Herb	FACU	45
12. Rubus ursinus	Shrub	FACU	25
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 27%

Remarks: Creeping buttercup (Ranunculus repens) is present nearby. The unidentified species were not included in the total number of dominant species in the sampling point. Only 27% of dominant species are FAC or FAC+. Hydrophytic vegetation is not dominant in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water: ____ (in.)

Depth to Free Water in Pit: ____ (in.)

Depth to Saturated Soil: ____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks:

SOILS

Plot ID: Z-L4-PU-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	7.5YR 4/6	10YR 5/8	/ Faint	Silt Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Redoxymorphic features in the upper 12 inches indicate that hydric soils are present in the sampling point, but the soil matrix is lighter than most hydric soils in the study area.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is SE of F38 in assessment area 7B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal
Applicant/Owner: Pacific International Terminals
Investigator: M. Chambers, V. Mead

Date: 16-Jun-06
County: Whatcom
State: Washington

Do Normal Circumstances exist on the site?	Yes
Is the site significantly disturbed (Atypical Situation)?	No
Is the area a potential Problem Area? (If needed, explain on reverse.)	No

Community ID: PSS
Transect ID: Z-L5
Plot ID: Z-L5-PW-01

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Carex obnupta	Herb	OBL	40
2. Rubus spectabilis	Shrub	FAC+	40
3. Thuja plicata	Tree	FAC	25
4. Alnus rubra	Tree	FAC	60
5. Athyrium filix-femina	Herb	FAC	40
6. Unid'd sp.	Herb	NI	50
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: The unidentified species were not included in the total number of dominant species in the sampling point. 100% of the domiant species were FAC or OBL. Hydrophytic vegetation is dominant.

HYDROLOGY

- [ ] Recorded Data (Describe in Remarks):
  - [ ] Stream, Lake, or Tide Gauge
  - [ ] Aerial Photographs
  - [ ] Other
- [x] No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12 Inches
- [x] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- [ ] Oxidized Root Channels in Upper 12 Inches
- [x] Water-Stained Leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Remarks: Sampling point is located along a creek. Primary and secondary indicators include water marks and water-stained leaves.

SOILS

Plot ID: Z-L5-PW-01

Map Unit Name (Series and Phase): Whitehorn silt loam

Drainage Class: poorly drained

Taxonomy (Subgroup): Aquandic endoaqualfs

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 3/2	None	/ None	Sandy Loam
				/	
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? Yes

Remarks: Based on the absence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is SE of F38 in assessment area 7B.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Gateway Pacific Terminal Applicant/Owner: Pacific International Terminals Investigator: K. Dunkin, M. Chambers	Date: 06-Sep-06 County: Whatcom State: Washington
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse.)	Community ID: Upland Forest Transect ID: Z-L9 Plot ID: **Z-L9-UP-01**

VEGETATION

Dominant Plant Species	Stratum	Indicator	%
1. Leontodon sp.	Herb	NI	10
2. Juncus sp.	Herb	NI	
3.			
4.			
5.			
6.			
7.			
8.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Dominant Plant Species	Stratum	Indicator	%
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

*Indicator prefix = assigned by delineator, not defined by FWS.

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Sparse cover of Canada thistle (Cirsium arvense) occurs in the vicinity of the sampling point and a trace of blackberry exists. No species were dominant in the sampling point.

HYDROLOGY

- ☐ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☐ Aerial Photographs
  - ☐ Other
- ☑ No Recorded Data Available

Field Observations:

Depth of Surface Water:	None (in.)
Depth to Free Water in Pit:	None (in.)
Depth to Saturated Soil:	None (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Wetland hydrology indicators are not present.

SOILS

Plot ID: Z-L9-UP-01

Map Unit Name (Series and Phase): Whatcom silt loam

Drainage Class: moderately well

Taxonomy (Subgroup): Aqualpic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	A	10YR 4/4	None	/ None	
3-18	B	10YR 4/4	None	/ None	Silt Loam (gravelly)
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Very fine roots are present at 0 to 12 inches. No organic accumulations are present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? No

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: Based on the absence of hydrophytic vegetation, wetland hydrology and hydric soils, it is determined that this data plot is not in a wetland.

Approved by HQUSACE 3/92

Additional Comments: Sampling point is SE of F38 in assessment area 2.

SOILS

Plot ID: Z-L47-UP-05

Map Unit Name (Series and Phase): Birch Bay Silt Loam

Drainage Class: moderately well

Taxonomy (Subgroup): Typic haplorthods

Field Observations Confirm Mapped Type? Yes

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	A	10YR 3/2	None	/ None	Silt Loam
12-16	B	10YR 4/3	10YR 5/1	40% /	Silt Loam
				/	
				/	
				/	

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: A hard pan exists below 16 inches. Hydric soil indicators are not present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? No

Wetland Hydrology Present? Yes

Hydric Soils Present? No

Is this Sampling Point Within a Wetland? No

Remarks: The lack of hydrophytic vegetation or hydric soils indicates that the sampling point is not within a wetland.

Approved by HQUSACE 3/92

Additional Comments: The sampling point is located in a routinely mowed field.